

BARRIERS TO LEARNING CRITICAL THINKING SKILLS IN HIGHER EDUCATION

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Abstract: Critical thinking is recognized as a hallmark of higher education and a vital competency to successfully navigate the complexities of the 21st-century workforce. Yet, a significant gap persists between the theoretical importance of critical thinking and the actual proficiency levels of university graduates. This article reviews the multifaceted barriers to the development of critical thinking skills in higher education. By synthesizing the current literature, the study identifies four primary areas of obstruction: lecturer-related limitations, inadequate instructional design, student resistance, and systemic educational constraints. The findings suggest that pedagogical interventions like problem-based learning and constructivist environments can be effective but their success is often neutralized by insufficient specialized educator training and a cultural reliance on rote memorization. The article concludes with recommendations for curriculum reform and professional development to bridge the gap between academic objectives and industrial expectations.

Keywords: Barriers; critical thinking; pedagogical interventions; higher education.

I. INTRODUCTION

In the contemporary academic context, critical thinking is no longer viewed as an elective cognitive ornament but as the distinguishing attribute of university graduates (Huber & Kuncel, 2016). As global industries transition toward technology-driven, AI-integrated, and automated systems, the demand for human cognitive ability to analyze, evaluate, and synthesize complex, often contradictory data has reached an all-time high (Silber-Varod et al., 2019). The modern professional environment requires a workforce capable of independent judgment and intellectual autonomy. As result, critical thinking has been regarded as a foundational pillar of 21st-century education, essential for both economic competitiveness and democratic participation (Harris & de Bruin, 2018).

Despite this high-level consensus, the path to fostering these skills is fraught with profound ambiguity. Many educators, while acknowledging the importance of critical thinking in principle, struggle to define its operational components or implement effective cultivation strategies in practice (Brookfield, 2017). Critical thinking is frequently treated as something that is expected to happen by absorption rather than through deliberate instruction. This ambiguity has resulted in a significant and growing disconnect: students graduate with degrees that signal professional readiness, yet employers consistently report a deficiency in graduates' ability to solve real-world problems or think beyond scripted protocols (Mutakinati et al., 2018).

The stakes of this educational failure extend far beyond the workplace. As human knowledge continues to expand exponentially - doubling every few years across various domains, the volume of information is so huge that it is impossible for any single individual to be knowledgeable in a traditional sense. In this era of rapid information flux, the capacity to evaluate the utility, validity, and ethics of new information has emerged as a matter of societal survival. Without the ability to make informed judgments regarding personal, social, and political issues, individuals remain vulnerable to misinformation and manipulation (Marin & de la Pava, 2017). This paper provides an in-depth exploration of the multifaceted barriers, ranging from the psychological to the structural, that prevent this essential skill from taking root in the modern classroom.

II. CONTENTS

2.1. The Development of Critical Thinking

The prevailing consensus in educational psychology is that critical thinking is not an innate gift but an adaptable skill set that can be developed through deliberate practice and appropriate environmental affordances (Cottrell, 2017). However, the efficacy of this training depends heavily on the chosen pedagogical approach. Current literature generally categorizes the development of critical thinking into four primary methodological frameworks:

The General Approach: In this model, critical thinking is taught as a standalone discipline. Students learn the formal rules of logic, fallacies, and reasoning skills independent of any specific subject matter with the goal being to create a portable skill set.

The Infusion Approach: Accordingly, critical thinking is explicitly woven into the curriculum of a specific subject or course and students are encouraged to think critically about domain-specific content, with the teacher making the thinking processes explicit.

The Immersion Approach: This is a more organic method where students are placed in a high-challenge environment (such as intensive research or debate-heavy seminars) where critical thinking is required to succeed, though the skills are not explicitly named or taught as a separate curriculum.

The Mixed/Blended Approach: This approach involves a combination of standalone logic instruction and discipline-specific application, providing both the theoretical tools and the context to use them (Tiruneh et al., 2014).

Research suggests that promoting critical thinking within a specific discipline is often more effective than teaching it in isolation (McPeck, 2016). When skills are taught in a vacuum, students often fail to transfer those skills to their major fields of study. Furthermore, such instructional tools as problem-based learning, case studies, and concept mapping have demonstrated positive results in fostering the active learning necessary for cognitive growth (Cowden & Santiago, 2016; Yue et al., 2017).

A constructivist environment - one that utilizes collaborative tools like wikis, blogs, and peer-review discussion forums - is considered ideal for this development. Such environments emphasize experiential learning, where knowledge is not received but constructed through social interaction and the resolution of cognitive dissonance (Barak, 2017).

2.2. Influential Factors

2.2.1. The Educator's Dilemma: Lecturer-Related Factors

The lecturer serves as the primary facilitator of cognitive development. Yet, evidence suggests that many lecturers are not well-equipped for this role, often through no fault of their own (Van Erp, 2008). A significant barrier is the intergenerational cycle of passivity since many current academics are trained in passive educational systems that prioritize the transmission of facts over the interrogation of ideas. Consequently, they may not have a deep conceptual understanding of critical thinking fundamentals or the pedagogical approach to facilitate a student-centered classroom (Bean & Melzer, 2021).

Furthermore, fostering critical thinking requires a specific set of personality traits and professional values that go beyond subject expertise. A lecturer must be able to tolerate criticism from students, remain unbiased when their own assumptions are challenged, and exhibit high levels of empathy to support students through the "intellectual growing pains" of critical inquiry (De Villiers, 2015). If the instructor views themselves as the sole source of truth rather than a facilitator, the student's motivation to engage in independent inquiry tends to be curbed (Liu, 2017). Teachers' fear of losing control of the classroom narrative often leads them to revert to safe, lecture-based formats that preclude critical dialogue.

2.2.2. The Generalist vs. Specifist Debate: Instructional Factors

A significant barrier to standardized critical thinking instruction is the ongoing lack of agreement on whether critical thinking is a universal skill (Andrews, 2015). This is known as the Generalist vs. Specifist debate. If critical thinking is a general set of meta-cognitive tools, it should be easily transferable from a mathematics classroom to a political debate or a medical diagnosis (Birgili, 2015). However, specifists argue that one cannot think critically about a subject without a robust, deep-seated foundation of discipline-specific knowledge (Grant, 2018). For example, one cannot critically evaluate an argument in the legal context without understanding the specific precedents and jargon of the law.

This tension often leads to fragmented instruction. Universities may offer a single Critical Thinking course, but if the skills learned are not reinforced in other language, biology, history, business or engineering classes, the students may struggle to apply the theory of logic to the practice of their specific field. This absence of vertical and horizontal integration across the curriculum remains a primary reason why critical thinking skills fail to reach maturity.

2.2.3. Resistance to Active Learning: Student and Strategy Factors

From a biological and psychological perspective, critical thinking is cognitively expensive. The brain is an energy-saving organ that prefers heuristics and fast thinking over the slow thinking required for deep analysis. Consequently, critical thinking requires significantly more effort and discomfort than rote memorization (Yang, 2017). Students who have been conditioned by years of standardized testing, where success is defined by finding the one right answer, often show intense resistance to active learning strategies.

Strategies such as problem-based learning or simulations are likely to appear unstructured or confusing to students accustomed to passive consumption. The fact is that many students prefer the safety of a traditional lecture where they can take notes and memorize facts, as it offers a clear, low-risk path to a high grade (Tan, 2017). When teaching strategies fail to move beyond the practice of depositing facts into students' minds, critical thinking skills remain dormant. Without a shift in student expectations and a willingness to embrace intellectual discomfort, even the best-designed critical thinking interventions will face student disengagement.

2.3. Barriers to Learning Critical Thinking

The synthesis of existing research identifies four primary, interlocking barriers that impede the effective cultivation of critical thinking within higher education.

Pedagogical Inertia and Training Gaps This barrier is rooted in the fact that many lecturers do not have the formal training and methodological framework required to shift from traditional information delivery to a role that facilitates active inquiry. In many research-intensive universities, teaching is secondary to publication, leaving lecturers with little time or incentive to innovate their pedagogical methods, hence critical thinking instruction becomes a compromise and teaching can be merely test-oriented.

Cultural Constraints and Social Hierarchies In many societal contexts, entrenched social hierarchies and a pervasive culture of deference to authority discourage students from challenging the already established ideas. If a culture prizes harmony and saving face over rigorous debate, students will naturally avoid asking the *why* and *how* questions which are essential for deep analysis. Critical thinking requires a level of intellectual subversion that is often culturally discouraged.

Cognitive Resistance and the "Effort Gap" Because critical thinking requires a high level of mental exertion, students often become disengaged when they are faced with complex, open-ended tasks. This is particularly true when the surrounding educational system fails to provide immediate rewards for complex thought. When a student sees that their peer receives an A for a memorized essay while they receive a B for a complex, risky, but imperfect analysis, the system then punishes critical thinking and in return cognitive resistance persists.

Systemic Misalignment of Assessments Perhaps the most profound barrier is the systemic misalignment within institutions. Current assessment models in many tertiary establishments continue to prioritize rote memorization and multiple-choice testing because they are easier to grade and standardize. This practice actively disincentivizes the risky behavior of independent thinking or critical thinking. As the adage goes, "students don't do what you expect, they do what you inspect" so if testing and assessments only inspect memory, students will not invest in critical thinking practice.

III. RECOMMENDATIONS

To bridge the gap between academic intent and the reality of graduate performance, higher education must embrace necessary structural reform. The following recommendations are proposed to dismantle the barriers identified:

3.1. Mandatory Faculty Coaching and Professional Development

Institutions must stop assuming that their subject matter expertise automatically confers the ability to teach critical thinking. Universities should implement mandatory, ongoing professional development that focuses specifically on infusion and blended pedagogical techniques. Then educators need to be trained in how to design low-stakes environments where students feel safe to fail, question, and iterate. This includes training in Socratic questioning, scaffolding complex tasks, and managing the emotional labor of a student-centered classroom with teachers playing the role of real facilitators.

3.2. Comprehensive Assessment Reform

The most effective way to change student behavior is to change how they are graded. Universities must shift the weight of grading away from high-stakes, standardized examinations toward project-based, portfolio-based, and experiential assessments. These assessments should require a tangible demonstration of analytical reasoning, such as defending a thesis against peer critique, solving an unscripted problem, conducting an original piece of inquiry, undertaking an independent research project. Grading rubrics should then explicitly reward intellectual risk-taking and the ability to synthesize multiple perspectives, even if the final conclusion is not perfect for the sake of students' motivation to take risk and think critically.

3.3. Early Curriculum Integration

Critical thinking must not be treated as a capstone or final year objective reserved for elite students. Rather, it must be embedded into the first-year experience across all majors. By introducing students to logic, evidence evaluation, and bias recognition from their first semester, tertiary institutions can establish a robust culture of inquiry from the beginning. As a result, this can help to prevent the calcification of passive learning habits and signals to students that their role is to be an active producer of knowledge, not a passive consumer.

3.4. Fostering a Thinking Culture

Beyond the classroom, institutions should foster an environment that celebrates debate and intellectual diversity, which may involve supporting student-led forums, cross-disciplinary seminars, and public outreach programs where students must translate complex ideas to diverse audiences. When students see critical thinking being modeled by their peers and their institution's leadership, it ceases to be an academic chore and becomes a professional identity. Only then a thinking culture can flourish and students can start practicing critical thinking proactively.

IV. CONCLUSION

The 21st-century landscape demands a workforce that can do more than simply follow pre-set instructions; it requires individuals who can navigate ambiguity, detect bias, and solve multifaceted problems in the real time and real context. However, as this comprehensive review has shown, the barriers to learning critical thinking have already been deeply embedded in our current educational structures. The reliance on rote learning, the lack of educator preparedness, the cultural resistance to questioning authority, and a systemic preference for safe memorization over difficult thinking continue to impede student progress.

To bridge the gap between academic intent and industrial reality, higher education must undergo a structural and cultural transformation. We must stop treating critical thinking as a by-product of education and start treating it as the primary product. This requires placing the development of the critical mind at the absolute center of the pedagogical mission. Future research should prioritize longitudinal studies that track the efficacy of specific critical thinking interventions across diverse cultural and disciplinary contexts, ensuring that our teaching methods evolve as swiftly as the information landscape they are meant to navigate. The survival of our societal institutions may well depend on our ability to teach the next generation not *what* to think, but *how* to think critically.

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