EXPLORING THE INTERSECTION OF COGNITIVE THERAPY AND EDUCATION

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ABSTRACT

Education faculty and pre-service teachers face the nearly impossible task of preparing learners for today's world. Beyond personal limitations of not being omniscient or knowing all the strategies that create strong lifelong learners, they are bombarded with mandates from accreditation, political bodies, and the state, creating gaps in pertinent strategies to support struggling learners. A major car accident of an instructor forces a critical look at possible contributions to these gaps after undergoing cognitive therapy due to a traumatic brain injury and intimately learning about the memory process. The article highlights how Greenberger's new guide for reflective practice helps the scholar-practitioner by developing working ideas, generating a reflective narrative based on personal experiences during cognitive therapy, navigating an evaluation of ideas backed by peer-reviewed literature, and providing practical solutions to bridge the gap in faculty and pre-service teachers' knowledge of the memory process. The process underscores the transformative potential of proactively incorporating reflective practice to help faculty develop resources to improve teaching practices to support diverse struggling learners.

Keywords: memory process, education, reflection, struggling learners, teacher preparation

THE PROBLEM

The problem addressed in this reflective practice is a perceived gap in educators' understanding of memory processes, particularly in effectively employing strategies that support students who struggle with these cognitive functions. This inconsistency often leads to missed opportunities in the classroom where students could benefit from targeted interventions. Educators and content specialist faculty are expected to show proficiency in the observed course outcomes but are not necessarily taught how to teach the memory process. For some legacy students, these skills have been modeled and scaffolded throughout the learners' lives, while first-generation and marginalized communities have not had this direct mentorship in academia (Archer Olson, 2023). Undergraduate graduation rates for first-time White postsecondary

learners (64%) are significantly higher, while Alaska Native/Native American (39%), Black (40%), Hispanic (54%), Biracial (60%), and South Pacific (51%) learners are significantly lower (National Center for Education Statistics, 2019). Educators, therefore, have an ethical responsibility to personalize their professional development by including research-based strategies to set learners up for success, including expanding their knowledge of the memory process.

As a first-generation learner, I was surprised by the in-depth strategies during cognitive therapy and how these might be used to support struggling learners in my classroom. Trained educators are taught assessment, classroom management, curriculum, differentiated instruction, education philosophy, educational technology, instructional strategies, and literacy techniques. However, little (if any) time is spent overtly teaching memory skills. I thought, "Why are we not spending more time teaching these strategies in early childhood to prepare young learners to elaborate on these skills as they mature and transition to higher education?"

REFLECTIVE READINESS

As Greenberger (2020) describes, reflective readiness involves cultivating a mindset that critically prepares educators to evaluate and adapt their instructional practices. This readiness is about reflection and fostering a continuous, intentional approach to professional growth. In the context of this manuscript, reflective readiness enables educators to identify disparities in their understanding of the memory process and seek strategies that support cognitive development in struggling learners. Considering a proactive stance is essential for creating inclusive and responsive learning environments that meet the diverse needs of all students.

Dewey (1933) believed that while everyone possesses thought, reflection is drastically different. Greenberger (2020) articulates Dewey's reflective practice as the following five phases: suggestion, intellectualization, hypothesis, reasoning, and testing the hypothesis by action (para. 9). Educators and some faculty are generally trained in reflection, but without a concrete guide, they cannot differentiate between passing thoughts or intellectually challenged possibilities for decision-making to transform instructional practices. Reflection is a cycle of events that turns thoughts into ideas of how things change and how one might respond to the future (Costa & Kallick, 2008).

Attitudes around reflection target open-mindedness, wholeheartedness, and responsibility (Greenberger, 2024). Open-mindedness involves being receptive to different perspectives while embracing humility, knowing that one's perspectives may be limited and could influence the problem. Wholeheartedness embodies the dedicated engagement to uncover possible solutions without limiting ideas based on personal bias, which punctuates the essence of responsibility in contributing to the academy and impacting others' professional practice. Each of these variables has been embraced through the systematic methodology of GRP by articulating assumptions investigated by empirical research and decerning plausible solutions from these findings to contribute to scholar-practitioner consideration.

As a scholar-practitioner, I am familiar with the GRP and the revised version to guide my thoughts on exploring the intersection of cognitive therapy tools to support educators with struggling learners. I was desperate to collect tools during my cognitive therapy to support me as a faculty member and in my recovery from a traumatic brain injury. Progression in therapy percolated intrusive thoughts entering my mind of how cognitive therapy tools intersected my instructional strategies with struggling learners. These thoughts made me curious and beckoned me to explore Greenberger's GRP to substantiate my understanding of potential decisions of how I could be more proactive in supporting struggling learners in higher education.

WORKING IDEAS

During my treatment, I realized that the memory process should be a cornerstone in teacher preparation programs. This realization sparked a debate in my mind about why this crucial aspect was not explicitly part of the curriculum. Understanding the memory process could significantly improve learning, providing proactive accessibility to content. This understanding is a cornerstone of my instructional design practice. Universal design for learning (UDL) and Indigenous instructional design, which consider multiple pathways to engage and enhance learning opportunities for diverse students, align with this approach. In my view, understanding the demographics of learners, providing multiple ways of accessibility, and representing knowledge is crucial for success. Educators are typically required to understand core content and professional instructional strategies, but not specifically the science of the memory process as a tool to teach learners. I will explore three possible reasons for this gap.

Working Idea One: Limitations of Teacher Preparation Targeting the Memory Process

Teacher preparation programs inadequately cover memory processes, leaving educators underprepared to address these critical skills in the classroom. This limitation often results in teachers missing the opportunity to implement memory-enhancing strategies that could significantly improve student outcomes. Three powerful sources dictate the core construction of teacher preparation programs: The Council for the Accreditation of Educator Preparation (CAEP), the state, and the political mandates and laws. CAEP accredits teacher preparation programs in Alaska. The mandates required by the Alaska Department of Education and Early Development target broad topics, leaving voids in crucial cognitive sciences, including the memory process.

I attended two teacher preparation programs: one at a private university in California for secondary science and math and the other at an Alaska State University for early childhood education. Both were masters of arts in teaching programs. I now oversee a graduate teacher certificate program at a private university in this state. No learning outcomes specifically addressed the memory process within the courses I inherited or experienced as a learner.

I feel that teacher preparation programs have an enormous load to cover quickly, so they target what is necessary, leaving holes in the instructional process. Specifically, we have aligned our learning outcomes with the student-teacher observation tool (STOT) and the Marzano teacher evaluation tool (Learning Sciences International, 2017; North Dakota Association of Colleges for Teacher Education, 2019). Neither tool has specific criteria for pre-service or employed educators to target the memory process. Instead, Marzano broadly targets standards-based planning, standards-based instruction, conditions for learning, and professional responsibilities. At the same time, the STOT focuses on learner development, learning differences, learning environments, content knowledge, content applications, assessment, instruction planning, instructional strategies, professional learning and ethical practice, and leadership and collaboration. Generalizing these categories covers the necessary requirements.

Working Idea 2: Bloom's Taxonomy—Neglecting the Importance of the Memory Process

Bloom's taxonomy of learning is widely used in teacher preparation programs. However, in my experience, more emphasis is put on higher-order learning categories (analyze, evaluate, and create) instead of lower levels of the pyramid (remember, understand, apply), which include foundational memory components. Bloom's educational objectives target a hierarchical learning order with six classifications: knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom et al., 1956). These categories aim to provide standardization, clarity for instruction, support for assessment alignment, curriculum development, and to promote higher-order thinking. The revised version includes a shift to promoting higher-order thinking, facilitating curriculum and assessment, applying advances in learning theory, emphasizing active learning, targeting a two-dimensional framework of the cognitive process and type of knowledge, and updating terminology to remember, understand, apply, analyze, evaluate and create (Anderson & Krathwohl, 2001). Understanding cognitive processes and types of knowledge is instrumental in learners' planning, instruction, assessment, and growth; however, the memory process may need explicit teaching to gain traction in solidifying and layering new knowledge.

Working Idea 3: Personal Knowledge of the Memory Process

My exploration of the long-term effects of not integrating memory strategies into teacher preparation suggests that this omission could result in widespread student performance issues and increase educational disparities over time. My awareness of the memory process before cognitive therapy limited my instructional repertoire. I have been caught in the trap of providing proficiency artifacts on what was learned instead of specific tools on how to learn or remember concepts.

Several factors may contribute to my perceived problem, such as the fact that many education faculty and pre-service members do not fully understand the components of the memory process and the strategies to support these skills with struggling learners. Teacher preparation programs oversee building a curriculum that complies with accreditation and state and political mandates and cannot always target the specific memory process. While the memory process focuses on encoding, storage, and retrieval in the brain, Bloom focuses on hierarchical categories in educational objectives and skills, from low-order thinking to more advanced complexity, not explicitly targeting the memory process. Personal lived experiences with a traumatic brain injury have accentuated my lack of understanding of the memory process embedded in Bloom's cognitive research to support struggling learners and myself.

REFLECTIVE NARRATIVE

Two years ago, I was involved in a significant car accident that totaled my car and left me with a traumatic brain injury (TBI). As the paramedics arrived, they immobilized my neck and transported me to the hospital. The neck and head pain were piercing, and the atmosphere was weighted in fear. After careful examination and x-rays, the doctor projected a full recovery within a month. I was prescribed brain rest for two weeks, then slowly returned to duties as the co-director of education at my new job.

Traumatic brain injury (TBI) is defined as a forceful impact on the head or body ranging from mild to severe (Viano et al., 2017). Concussions are a familiar name to describe mild TBIs. Brain edema, chemical changes, and brain cell damage can lead to difficulties in emotional regulation, comprehension, cognitive recall, concentration, sentence fluency, and problem-solving skills (Centers for Disease Control, 2023). Viano et al. (2017) indicated that out of the 4,385,517 people exposed to tow-away crashes nationally, 1,548,225 people (including children) suffered a minor to moderate TBI based on the Maximum Abbreviated Injury Scale (MAIS). Individuals impacted by TBIs must acclimate to an altered neuropsychological landscape when engaging with the world.

I could tolerate temporary setbacks from the accident, but when the headaches and neck pain lasted longer than two weeks, I began to become impatient. Then, I noticed unpredictable delays in my cognitive recall, sentence fluency, and emotional regulation. When these setbacks occurred, it felt like my mind was swimming against a rip tide, and I could not break free. In my mind, I could sometimes visualize what I wanted to say, but the "tide" kept pulling me further and further away. Terror shook me, and I made a follow-up appointment with my provider.

Unfortunately, my doctor was unavailable, so I met with the physician assistant who dismissed my experiences as "a normal part of aging." A few months before the accident, I graduated at the top of my doctoral class, receiving the Dissertation of Distinction award. Though I was in my early 50s, I was supposed to be at the peak of my cognitive abilities. I notified my primary doctor of my experience using the patient portal and requested a cognitive therapist referral.

My cognitive therapist utilized a two-hour cognitive function screening instrument titled the Wide Range Assessment of Memory and Learning-Second Edtion (WRAML-2). I underwent a holistic evaluation to determine the qualifications of the services. Feelings of embarrassment, shame, frustration, and fear encapsulated me. Tears welled up. My imagination paralyzed my usual growth mindset; I was the first in my family to graduate from college, earn my doctorate, be hired as a leader at a university, and everything I ever worked for was fracturing. Depression and emotional outbursts became my constant companion; then, four words returned a glimmer of hope, "You qualify for treatment."

My cognitive therapist quantifiably validated the extent of my impairment with grace, professionalism, and compassion. She praised my advocacy for self-care despite the physician assistant's unprofessional comments regarding the severity of my TBI. Early treatment for brain injuries yields positive results in recovery (National Academies of Sciences, 2022). I was prepared for rigorous, personalized cognitive strategies for the next several months. We began lessons on the memory process.

With my therapist, we focused on three broad categories: encoding, storage, and retrieval. For individuals to encode, they utilize seven strategies: visualization, rehearsal, association, categorization, storytelling and elaboration, chunking, and first-letter mnemonics (Elbaum et al., 2001). The therapist would reveal one strategy a week with associated activities and homework. As I learned about these strategies, my thoughts shifted to my students. Had I been patient, supportive, or knowledgeable enough to support them through difficult situations? Was I proactive in universal design that allowed accessibility and multi-modal options for representing their knowledge in case of memory difficulties in my instructional design? What could I have done differently to support their learning process?

By this time (three months), my headaches were starting to dissipate somewhat, and I could focus more on my lessons and make connections with my profession as an educator. In each session, I paid meticulous attention to my therapist's cues. I listened to her feedback and alternative solutions to problem-solve memory lapses. We would go over activities during my appointments, and then I was assigned homework to present at my next session.

Activities and homework varied in level of complexity. An early activity was to study an image with multiple items on a page for two to three minutes when the image was removed; then, I had to write down everything remembered on the page. An extension activity was to create a story using as many items on the page as possible. Decoding activities using keys, deciphering hidden meanings of images, naming things from a selected category in alphabetical order, using clues to fill in missing letters for words, math trivia, elimination of things that did not belong in a group of words, organizing information using tables, all shuffled through my regiment of tasks. Cognitive homework was scaffolded from multiple-choice and open-ended questions to free recall, increasing detail with each scenario. The therapist carefully observed my body language and non-verbal cues to determine when breaks were needed or activities stopped.

As Montessori educators, we are trained to observe with great detail to determine the best approach to interact with our learners to maximize growth; it was humbling to be in the reverse position. When the therapist asked me if I was okay and I said, "Yes," but she could read my body language or see my tears of frustration and humiliation, she would say, "We are going to break for a few minutes." Her role fluctuated between compassion and focused professional tasks while pushing me to my limits each session. I remember thinking to myself, she is a good teacher. She understood the gaps in my cognitive function and developed a bank of personalized strategies to support these areas; she valued me as a human and pushed me to grow from my baseline marks on the WRAML-2.

Mandated curriculums are present in many Alaskan schools; however, my therapist was a living cross-professional example that we always have the power to personalize the curriculum to support growth. Deeply understanding the memory process, having a comprehensive bank of adaptive instructional strategies, and punctuating the importance of individuals' social-emotional status are paramount in developing a strength-based approach with educators. I remember thinking we needed to spend more time training pre-service teachers on the memory process as a foundational position of progress monitoring and supporting learners.

Finally, after several months, I was released from treatment. While I did not have a perfect memory, I had gained confidence that I acquired enough strategies to help me when I was having difficulties. Immediately, I thought of evaluating the learning outcomes and integrating critical components into the upcoming academic year for our teacher preparation program.

EVALUATION OF IDEAS

Limitations of teacher preparation programs, the skewed importance of lower-order thinking in Bloom's taxonomy, and personal knowledge of the memory process will be appraised to identify the legitimacy of my warranted assumptions, backed by peer-reviewed literature and my personal experiences as a professional. Warranted assumptions are beliefs individuals accept as reasonably accurate based on logic and credible sources. Turning thought into reflection to respond to the future.

Limitations of Teacher Preparation Targeting the Memory Process

Without access to all teacher preparation programs, course content guides (CCG), or syllabi, it is challenging to comprehensively examine the learning outcomes targeting the memory process. However, based on the programs I have engaged with and currently oversee, it is evident that the memory process is not prioritized. The programs are designed to meet CAEP and InTASC standards, focusing on broad educational outcomes rather than specific cognitive processes. Numerous syllabi variations existed before my tenure, with learning outcomes varying significantly even within the same course, further complicating the focus on memory processes.

Research supports this observation, revealing broader fractures within teacher preparation programs. For instance, Li and Jee (2021) highlight the lack of responsive teacher education programs to support English Language Learners (ELLs), while Voithofer and Nelson (2021) question the integration of technology and pedagogical content knowledge (TPACK) necessary for 21st-century educators. These studies, along with others focusing on paraeducator supervision and cultural insensitivity in program replication (Romanowski, 2021; Sobeck et al., 2021), underscore the pressing need to restructure teacher preparation programs through a more contemporary and equitable lens.

The pervasive "failure narrative" articulated the gross overhaul needed in teacher preparation programs across the United States (Cochran-Smith et al., 2018, p. 20). Disconnected mandates from political, accreditation, and state regulatory bodies often dictate program structures, leaving essential teaching strategies, like those targeting the memory process, overlooked (Cochran-Smith et al., 2018). Institutions must balance meeting these external requirements and empowering diverse, 21st-century learners. As Kawasaki et al. (2020) argue, prioritizing program content that aligns with the institution's mission and the needs of its community is essential. Nevertheless, in the ongoing struggle to meet accreditation and state demands, many research-based strategies, including those targeting the memory process, remain underutilized.

Institutions must reclaim balance to maintain integrity in their program offerings, ensuring that they meet both accreditation standards and the educational needs of their students. This balance is critical for preparing educators who are not only compliant with regulatory requirements but are also equipped to address the diverse cognitive needs of their learners. Unfortunately, many research-based strategies, including those targeting the memory process, are often overlooked in the battle to find this fulcrum point. To truly empower educators and their students, teacher preparation programs must prioritize integrating cognitive strategies, such as those enhancing memory processes, to foster a more holistic and practical approach to teaching and learning.

Bloom's Taxonomy—Neglecting the Importance of the Memory Process

Lower-order thinking skills (LOTS) are defined by the lowest level of cognitive abilities in Bloom's taxonomy, such as memorization, understanding, and applying, while higher-order thinking skills (HOTS) target analyzing, evaluating, and creating (Muhayimana et al., 2022). In my experience, educators use Bloom's to guide the development and practice of instructional and assessment practices. Still, they do not explicitly articulate or teach the "why" or "how to" behind targeted assignments. It has been my experience that many educators at all levels require a lot of mundane repetition work in the LOTS domain and fewer high-stakes assignments for the HOTS domain without explicitly explaining their strategies. In my opinion, this leaves students at a disadvantage for lifelong learning and personalized strategies for the memory process.

A quantitative study by Agarwal (2019) emphasizes that higher-order thinking skills, such as analyzing, evaluating, and creating, are crucial for deep learning and should be the focus of educational practices. While traditional views suggest that foundational knowledge must be established before engaging in higher-order thinking, the study reveals that directly engaging students in higher-order retrieval practices leads to more significant improvements in higher-order test performance. These findings challenge the notion that lower-order thinking must precede higher-order learning, suggesting that educators should prioritize activities that stimulate complex cognitive processes to enhance students' ability to transfer and apply knowledge effectively, creating a conflict when supporting the importance of the memory process at foundational levels.

Melton (1963) defines the memory process into three stages: encoding, storage, and retrieval. Encoding is the first step in the memory process, allowing the brain to capture information. There are different levels of encoding, from shallow (superficial outline of structure: short-term memory) to deep (detailed context of structure: longterm memory). Eysenck and Keane (2015) outline three types of encoding: visual (how things look in your mind's eye), acoustic (how things sound), and semantic (word meaning, contextualizing, syntax, grammar, prior knowledge or experience, and inference-making). Taing et al. (2021) found that patients with TBI have disrupted activation of the medial temporal lobe structures "hippocampus, entorhinal, perirhinal, and parahippocampal cortices," responsible for declarative memory involving association, contextualizing information, memory formation, association, spatial navigation and events affecting the encoding process, storage and retrieval (p. 1).

Storage and retrieval relate to how an individual uses the items encoded. Storage focuses on the length of time and the intention and purpose of memories (Roediger & McDermott, 1995). Short-term memories can be held for 15-30 seconds for up to nine items, while long-term memories have endless storage capacity (Roediger & McDermott, 1995). In comparison, short-term memories are superficial; long-term memories demand association to anchor sustained roots in the brain. There are other strategies to help support learners with the memory process.

Core Indigenous pedagogy targets pattern thinking, which illuminates the importance of relationships and how everything is connected and provides a "conduit of memory" (Bishop, 2022; Tuck et al., 2014, p. 9). Pattern thinking targets a holistic understanding of using heuristics, control strategies, and intuitive problem-solving based on ancestral knowledge rather than working in isolation to achieve the result or remembering independently. Indigenous peoples leverage the power of relationships, as this author notes:

> On your own, you may not recall everything, but once you are in a relationship, it is all there. You remember together. This is a very different approach to learning that is expected in schools where individuals are expected to recall vast amounts of information on their own, with standardized testing commonplace (Bishop, 2022, p. 140).

Understanding pluralistic approaches to recalling information may diversify opportunities to problem-solve and remember. Blending Indigenous and Western mechanisms provides a toolbox for learners stuck in recalling information. Adopting Indigenous ways of knowing and being has been an effective method for thousands of years in storing and retrieving knowledge to sustain vital information for survival, adapting, and thriving. Personal knowledge of these two approaches is necessary to support learners.

Personal Knowledge of the Memory Process

Investigating the potential long-term consequences of not integrating memory strategies into teacher preparation programs could lead to systemic issues in student performance and wider educational disparities. My experience as an educator reveals that my initial approach to teaching was primarily focused on the outcomeswhat students had learned—rather than on how they learn and retain information effectively. This oversight reflects a broader issue in educational practices, where the emphasis on proficiency artifacts often overshadows the need to equip students with essential memory tools. Recognizing this gap has been crucial in understanding how neglecting these strategies may leave students underprepared for the cognitive challenges they face.

As a multiracial Indigenous (Taino) scholar trained in Western educational systems, my educational journey was primarily shaped by the dominant Western pedagogical frameworks. Western ways of knowing led me to undervalue relational approaches and the collective knowledge they foster. My success in navigating higher education and professional environments was often tied to conforming to these Western strategies, which I believed were necessary for success. However, my experience with cognitive therapy revealed the profound impact of relational approaches. My therapist's compassionate and non-directive method made me feel safe and confident in developing memory strategies. My experience highlighted the importance of incorporating relational and culturally responsive methods into teaching practices, as they can significantly enhance the effectiveness of memory strategies and support learners in overcoming cognitive challenges.

Reflecting on my journey, I realized that while I had consistently used Bloom's taxonomy to structure my course outcomes and assessments. I had not fully grasped the power of these tools to address cognitive challenges in learning. My approach had emphasized higher-order thinking skills like analysis and evaluation, yet I may have overlooked the importance of foundational memory strategies that are critical for deep learning. The improvements I experienced through cognitive therapy, including enhanced coping skills and reduced anxiety, underscore the value of early intervention and targeted memory strategies (Wheeler et al., 2022). This realization prompted me to reconsider my teaching practices and the need to integrate both Indigenous and Western memory strategies, ensuring that students are better equipped to succeed academically and build the confidence needed for lifelong learning.

DECISION

Many factors contributed to the problem of educators' limited understanding of memory processes, particularly in effectively employing strategies that support students with cognitive challenges. After carefully evaluating the proposed working ideas, the most plausible conclusion was that the lack of emphasis on memory strategies within teacher preparation programs was a significant barrier to improving student outcomes. This conclusion was reinforced by evidence that early intervention and targeted memory process training can significantly enhance an individual's cognitive recall (Wheeler et al., 2022). Therefore, the decision was made to prioritize integrating memory process training into these programs. A plan of action was developed to implement this decision, including creating targeted professional development workshops, incorporating memory strategies

into the curriculum, and advocating for policy changes emphasizing cognitive skill development in teacher preparation standards. A decision tree was created to visually guide my thoughts, focusing on the areas where I have the most control and influence in promoting the integration of memory strategies into educational practices (see Figure 1).

As I considered the best approach to provide a plausible solution for my problem, I analyzed my thoughts, which were influenced by research. I found that having education faculty not grounded in the memory process affected diverse pre-service teachers and struggling school-age learners through a trickle-down process. Also, within higher education, unless programs have specific learning outcomes outlined in the course content guides (CCGs), faculty are not required to target that specific outcome in data tracking. Accreditation, state, and political mandates interrupt the magnitude of shifting learning outcomes to reflect practical skills to prepare struggling and 21st-century learners

Figure 1. Decision Tree Visualization



along with the mission and vision of the institution. Lastly, the importance of lower-order learning and the memory process may be a personal perceived bias based on my experiences.

Proactive leadership skills can be used to develop a memory toolbox for faculty, diverse pre-service teachers, and struggling learners. Using Bloom's taxonomy, I will target activities for lower-order thinking skills (remember, understand, apply), harnessing an online content creation software (Articulate 360) that can be used on any device or even downloaded for individuals with bandwidth issues and built-in accommodations using Indigenous and universal design for learning. The online toolbox resource will cover three main areas: (1) the memory process (encoding, storing, retrieving), (2) the seven main strategies I learned during my cognitive therapy treatment: visualization, rehearsal, association, categorization, storytelling and elaboration, chunking, and first-letter mnemonics, and (3) supplementary resources and extensions to support diverse learners. To entice stakeholders to use the resource. I will present it to the faculty assembly meeting or colloquium at my university for my colleagues to consider. I plan to embed it in our "Tools for Success" pre-education course and use it as an additional resource for all my core education classes, drawing attention to its value.

REFLECTIVE CRITIQUE

Until my own experience with a traumatic brain injury (TBI), I did not understand the value of understanding the depth of the memory process and lower-order thinking strategies. Greenberger's new guide for reflective practice allowed me to define the problem, describe the methodology of reflecting on the problem, develop working ideas, interject my reflective narrative of my experience, and evaluate ideas back on literature using warranted assumptions to make decisions. Attending this process opened my eyes to how broken our educational system is and how to consciously think about meaningful ways to shift this paradigm within the confines of my role as an educator.

Diverse, first-generation, and diverse learners often do not have the advantage of legacy parents guiding strategies for learning and the memory process. We must teach strategies to promote success. Emotions are often amplified when you feel like the only one not remembering key information, shutting down your pre-frontal cortex. Individuals with TBIs have varied degrees of difficulty with the memory process, emotional stability, sentence fluency, and problem-solving skills, but with early treatment, there can be significant improvement (Centers for Disease Control, 2023; Wheeler et al., 2022). According to the National Center for Education Statistics (2022), only onethird of students with disabilities self-reported when they attended higher education, including accommodations for TBIs. Educators must understand the levity of developing proactive strategies to promote success.

Tuck et al. (2014) emphasize activating the "conduit of memory," anchoring relationships and Indigenous ways of knowing to blend with Western worldviews to support learners instead of historical colonial practices (p. 9). There is something metaphysical about sharing the humanness of learning in the community with someone you know who cares about you as a learner instead of a cold, distant approach to assimilation and learning as a "business." Institutions must be innovative in redefining the core attributes of quality teaching within accreditation mandates and political and state parameters.

Future studies should focus on the proposed reconstruction of teacher preparation problems, emphasizing real-world practical strategies to foster success for all learners. Understanding *how* you learn and equipping individuals with a bank of resources to use in any given situation magnifies the depth of their knowledge. It would be beneficial to explore learning strategies for higher-order thinking to reinforce critical thinking skills covering all levels of Bloom's taxonomy. Providing professional development opportunities for faculty and pre-service teachers to grow in these skills could reshape how we perceive education and learning.

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