University of Mississippi

eGrove

8-1-2022

Critical Thinking Teaching Practices in Community College

Andrea Jordan Crowley

Follow this and additional works at: https://egrove.olemiss.edu/etd

CRITICAL THINKING TEACHING PRACTICES IN COMMUNITY COLLEGE

A Dissertation Presented in partial fulfillment of requirements for the degree of Doctor of

Education in the Department of Higher Education at the University of Mississippi

By

Andrea J. Crowley

August 2022

ABSTRACT

As artificial intelligence (AI) becomes more ubiquitous, and machine learning continues to optimize systems and data, the human contribution to our working and social worlds must evolve to be more sophisticated. Labeled as the fourth industrial revolution by the World Economic Forum (2019), employment roles comprised of repetitive tasks and rote analysis will no longer be needed because machines and artificial intelligence will be able to program themselves to perform these functions. Many experts forecast that for every low-skilled occupation a new, more sophisticated role will be invented (Skilton & Hovesepian, 2018).

Machines will continue to optimize and perform automated tasks and our employers need people to direct the technology at all levels. Organizations across all sectors will need people who can adapt, anticipate, and vision the future to stay relevant. Underpinning these authentic intelligence skills of imagination, anticipation, and judgment is proficiency in critical thinking.

This qualitative study engaged nine faculty members in a large community college who represent different divisions withing the academic affairs unit. The main aim of this research examines how community college faculty contextualize and develop critical thinking skills in the classroom setting. Using Shulman's framework of the Knowledge Base of Teaching (1987) to make meaning of the findings, the study examined how the faculty group are using effective methods to build knowledge (Arum & Roska, 2011; Facione, 1990; Halpern, 1997; Kurfiss, 1988) and the ability to self-direct intellectual pursuits (Facione, 1990; Kuhn, 1999; Paul & Elder, 2010).

This study suggests that building curiosity and the explicit habit of thinking, is an opportunity for future focus. Recommendations include faculty development programming for teaching applications that create student-led inquiry environments and how institutions might design the educational journey as more than topical skill or knowledge acquisition. Building competence in self-led thinking may be an opportunity to address the critical thinking skill gap.

As an ethical and social justice strategy, colleges that promote student skill application and the habit of intellectual growth will prepare their students for future success in various work roles as those roles innovate in response to transformational technologies.

DEDICATION

Thank you to my family for all of your support and encouragement throughout this process. This arduous, analytical, and creative work pushed my thinking in all directions. Without your support, I would not have completed this enormous accomplishment. Megan, Danny, and Emily, your intellectual and professional pursuits help me frame the importance of this research. You inspire me to evolve my thinking and I thank you for your unwavering belief.

To my husband, Dan, your steady care and loving guidance propelled me forward in this project and in life. These last three years have pushed me to speak out against inequalities and systemic issues exacerbated by our politics and the pandemic. Thank you for listening and thank you for supporting me in my work to go out and do something about it. Navigating these difficult but meaningful moments allows us to grow in our compassion and love and there is no one I would rather journey with than you.

Thank you, dear friends, who throughout this project, provided constant affirmations and positive visioning. Your faith in me sustained my conviction and focused my attention on the importance of persistence and expression.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

MANUSCRIPT 1: AN OVERVIEW OF THE CRITICAL THINKING GAP

Introduction of the Problem of Practice

Hiring the right person for the job has always been an employer credo. Regardless of the private, public, or non-profit sector, employers seek associates who can sustain and improve organizational operations and brand value (Teng & Ma, 2019; Wilkie, 2019). Staying relevant in today's fast-paced markets requires innovation, and organizations who intend to grow and thrive cannot anticipate or execute innovative ideas without a workforce that can adapt and respond to opportunity and invention (Flores, et al., 2012; Skilton & Hovesepian, 2018; Teng & Ma, 2019; Wilkie, 2019). Thought leaders across industry and education agree that employees who can demonstrate critical thinking will be well-positioned to succeed in the workplace (Arum, et al., 2021; Association of American Colleges and Universities, 2020; Flores, et al., 2012; National Association of Colleges and Employers, 2020; Skilton & Hovesepian, 2018; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Wilkie, 2019).

In a local market in the midsouth, employers lament over the lack of an available and qualified workforce; employers are struggling to fill jobs. In addition to discipline-specific knowledge, employers seek individuals who understand the nature of the work and operate within the ever-changing culture of work. Local workforce agencies and college systems offer technical skill-credentialled programs; however, an essential competency employers seek in addition to technical skills is thinking skills (Gross, 2017; HRO Partners & Younger, 2016; Kyllonen, 2018). In addition to specific job role skills, many employers seek candidates who can demonstrate the problem-solving skills needed for future supervisory or managerial functions. Workforce readiness is an evolving term and a complex educational outcome. Before we can

determine how to prepare students to think critically for workplace preparedness, we must first understand the context of the request.

Echoed across almost every workforce development and career pathway pipeline development conversation are requests for a skilled labor force who can problem-solve. Local employers state that they need employees who can demonstrate skills that lead to independent decision-making and team buy-in. They want employees who can think through a set of inputs, whether operational or interpersonal and solve problems through systems analysis. Interestingly, some employers do not state why this skill is essential or contextualize its relevance as a professional in the field; they summarize the inefficiencies caused by the lack of critical thinking skills in their work teams and want to address this specific operational issue.

However, further clarity on the context comes when we speak with technical hiring managers or division leaders within a technology service organization. The context of the need for them is clear; technology roles require change-management skills. These employers state that technology is changing processes and systems exponentially, and people must anticipate the disruption and opportunities that innovations create.

Fueled by the accelerated pace of automation during the pandemic, our employment partners are trying to contextualize the new work-role skill requirements in their recruiting efforts. The standard screening processes for recruits are not producing the type of employee they seek, and jobs remain unfilled. Business leaders and HR managers seek solutions to address this local workforce skills gap and look to the community college to help develop work-ready graduates. Our employer partners want to know that program developers and faculty at the community college understand workforce development issues. They want to know how we intend to prepare students for the future of work.

Considering the complexity of this ask and the desire to produce an answer, faculty perceptions about teaching critical thinking skills must first be understood. This study intends to explore how faculty within a community college determine how to teach and contextualize critical thinking skills for workforce readiness.

Problem of Practice

Currently forcing workplace invention and innovation are what industry professionals call transformational technologies (Wilkie, 2019; Skilton & Hovesepian, 2018). Artificial Intelligence (AI) and other intelligent systems now permeate most industries and organizations, both for-profit and nonprofit, leverage this automation to become more competitive and relevant (Wilkie, 2019; Skilton & Hovesepian, 2018). Technology has propelled innovation; however, as organizations attempt to operationalize technology to streamline systems and global alliances, technology is also causing a US workforce pipeline and employment crisis (Baird & Satyanarayana, 2019; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Wilkie, 2019).

Labeled the fourth industrial revolution (World Economic Forum, 2019), the technology effect in the workplace has caused a shift in desired human skills and competencies. Global, domestic, and local leaders in business, healthcare, technologies, and manufacturing report that they need multi-skilled workers whose thinking skills are just as sophisticated as their technical skills. Research conducted by several government agencies, private sector leaders, and educational institutions all agree that the most highly sought-after skills are critical thinking skills, like self-awareness, creative reasoning, problem-solving, and adaptability (Baird & Satyanarayana, 2019; McKinsey Global Institute, 2019; National Network of Business and

Industry Associations, 2015; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Vasanthakumari, 2019; Wilkie, 2019).

The 2020 McKinsey report, (De Smet, et al., 2020) *Ready, set, go: Reinventing the organization for speed in the post-COVID-19 era* directly speaks to the need to develop critical thinking skills.

These companies recognize that the pace and scale of learning must keep up with innovation and changes in technology. Skills can and do expire. Organizations need people who can continually learn and adapt. In many cases, companies will need to reskill large portions of the workforce. That will require expanding the learning content available to employees and using technology to deliver what is needed to each person. It also will mean building the organizational and institutional muscle to strengthen the skills related to learning how to learn. (p. 7)

Employers and economists struggle to predict the exact job roles of the future due to the rapid integration of transformational technologies (De Smet, et al., 2020; PEW, 2016; World Economic Forum [WEF], 2019). Many work roles of the future have not been thought of yet. Workforce experts predict that employees who can manage quick adaptation to processes and people will succeed (Association of American Colleges and Universities, 2020; Flores, et al., 2012; National Association of Colleges and Employers, 2020; Skilton & Hovesepian, 2018; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Wilkie, 2019).

Typically, many workforce development initiatives only focus on developing technical or discipline-specific skills. Now conversations are centered around building broad thinking skills. This shift in skill expectation illustrates technology's underlying effects in the modern workplace. Employers seek work-ready personnel who can use their critical thinking skills to

make decisions and adapt to new processes and relationships at work in real-time. Critical thinking supports change management, self-regulation, and moreover, decision making. The current workforce pipeline challenge is in finding employees who demonstrate these agile, or critical thinking skills.

Because employers have long partnered with educational institutions as a workforce pipeline and developing critical thinking is a main aim of education generally, one would presume that new college graduates are ready to meet the demands of the modern workplace. Unfortunately, institutions of higher education seem to fail in this regard. In both academic longitudinal studies (Huber & Kuncel, 2016; Arum & Roska, 2011; Pascarella, et al., 2011) and workforce agency reports (Committee for Economic Development [CED], 2021; DeSmet, et al., 2020; McKinsey Global Institute, 2019), many college students do not demonstrate adequate and contextual critical thinking growth as a result of their education. In order to understand the practical implications of this information, more research is needed in specific contexts that will illuminate how students learn to think critically in college settings and how those students have learned about the role of critical thinking in the workplace.

Setting for the Study

The setting for this study will take place in a mid-south community college. The college was formed by the local community college and the state technical institute's merger in 2000 and serves both a large local urban and vast rural, regional community through seven locations across two counties.

College and Community Demographics

This metropolitan statistical area (MSA) is one of the poorest cities, with over one million residents living in poverty. According to the United States Census Bureau (2021), this

MSA has the highest overall poverty rate in the state, with 1 in 4 persons living below the poverty line, and also had the highest child poverty rate in the country in 2018 (United States Census Bureau, 2021). The MSA population's demographic statistics are 64.1% African American, 25.7% White, 7.2% Hispanic or Latino, 1.7% Asian, 1.5% two or more races, and 0.2% Native American.

This particular institution has an enrollment of approximately 8,000 students for the 2021/2022 academic year; fifty-one percent are registered as full-time. Reflective of the community demographics, this institution serves a majority of students who identify as African American and is recognized as a Predominantly Black Institution (PBI) (Department of Education, 2021). The student demographics of this college break down as such: 63% of students identify as African American, 25% white, 6% Hispanic or Latino, 2% Asian, 1% international, and 3% two or more races (U.S. Department of Education, 2019).

Institutional Outcomes

Under the direction of a new president hired in 2015, the college has invested in key partnerships for success. The first of these important partnerships offered guidance on high-impact practices to improve student retention and graduation rates. These efforts began by joining the Achieving the Dream (ATD) program. The ATD program comprises over 200 community colleges focused on sustainable and transformational educational and community change (Achieving the Dream [ATD], 2021). Secondly, the institution integrated a new funding process through the state governor's Drive to 55 initiative which outlines a plan to support at goal of least 55% of state residents in earning a college degree or certificate by 2025 (Tennessee Board of Regents [TBR], 2021).

The funding for this initiative was made possible through the states "Promise" scholarship program "that provides two years of tuition-free community or technical college to high school graduates beginning with the Class of 2015" (ATD, 2021). Additional funding was available through the state's "Reconnect" program to fund adult learners who had completed some college but had not earned a degree (TBR, 2021). With a goal of 55% degreed or certified students by 2025 and student financial support coming from the tuition assistance programs, the college's primary goal was to reimagine the processes in all areas to be student-centered and focused on student achievement, reducing access barriers, and improving success outcomes.

Although not at the desired levels, five-year outcomes have improved dramatically, as evidenced by an increased three-year graduation rate of 14% (up from 7%) in 2019. Battling against a 53% attrition rate, the college has created a published framework within the strategic plan that requires disaggregated data-driven decision making with student success at the center of each discussion. At present, this strategic work details a three-element approach; the institution committed resources to examine data, train and empower faculty, and examine policies and practices that support student achievement. This study intends to drill deeper into how the institution trains and empowers faculty to improve student outcomes, specifically in developing critical thinking skills for professional readiness.

<div align="center">**Statement of Positionality**</div>

My professional and personal positionality is grounded in a firm belief that all people have a right to pursue their dreams. Dreams come in all forms and I believe that a central role in higher education is to offer pathways and support to help students articulate and formulate a solid understanding of the work required to reach those dreams and how to navigate the complex decision-making that inherently follows.

Through several years as a marketing professional in a corporation, I developed a systems-thinking perspective on how to cultivate and retain successful employees who could grow business relationships and opportunities. This business experience gives me the ability to synthesize and translate business needs into an academic context. Student professional preparedness and job role fit has been my central focus since joining the academe in 2012.

I design professional development programs and facilitate professional practices courses. I have experience designing and implementing these types of programs in two academic settings, a small urban private art college as an Associate Professor and Director of the Professional Practices division, and a large urban community college where I currently direct and teach in the college's signature workforce program. I also designed, and instruct in, the college's academic apprenticeship and internship professional readiness programs. I have designed and facilitated programs for business-led incumbent workforce development for over twenty organizations ranging from half-day professional development sessions on a variety of topics to multi-week new employee orientation programs. These employer perspectives of workforce development needs have informed much of the competency development plan we use in skill application activities.

Teaching in our programs helps me create an instant student-centered feedback loop for curricular and program improvement. The community college environment is vastly different than the four-year private college I worked in previously. On paper, the student population held similar characteristics; both populations were enrolled in Predominantly Black Institutions (PBI), had above 80% Pell eligibility, and were predominantly first-generation students. I assumed that the student-centered programming created at the four-year institution would translate easily, but it did not. It is not the similarities that leads to curriculum improvement; the differences in

community college students' perceptions about their education warranted validation. In a meta-cognitive moment, I now realize through investigation of my own research framework, Shulman's (1987) Knowledge Base of Teaching that "learner experiences and characteristics" are unique and should not be generalized. Unlike the four-year art students who came to learn and apply their skills into a professional art discipline, the community college students, generally, did not express their attendance in school as learning journey.

When asking our community college students the question, "why college?", often, they reported they come to college to get a good job; many of these students see attending college as a check mark towards a better future. A small minority of students report personal fulfillment and growth as the primary reason to come to college. In the beginning weeks of these courses, students rarely describe their education as anything but a means to an end. There is typically little dialog of their personal, cognitive growth or educational journey at this time; most students see themselves as they are now, just in a better situation, later. Once students begin to evaluate connections between learning and personal growth, thinking and reasoning improves. This self-awareness is a building block to guide decisions in life and career as goals change over time.

Critical thinking development supports success with problem-solving within a system of multiple inputs, regardless of academic, professional, or personal context. Education is a discovery process that helps evaluate, articulate, and practice personal and professional skills that lead to sustainable careers and personal fulfillment. When decision making shifts to the student, that benefit lasts a lifetime. In equity-centered practices, each student would have the opportunity to explore these concepts against their own thoughts, goals, and positionality. Successful delivery on a main aim of education, learning, relies upon our ability to facilitate individual student self-evaluation to articulate one's unique position and informed point of view.

A secondary context motivates me which derived from asking, "how college"? This speaks to the social justice aspect and balance of power within education. Students typically are not critical about how the school is run, nor the type of education they will get. The programs that students engage with are assumed to be well-architected and lead to prosperous results. As most students believe that education directly provides the pathway for better employment and social and economic mobility (PEW Research Center, 2016), they trust that the educational system will lead to those outcomes. Each program and course must make efforts to increase familiarity with the larger system of college education and expectations of learning to improve equitable positions for success. One way that students learn how to advocate their position for social or personal change beyond the college classroom begins with internal modeling of such leadership by example. In my work, I hope to forward intentionally designed equity-centered thinking that develops the student learning outcomes we promote.

I believe that there is an implied social contract for higher education and the professionals that work within those processes. I feel responsible as steward of this trust to create and improve programming that meets the needs of our students. Students work to articulate and supply the "why" and through this knowledge acquisition, I believe higher education professionals should professionally supply the "how". This professional positionality echoes the conceptual framework used for this study. A knowledge base of teaching exists within all of us faculty and staff in higher educational institutions. Connecting with students on how "issues are organized, represented, and adapted" (p. 8) to the "diverse interests and abilities of learners" (p.1) paves the way for education to be valuable and transformative for people (Shulman, 1987). I believe each transaction, whether administrative or instructional should share responsibility in human development. This ethos must permeate a college environment so students see collaboration and

knowledge exchange in everything we do. I aspire to do it better than we say it. If college learning is transformative, then the why of learning will forever evolve and the how of learning will consistently improve.

It takes a particular skill and awareness to know how to and why one should evaluate knowledge against personal and professional goals as part of life happiness. It is in this context that I seek to understand how colleges teach critical thinking skills. I seek to learn more about how are students taught, formally and informally, to use critical thinking and reasoning skills to improve their options.

Literature Review

Context of the Problem of Practice

Global Context

The United States (US) labor market must be able to keep in-step with the skill demands of what the World Economic Forum is calling the Fourth Industrial Revolution. In order for the US to remain an economic leader and preserve our nation's prosperity, investments to develop a large and skilled workforce are essential. According to a report from the Committee for Economic Development (CED), "continuing to field a world-leading, skilled workforce is both more essential and more challenging than ever to the mission of delivering increasing prosperity for American families and preserving our nation's economic leadership" (CED, 2019). The Fourth Industrial Revolution, "the rise of intelligent systems," is characterized by widespread automation and artificial intelligence (AI) infusion into almost all aspects of business operations, changing the way "materials, money, products, and services are made, exchanged, and consumed" (Skilton & Hovesepian, 2018). New technologies are forcing a workplace shift in desired skills from more discipline-specific and technical skills to a demand for multi-skilled

workers (Baird & Satyanarayana, 2019; National Network of Business and Industry Associations, 2015; Teng & Ma, 2019). Multi-skilled workers can critically think to solve problems in diverse environments using their technical knowledge. The implementation of intelligent systems affects the way multiple industry sectors deliver goods and services and our workforce must be ready and able to adapt to constantly changing technological advances within their work environments.

Employer Context

As jobs become increasingly automated, employers seek workers with skills that machines cannot replace (Wilkie, 2019). According to Heckman & Kaust (2012), employers are willing to pay top dollar for employees who can interpret information and solve problems. The 2019 report by the Society for Human Resources Management (SHRM) supports this claim by stating that 76% of the 650 employers surveyed state that critical thinking skills are very important to gaining leadership positions within their organizations (Society of Human Resource Management, 2019). As a result, critical thinking as a base workplace competency is in higher demand than ever before in our industrialized history. As cited in Kyllonen (2018), the National Association of Colleges and Employers (NACE), ranks critical thinking and problem-solving as priority career ready competencies as technology will force workers to employ "skills used to solve novel, ill-defined problems in complex, real-world settings" (p. 11).

Critical thinking is an identified, defined competency (Arum & Roska, 2011; Facione, 1990; National Association of Colleges and Employers [NACE], 2020) that is an important skill for career success (NACE, 2021). According to the Committee for Economic Development [CED], (2021), "The pace of change, including forced technological transformation during the pandemic, demands a workforce of life-long learners who continuously upgrade their technology

skills as well as "soft" skills valued by employers, including critical thinking, communication, and creative, "out-of-the-box" thinking—skills that cannot be automated". The report adds, "In response, the US will need to execute a comprehensive, collaborative strategy for preparing, upskilling, and reskilling a future-ready workforce" (CED, 2021).

Competence in critical thinking improves innovation, more efficient operating systems, and profitability from the employer's perspective. However, the lack of representation of this skill is an emerging threat to American productivity (Flores, et al., 2012; US Chamber of Commerce Foundation, 2014; Society of Human Resource Management [SHRM], 2019). Employers nationwide report that they cannot fill crucial operational positions within their companies because they cannot find multi-skilled workers. "Three out of four employees lack observable critical thinking skills, according to employers" (Flores, et al., 2012; SHRM, 2019), and without this skill representation, US companies are faltering.

According to the SHRM report, 64% of employers found it "difficult or very difficult" to recruit qualified candidates who demonstrate adequate critical thinking skills (SHRM, 2019). Cited in a US Chamber of Commerce Foundation report (2014) Managing the talent pipeline: A new approach to closing the skills gap, a survey by Chartered Global Management Accountant (GCMA) for the manufacturing industry further states that the inability to fill critical positions with competent employees is a recruiting and workforce development pipeline failure. "Ineffective human capital management has caused 43% of employers to fail to achieve key financial targets, 40% have a reduced ability to innovate, and 37% were unable to start a major project or strategic initiative" (US Chamber of Commerce Foundation, 2014).

Businesses expect higher education institutions to build talent pools ready for the job market demands, but higher education is getting low marks for their effort despite the attention

given to workforce development efforts and partnership programs uniting business and educational institutions (Fuller, et al., 2014; US Chamber of Commerce Foundation, 2014; Society of Human Resource Management, 2019). Specifically, human resources professionals state that the work-ready skills gap has not shown any improvement over the last few years stating that fifty-one percent of over 1,000 human resources professionals report that "education systems have done little or nothing to help address the skills shortage issue" (Society of Human Resource Management, 2019, p. 7).

As cited in Hirschy et al., (2011), a 2001 study conducted by Carnevale and Desrochers showed that community colleges are a primary source in the workforce development pipeline as they offer "licensure and certification in myriad occupations as well as imparting "soft skills" such as critical thinking and problem-solving. In addition, as job roles expand and require more complex thinking and knowledge, "professionals turn to community colleges to provide the training for certification" (Hirschy, et al., 2011, p. 300).

Linking the business relationships with the local community college for this study specifically, 25 out of 46 comments mentioned the community college relationship when answering "Which recruiting relationships are not as strong as they should be" (HRO & Younger, 2016, p. 82).

Higher Education Institutional Context

Employer perceptions regarding graduate work readiness in the area of critical thinking is alarming, considering that institutions across the country are focusing on enhancing student critical thinking through a variety of initiatives. Identified as an essential skill with over 99% of faculty describing it as "very important" (Huber, 2016), nationwide initiatives have been

underway for a decade to integrate it into existing programs, mostly in general education curriculum (Arum & Roksa, 2011; Arum, et al., 2021).

Assessing Critical Thinking in Higher Education. Arum and Roska (2011) published Academically Adrift, the highly controversial findings from a two-year study in critical thinking gains of college students. The researchers used the Collegiate Learning Assessment (CLA) as an assessment of critical thinking, written communication, and complex reasoning skills to measure gains in thinking as a result of educational efforts (Arum & Roska, 2011). The CLA was administered to incoming freshmen and then, again, at the end of the sophomore year. College students, almost half of the study participants, showed no measurable improvement in their critical thinking skills (Arum & Roska, 2011). In an attempt to replicate these findings, an additional study was conducted to determine the generalizability of these findings. The authors determined that these findings were replicable. Additionally, a longitudinal study conducted by Pascarella, et al., (2011) found the results to be the same.

In a 2011 Pew Research Study, titled *Is College Worth It?*, over 1,000 university Presidents weighed in on the purpose of higher education. The data shows that answers conform to institutional designations. For instance, Presidents of four-year universities are more likely to say that education is designed to help students "mature and grow intellectually" and community college Presidents are more likely to declare the purpose of higher education is to "provide skills, knowledge and training to help them succeed in the working world" (PEW Research, 2011, p. 55). Considering this leadership paradigm, this study aims to understand how critical thinking is contextualized within a specific discipline in a community college setting. This may be evidence that speaks to the lack of critical thinking pedagogy overlap between discipline specific course curriculum and liberal arts curriculum and programming elements.

Research on critical thinking outcomes has begun to question the pedagogical difference in the number of academic experiences versus the types of experiences that produce competent critical thinkers within their discipline. Some research has failed to show any evidence linking liberal art program curricula to critical thinking improvement (Huber & Kuncel, 2016, p. 433; Arum & Roska, 2011; Pascarella, et al., 2011). Some research details best practices on how to embed curricular activities that develop critical thinking within the discipline for a more robust experience (Arum et at., 2021; Kyllonen, 2018; Kuhn, 1999).

Post-COVID Equity Context

The context of this problem and location of this study speak directly to ethics, equity, and social justice. As this dissertation is guided by these principles of the Carnegie Project on the Education Doctorate (CPED), connections to these principles exist throughout the narrative.

Illustrating the rapid change and evolution of business operations, the post-COVID workforce will have to adjust to "transformations and innovations" which now drive many workforce development initiatives (CED, 2020). The US labor market recovery is in the beginning stages, and many businesses leveraged technology to adapt and innovate during the pandemic. Displaced workers will come back to a job they may not be skilled to maintain. A recent study from the National Equity Atlas, "the nation's most detailed report card on racial and economic equity" (Nationalequityatlas.org, n.d.) details how technology in the post-COVID world is disproportionately affecting communities of color. "Automation is accelerating in the wake of the pandemic, and it disproportionately places people of color and immigrants at risk of being dislocated from their jobs. Latinx workers face 28 percent greater automation risk than White workers, and Native American and Black workers face 21 and 18 percent more risk, respectively" (Langston, et al., 2020, p.45).

The coronavirus crash brought these structural challenges into clear focus,

exposing the gap between college-educated, primarily White, knowledge

economy workers who could easily continue to work from home via computers,

and lower wage, predominantly Black and Brown service sector and gig economy

workers whose work puts them face-to-face with the public. Race and the Work

of the Future 10 Workers of color, especially women, were disproportionately

employed as "essential workers" who continued to work and have been more

exposed to the health risks of the virus, and they were also disproportionately

among the "nonessential" workers in hospitality, retail, tourism, and other sectors

that have experienced the greatest layoffs, diminished hours, and cut wages (p.9)

Defining this scenario as automation risk, Langston et al., (2020) state, "Certain

occupations will become obsolete; others will be profoundly changed, expanded, or combined"

(p. 44) and contextualizes the impact of this change by reporting that some of these processes

cannot be reliably predicted.

Given the current trajectory of automation-driven job change, it is clear that

people of color are at increased risk of job disruption that may push them into

more precarious, marginalized work or displace them from the labor market

altogether in the absence of proactive, equity-focused policy solutions.

Automation risk is best calculated in terms of the likelihood of

computerization of the underlying tasks that make up a given occupation, which

can lead to worker displacement. Very few jobs consist entirely of tasks that can

be computerized, but most occupations include enough automatable tasks to be

considered at risk of automation. People of color are disproportionately employed

in jobs that offer unstable, precarious, or low-wage work and face an elevated risk

of automation compared to good jobs. Many large occupations, such as food

preparation workers and warehouse workers, have recently begun to experience

displacement due to automation. English-language fluency is another

compounding issue, carrying a difference of 23 points in automation risk.

Workers who do not speak English face an automation risk of 73 percent; those

who speak the language but not well are in occupations that face on average a 70

percent automation risk, and those without a four-year college degree face a

significantly higher automation risk than those with a bachelor's degree. (p. 46)

Reskilling in the workplace is not the only issue driving equity concerns; many unjust

racial and societal practices are at the forefront of post-COVID economic recovery discussions.

Communities of color have a weaker economic position, overall. Cited in a report by the

Hamilton Project (2020) which promotes policy suggestions to mitigate the racial economic

inequality brought on by the pandemic, "Black workers are more likely to work within the low-

wage labor market...and relatively unstable employment overall" (p. 2) and concludes that

"Black Americans are generally in an even weaker position to absorb this economic adversity.

Black families face a range of economic risks without the buffer from stable employment,

adequate earnings, or sufficient savings and wealth accumulation" (Hardy & Logan, 2020, p.7).

The CED reports that the pandemic has "disproportionately displaced minority workers,

women, youth, and workers with lower educational attainment" (CED, 2021). The National

Governors Association (NGA) in conjunction with the American Association of Community

Colleges (NACC) reports that over 14 million jobs were lost in the pandemic, most of those in

lower-income service jobs (NGA, 2020). According to a report from Chairman Powell at the

Federal Reserve, "among people who were working in February 2019, almost 40 percent of those in households making less than $40,000 a year had lost a job in March" (Powell, 2020).

The pandemic, which has disproportionately affected low-income communities and communities of color, has magnified this existing problem of practice. The US needs a multi-skilled workforce to lead globally. Job roles are rapidly changing and educators, policy-makers, and employers must work together to design and fund equitable reskilling initiatives that develop the sophisticated thinking skills required of this post-pandemic workforce.

Attracting work ready employees post-pandemic is not just about thinking skills acquisition. Employers must participate in training and recruiting processes that ensure an equitable return to work, post-pandemic. Workers may find it challenging to reenter the workforce as many must gain new skills to return to the work they once performed as the nature of that work has evolved in their absence.

As we prepare the displaced and current workforce to be ready for the challenges and opportunities brought about by transformative technologies, open access Community Colleges are well positioned to offer low-cost programming that reaches all people. Programming which purposefully includes communities of color, low-income, and first-generation students is critical to alleviate the disproportionate impact of the pandemic. Equitable programming, intentionally designed, would increase familiarity with the post-pandemic workforce expectations as well as increase opportunities for training and credentialling.

This research intends to frame the necessity for critical thinking development for economic mobility and the researcher acknowledges how critical thinking will also benefit the whole-person as we all work together towards a more inclusive and just society. Critical thinking is, at its foundation, a competency that creates autonomy and self-empowerment. If we as a

society truly hope to create equality through equity and social justice policy, critical thinking toward how the pandemic has disproportionately affected communities of color is essential. The global pandemic continues to drive technology advances and it is the opinion of the researcher that policy makers, employers and educators work together to ensure that all citizens have access to and the right to build prosperous, pandemic-proof, long-term careers. In this work, we might be able to address some of the wealth and education gaps that "are well-documented and attributable to historical discrimination and exclusion from education" (Hardy & Logan, 2021).

The Local Context

Workforce reports from a mid-south region parallel the national narrative that new hires do not have the soft skills they need to be successful in the workplace (HRO Partners & Younger Associates, 2016; Gross, 2017). A 2016 report commissioned by the Greater Memphis Alliance for a Competitive Workplace (GMACW), as cited in HRO Partners & Younger (2016), collected information from 152 employers representing seven major occupational sectors in the local Metropolitan Statistical Area (MSA). These sectors were defined as Information Technology (IT), Architecture & Engineering (A&E), Heavy Equipment Technology (HET), Logistics/Warehousing, Medical Device Manufacturing, Advanced & General Manufacturing, and Finance, Insurance, & Business Services (HRO Partners & Younger, 2016). According to this workforce report, several aspects of employee skill gaps repeated frequently. When asked about the "greatest talent development challenges facing your company", over 80% of employers stated that "Applicants don't have the skills we require" and over 50% of employers specifically stated that "New hires lack soft skills (communication, customer service, teamwork, etc.)" (HRO Partners & Younger, 2016, p. 74).

These sentiments are echoed in a report commissioned by the Memphis Area Association of Governments (2017), as the first key theme identified as an obstacle to local economic prosperity is "Labor force issues are holding back economic growth" (Gross, 2017 p. 5). The report continues, "the steering committee, focus groups, and interviews all identified several serious gaps in labor force competitiveness (relating to both skills and job readiness) that many claims are holding back the region's economic growth" (Gross, 2017 p. 5). Gross (2017) states that the GMACW should take the lead in ensuring that local workforce efforts, including local college programs, offer the skills necessary for the local workforce to thrive and remain competitive as "job readiness programs also go hand-in-hand with any job training" (p. 24) and, within a critical anchor industry, "logistics cluster is becoming more automated" (pg. 7), (Gross, 2017).

Inflaming the argument that businesses report a lack of soft skill development in post-secondary education programming, Gross (2017) reports there is also a local "disconnect between the targeted industries and the workforce development programs that are being developed" (p. 31) as "there appears to be a dearth of direct, local technical assistance for training and workforce development (Gross, 2017, p. 31). This direct critique of the local workforce and college systems is alarming as these institutions claim to be the provider of such skill development in the programs they offer. As a matter of ethics and social justice, local training and workforce development institutions must understand the needs of their community and deliver thoughtfully constructed, effective skilling initiatives that target the most vulnerable populations to improve economic mobility of the community.

Skill Gap Improvement Through Access to Formal Education

In order to adapt to ever-evolving technology, communicate and anticipate workplace changes, future employees must now evaluate the most effective method to gain these coveted workplace skills. As a result of these new workplace expectations, many Americans see higher education as the pathway to maintain or increase career opportunities and as of March 2021, roughly seventeen million undergraduates attend American colleges to attain the skills they need for gainful employment (National Student Clearinghouse Research Center, 2017).

Community Colleges Address Post-COVID Equity Challenges

As employees choose how to reskill and upskill themselves to meet the needs of this post-COVID work environment, one cost effective choice comes from local community colleges (American Association of Community Colleges [AACC], 2021). Community colleges offer certificates and associate's degrees in multiple fields (Skillman, et al., 2012) and community college graduates have immediate access to lucrative careers (US Bureau of Labor Statistics, 2021). Although some community college programs are designed as a stepping stone towards a four-year degree, in many industries, there is significant market value in a two-year degree and related certificates. Associate degrees and certificates provide access to well-paying, expanding career pathways (US Bureau of Labor Statistics, 2021; AACC, 2021) and also get students to work faster.

Of those students enrolled in college, over 41% of undergraduates attend a two-year degree-granting community college (Educationdata.org, 2021). Valued for their connections to four-year institutions and professional careers, community colleges are a vital component in educational and economic mobility (National Student Clearing House, 2017). Community colleges, positioned to serve local communities and regions, are located in every state, with

1,050 community colleges in our nation. Of those, 942 are public, 35 are tribal, and 73 are currently classified as independent (AACC, 2021).

Community colleges are inclusive institutions that welcome and expand educational opportunities for anyone who wants to learn regardless of educational experience, socioeconomic status, or identity (AACC, 2021). Financially, community colleges are much more affordable. The annual average tuition in 2020 for a public district community college is $3,730, where the average annual cost for a public in-state four-year institution is $10,440 (AACC, 2021). Flexible programming aids students who are working or balancing other life responsibilities and offers an alternate educational structure to the traditional full-time, four-year residential college experience (National Student Clearinghouse, 2017). This flexibility is a critical aspect of college access, as the majority of community college students are considered non-traditional, meeting at least one of seven criteria including delayed enrollment, part-time status, full-time worker, financial independence for financial aid purposes, has dependents, is a single parent, and is a recipient of a GED or high school completion certificate (National Center for Educational Statistics [NCES], 2021).

Besides providing open access admissions and low tuition through federal financial aid awards or state-funded tuition-free programs, community colleges are a pathway to job role and career pathway exploration. As the needs of the workplace are quickly changing, so are the opportunities (US Bureau of Labor Statistics, 2021). A student has more flexibility to explore different courses and concentrations in a community college without incurring as much debt or risk investing too much time in a discipline that is not the right fit. According to researchers, "25% of undergraduates are not seeking a certificate or degree" (Educationdata.org, 2021). This data point suggests that the credential may not be as important as the exposure to and

investigation of specific discipline training. Some students enter college to receive discipline specific training to improve employment options or upskill for future promotions in their current career pathway (Hirschy, et al., 2011).

This study seeks to understand how faculty in a two-year community college setting integrate critical thinking into their course teachings. Considering that a quarter of the community college population are not seeking end-credentials but discipline specific exposure for career related success, this research intends to investigate how individual courses deliver the employer-requested combination of technical and thinking skills.

Although the primary focus of this problem of practice research is in transferability of productivity in a work environment, another important personal development aspect exists. Critical thinking underpins the ability to assess personal and professional direction. Because many community college students are engaging in education to improve their existing career pathway choices (Hirschy, et al., 2011), an important secondary benefit to developing critical thinking skills is personal growth in self-awareness, positionality, goal-setting, career development, and personal satisfaction with the future (Arum, et al., 2021). Evaluating how teachers construct and operationalize critical thinking for career and life success could be a direct connection to advancing social justice efforts.

Perspectives of Community College Education for Workforce Preparedness

Across the country, regardless of two-year or four-year institutional designations, the purpose of college is being debated. According to a 2016 PEW Research Center report titled, The State of American Jobs, even though "many college graduates with two- or four-year degrees describe their own experience as having a positive impact on them, just 16% of all Americans think that a four-year degree prepares students very well for a well-paying job in

today's economy" (PEW Research Center, 2016). "There is no consensus regarding the main purpose of college. Roughly a third of adults (35%) say it should be to help individuals grow personally and intellectually, while 50% say it should be to teach job-related skills" (PEW, 2016).

As most community colleges offer part-time programs and flexible scheduling, most students who attend community colleges work while attending school. This intersection of work and learning is a critical perspective to understand as working college students can evaluate how their education and courses directly relate to their work environments and professional goals.

According to the American Association of Community Colleges (AACC), over "62% of full-time students and 72% of part-time students" enrolled in a community college are employed while attending school (AACC, 2021). The AACC also reports that students "reflect positively on their time within a community college." The majority, about 62%, "believe their college degree contributed toward their intellectual growth" (AACC, 2021). However, when asked if their education prepared them for the workforce, there is a divide among students. Those who were "professional and technical certificate earners were most likely to respond positively, with 26% said very well and another 52% somewhat well. In comparison, only 12% of associate-degree earners felt their education prepared them very well and another 42% somewhat well" (AACC, 2021). This difference in perceived preparedness could be attributed to the more extensive, broadly focused general education course loads required to earn an associate's degree.

This data might suggest that students perceive a discipline-specific education to have higher utility value, i.e., more usable and beneficial. As this data can be interpreted in many ways, the direction of this study intends to investigate this perception of how critical thinking

pedagogy is explicitly (Marin & Halpern, 2011) communicated and facilitated within the context of discipline-specific course activities.

Teaching and Learning Critical Thinking Skills

Critical Thinking Learning Context

The PEW Research Center study (2011) *Is College Worth It?* asked over 750 college graduates to reflect on the personal and intellectual benefits of college. Overall, the majority of graduates reported that their college education increased their intellectual growth. However, only half of respondents thought that college prepared them for a career (Pew Research Center, 2011). Graduates of two-year colleges are less likely than those who graduated from four-year colleges to point to the personal and intellectual benefits of college. Among those with an associate degree, 61% say college was very useful in increasing their knowledge and helping them to grow intellectually. Only 57% of two-year graduates say college helped them grow and mature (compared with 69% of four-year graduates). When it comes to preparing students for a job or career, four-year and two-year college graduates make similar assessments about the value of college. Just over half say it was very useful in this regard. (p.55)

Feedback from college graduates supports the value of college as over 85% of respondents report college was a good personal investment (PEW Research Center, 2011). When considering the larger population of respondents ages 18-34, 71% of those who did not earn a degree and 82% of those who graduated college report they think a college education is extremely or very important in helping a young person succeed. (PEW Research Center, 2011).

Respondents from the 2016 PEW study The State of American Jobs report that the best way to get the skills training they need "would be through additional formal education" (p.9). As cited in the PEW report (2016), confusion exists regarding how the Department of Labor's

Occupational Information Network (O*NET) forecasts required degree levels for certain occupations, leaving students to ponder their best choice for formal education. Because community colleges are more accessible and affordable (AACC, 2021), job seekers may find an (re)entry point into formal education through a local community college program.

In addition to learning critical thinking in a formal education environment, students overwhelmingly report that critical thinking skills are learned on the job. (Pew Research Center, 2106). "Among workers who say this skill set is important in their job, 46% say they learned these skills on the job. About one-in-five (19%) say they acquired these skills in their formal education, and a similar share (18%) say they gained these skills through life experience" (p. 11).

Scope and Characteristics of Critical Thinking Development

Defining the critical thinking definition, scope, and application for context for this study is essential to ensure the data collected is directly linked to the study parameters (Glesne, 2001).

Early discussions of critical thinking in education, born through social constructivism, began with John Dewey (Kuhn, 1999). Dewey argued that critical thinking was a process that included self-reflection as a means to derive a solution from a problem (Dewey, 1933; Kuhn, 1999; Roberts, 2003). As cited in Kuhn (1999), Dewey reflects the purpose of education is to foster growth. "The real problem of intellectual education," he said, "is the transformation of more or less casual curiosity and sporadic suggestion into attitudes of alert, cautious, and thorough inquiry" (p.18). Learning how teachers contextualize and enhance thinking processes is the basis of this study.

Most scholars generally agree that critical thinking refers to the "use of cognitive skills or strategies, and through teaching and coaching, students can master critical thinking" (Facione, 1990; Halpern, 2014; Kuhn, 1999). Many contemporary researchers agree that critical thinking

begins with identifying a problem, and some focus more intentionally on the ability to identify

questions worth pursuing and the ability to engage such intellectual pursuits (Facione, 1990;

Kurfiss, 1988; Paul & Elder, 2010). Most literature speaks to two aspects of effective critical

thinking that interweave to create better thinkers; these two aspects are demonstration of specific

skills and positive dispositions, or characteristics of the thinker. (English, 2016; Facione, 1990;

Halpern, 1997; Paul & Elder, 2008).

Facione (1990) published the Delphi report, a Statement of Expert Consensus for

Purposes of Educational Assessment and Instruction, a collective work of over 40 experts in

critical thinking science. These experts agree that critical thinking has two major elements, skill

and disposition. As the framework used for study includes "knowledge of learners and their

characteristics" (Shulman, 1987), both of these aspects will be investigated in the qualitative

inquiry.

Within the research, some scholars further section critical thinking to include the

articulation of logic (Kurfiss, 1988; Kuhn, 1999). Generally, the main aspects of critical thinking

development are defined as argument skills (rhetoric), cognitive process (reasoning and problem

solving), and intellectual development (epistemology and meta-cognition) (Kurfis, 1988). This

additional layer of context helps the study identify relevant themes, should they arise.

The study will engage with at least two faculty members representing each discipline of

Business, IT, and Allied Science. Because the study seeks to understand how faculty

contextualize critical thinking for success within a discipline-specific employment environment,

individual faculty perspectives may inform how particular fields of work view critical thinking

as a professional skill and how individual faculty design this type of teaching and learning within

their program. Justification for further narrowing the focus for this research into a discipline

specific context is supported by expert assertions (Facione, 1990). As reported in the Delphi

Study (1990), Facione published this finding.

> While CT skills themselves transcend specific subjects or disciplines, exercising
>
> them successfully in certain contexts demands domain-specific knowledge, some
>
> of which may concern specific methods and techniques used to make reasonable
>
> judgments in those specific contexts. (p. 7)

Definitions of Critical Thinking Development

Many definitions of critical thinking exist and this variance in understanding terms,

definitions, and context is an obstacle in program implementation (Paul & Elder, 2008; Facione,

1990; Halpern, 1997).

Delphi Collaborative

Headway was made on definition disagreements when Facione (1990) published a

standard definition of critical thinking in the Delphi research project for the American

Philosophical Association. The Delphi Report, a Statement of Expert Consensus for Purposes of

Educational Assessment and Instruction, a collective work of over 40 experts in critical thinking

science, defined critical thinking as "the process of purposeful, self-regulatory judgment. This

process reasoned consideration to evidence, context, conceptualizations, methods, and criteria"

(Facione, 1990).

To further define the cognitive aspect of critical thinking, these experts find CT to

include "cognitive skills in (1) interpretation, (2) analysis, (3) evaluation, (4) inference, (5)

explanation and (6) self-regulation. Each of these six is at the core of CT." (Facione, 1990, p.8).

The experts go on to report guidance for the characteristics of thinker. "A person disposed

towards critical thinking has positive "critical spirit, "a probing inquisitiveness, a keenness of

mind, a zealous dedication to reason, and a hunger or eagerness for reliable information."
(Facione, 1990, p. 11).

Paul and Elder Dispositions

Another definition from Paul and Elder (2008) led to a working model that, in connection with the Shulman (1987) framework for teacher competencies inform this methodology for this study.

Paul and Elder (2008) say that students need to be able to" identify the "parts" of their thinking, and they need to be able to assess their use of these parts of thinking. They define critical thinking as "the art of analyzing and evaluating thinking with a view to improving it". Most helpful, they lay out specific characteristics that link well to student learning outcomes and as a result, serves as an assessment tool.

Characteristics of a Well-Cultivated Critical Thinker

Habitual utilization of the intellectual traits produces a well-cultivated critical thinker who can:

- Raise vital questions and problems, formulating them clearly and precisely;
- Gather and assess relevant information, using abstract ideas to interpret it effectively;
- Come to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- Think open-mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and
- Communicate effectively with others in figuring out solutions to complex problems

Blooms Taxonomy

In addition to the expert's general agreement on how to define critical thinking, there is mass adoption of taxonomy within education to define and develop thinking skills (Anderson, et al., 2001; Bloom, 1956; Krathwohl, 2002; Kurfiss, 1988). Blooms Taxonomy (1956), now

revised (Anderson, et al., 2001) is widely used within pedagogy development to create a common language in order to assess cognitive learning on a variety of levels (Anderson, et al., 2001; Krathwohl, 2002; Kurfiss, 1988). The revision defined more clearly the structure of the cognitive process in not learning what, but learning how (Anderson, et al., 2001). The framework now centers around how to solve problems as learners who build skills through these levels of thinking in increasingly complex ways. The levels of thinking assessment are: Remember, Understand, Apply, Analyze, Evaluate, and Create. The revised taxonomy supports the creation of action-forward, definable student learning outcomes (Anderson, et al., 2001).

Association of American Colleges and Universities (AACU)

The Association of American Colleges and Universities published a definition and an assessment rubric for critical thinking development. The AACU defines critical thinking as "a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion" (Association of American Colleges and Universities [AACU], 2021.

National Association of Colleges and Employers (NACE)

An important collective between academic institutions and employers is the National Association of Colleges and Employers (NACE). NACE defines critical thinking as a competency supporting career readiness (National Association of Colleges and Employers [NACE], 2021). The Career Readiness Initiative began in 2015 to develop a "shared understanding of what is needed to launch and develop a successful career, a common vocabulary by which to discuss needs and expectations, and a basic set of competencies upon which a successful career is launched" (NACE, 2021).

The model, definitions, and rubrics were updated in 2020 as a result of over 300 members providing feedback (NACE, 2021). Sample behaviors were added to expand contextual applications. The updates expand the model's value by providing scenarios that are discipline neutral and can easily be shared with students and employees for development in action.

Critical thinking, according to NACE is the ability to "identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information" (NACE, 2021).

The study seeks to understand how community college faculty define and contextualize critical thinking skills within their discipline. A standardized definition will not be adopted for this research as this is information to be collected and themed through the study.

Carnegie Project on the Educational Doctorate

The Carnegie Project on the Education Doctorate (CPED) guides this Dissertation in Practice (DIP). The goal of the Carnegie Project on the Education Doctorate is to prepare scholarly practitioners who can use signature pedagogy to develop and apply practical knowledge to make a positive difference in their communities and institutions. (Carnegie Project on the Education Doctorate [CPED], 2021).

Specific to the University of Mississippi EdD program, this dissertation is framed around "questions of equity, ethics, and social justice to bring about solutions to complex problems of practice" (CPED, 2021). This dissertation attempts to interweave questions of equity, ethics, and social justice throughout the context and research sections as these concepts serve as a lens with which to understand the implications of this problem of practice.

Preparing students for post-graduation career success is a continual challenge of higher education; however, the landscape of work is evolving so quickly, many employers and experts

say that college graduates are underprepared (Burning Glass Technologies, 2020). The CPED guiding framework suggests that scholarly practitioners develop a signature pedagogy, as defined by Shulman (2005). As reviewed in the CPED framework, signature pedagogy is a set of practices "used to prepare scholarly practitioners for all aspects of their professional work: 'to think, to perform, and to act with integrity' (Shulman, 2005, p.52). Signature pedagogy includes three dimensions, as articulated by Lee Shulman (2005)" (CPED, 2021).

1. Teaching is deliberate, pervasive and persistent. It challenges assumptions, engages in action, and requires ongoing assessment and accountability.

2. Teaching and learning are grounded in theory, research, and in problems of practice. It leads to habits of mind, hand, and heart that can and will be applied to authentic professional settings.

3. Teaching helps students develop a critical and professional stance with a moral and ethical imperative for equity and social justice.

This research intends to discover and promote how faculty in a mid-south community college develop a signature pedagogy around critical thinking for today's modern technology forward workplace. This research occurs at the classroom level to understand how program faculty organize and contextualize critical thinking as a professional in their discipline. As workplaces and the nature of work are changed by transformational technologies, more people will turn to community colleges as an accessible and affordable source for discipline knowledge and career preparation.

In addition to new graduate preparation, community colleges must be able to support the upskilling needs of COVID-displaced workers. Rapid technological improvements in workplaces offer tremendous learning opportunities for employees, however these opportunities will become employment barriers for some. The research discovered in this DIP could be used to forward student career readiness preparation and thereby, their social and economic mobility.

Conceptual Framework

This study seeks to understand how faculty in a two-year community college setting integrate critical thinking (CT) into their course teachings. In order to make meaning of how professional educators translate information, this framework will allow examination of four (of seven) specific aspects of teacher knowledge. The four aspects of Shulman's Knowledge Base of Teaching (1987) used for this study are:

Shulman's Knowledge Base of Teaching (1987) Aspects of Teacher Competencies
1. Knowledge of educational ends, purposes, and values, and their philosophical and historical grounds
2. Pedagogical Content Knowledge (PCK); a special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding
3. Knowledge of learners and their characteristics
4. Curriculum knowledge; with particular grasp of the materials and programs that serve as "tools of the trade" for teachers

This framework is used to organize data through the lens of the faculty perspective. Considering the framework supports recommended professional skills of educators, the research questions and interview questions are organized to reflect how faculty determine ways to teach, specifically, pedagogy for critical thinking development.

Research Methodology

This study seeks to understand how faculty in a two-year community college setting integrate critical thinking (CT) into their course teachings. The following research questions will help deepen understanding of how faculty contextualize and construct experiences that improve critical thinking using the concept of a post-structural research paradigm (Creswell, 2002; Glesne, 2001).

Research Questions

1. How do community college faculty define and establish the context of critical thinking within their discipline?

2. How do community college faculty facilitate instruction that improves the critical thinking of their students?

Study Design

An inquiry should have defined philosophical knowledge claims surrounding the topic, strategies of inquiry as formalized procedure for research and methods that define data collection and analysis (Creswell, 2002; Glesne, 2001). To understand how professional educators perceive their ability to construct transfer of knowledge around critical thinking in the discipline, a basic qualitative study is the most effective process (Creswell, 2002).

This study uses the Shulman (1987) Knowledge Base of Teaching framework. This framework supports the research's purpose and informs how the researcher may make meaning of the findings. The conceptual framework helped translate the qualitative inquiry into the specific context of critical thinking development. This framework guides a translation that removes potential researcher bias.

Table 1.1: Alignment of Conceptual Framework to Qualitative Inquiry

Conceptual Framework Knowledge Base of Teaching (Shulman, 1987)	Qualitative Inquiry Application of Conceptual Framework Professional Educators' Perceptions of Teaching Critical Thinking within the Discipline
Knowledge of educational ends, purposes, and values, and their philosophical and historical grounds	How (if) an instructor considers critical thinking development a main aim of education, and if so, how do they see their role in that development
Pedagogical Content Knowledge (PCK); a special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding	How (if) an instructor's mix of teaching approaches and discipline specific expertise enables them to contextualize the purpose, value, and methods of critical thinking within their

	discipline and how they construct and deliver that knowledge
Knowledge of learners and their characteristics	How (if) an instructor's knowledge of their learner's experiences and characteristics influence the construction of critical thinking knowledge within the discipline
Curriculum knowledge; with particular grasp of the materials and programs that serve as "tools of the trade" for teachers	How (if) an instructor improves activities within their teaching that develop critical thinking within the discipline

Open-ended, semi-structured interview questions and supporting probing questions correspond with each of these four aspects of professional teaching competencies (Appendix 1). The questions support an intentional design that scaffolds gradually (Agee, 2009) to build trust and an open dialog (Hammer & Wildavsky, 1993; Weiss, 1994).

Participants

This study focuses on aspects of teaching critical thinking within the various programs in a community college. The population frame is all faculty, including full-time and adjunct, who teach in divisions of the Allied Health, Business and Technologies, and General Studies programs. The sample population for this study is up to twelve faculty members representing at least three divisions.

Recruiting Process

Participants will receive an initial email introducing the project and the researcher. I am an employee of the community college, so I will make the connection as a colleague, and as an independent researcher interested in the perceptions of teaching critical thinking. The email communication will outline the project scope including at least one recorded, online interview that may last up to 90 minutes. The recording will be produced by MS Teams or Zoom video

platforms. The participant will have access to the video should they wish to download it as the video is published in the shared chat function for both platforms.

The video will be used to verify the accuracy of the transcript. Video files will be deleted once transcripts are verified for accuracy and coded because the video file is not necessary for the study. The video format is being used as a COVID-19 precaution and is a commonly accepted method to engage in professional meetings. The email communication will include confidentiality practices.

Once a participant agrees to engage in the study, I will email them instructions of how to schedule an interview at a convenient time. In the beginning of the formal interview, participants will verbally consent to the process for interview recording, confidentiality, potential risks or costs of participation, and the Institutional Review Board guidance on research participation (Appendix 2). The subjects will be notified of the meeting recording and transcription and may stop participating at any time. The subjects may be asked for an additional meeting up to one hour should the material or topics need clarity and they are willing to meet again.

Data Collection

The transcript will be used to code and theme the responses for research clarity. Although the original transcription may identify participants by name, original transcriptions will be saved and password protected through the University of Mississippi student Google Drive account. I will de-identify transcripts, which I will analyze on a password-protected computer. The subjects' names will be not published.

Equity, Ethics, and Social Justice in Research

Quoting Elizabeth St. Pierre (as cited in Glesne, 2001),

One of the most significant effects of deconstruction is that it foregrounds the idea

that language does not simply point to pre-existing things and ideas but rather

helps to construct them and, by extension, the world as we know it. In other

words, we word the world. The "way it is" is not "natural." We have constructed

the world as it is through language and cultural practice, and we can also

deconstruct and reconstruct it. (p.15)

Our society is wrestling with many unjust social realities, some long unanswered and

some acutely realized as a result of the pandemic. I believe collaborating with others to "seek to

interpret people's constructions of reality and identify uniqueness and patterns in their

perspectives and behaviors" (Glesne, 2001, p.23) is the path towards a more just society. The

qualitative framework is the right fit for my research purpose; I believe that by sharing

perspectives, we as professionals can reflect and improve upon our contributions as educational

leaders. Our shared platform provides an opportunity to intentionally reconstruct a college

environment where all people find a valued voice and a pathway to achieve their dreams. In

modeling this practice within our institution, I hope our students feel empowered to model it and

encourage it within their communities to the benefit of our local, regional, and global society.

Summary of Manuscript 1

In this first manuscript, I have studied a critical thinking skill gap triggered by a

workforce development shift in desired human skills and competencies. Job roles are innovating

at a staggering pace fueled by transformational technologies and the COVID-19 pandemic

exacerbated the speed of these technological innovations. As businesses leveraged technology to

adapt and innovate during the pandemic, future and displaced workers must be able to

demonstrate critical thinking skills to navigate job role changes caused by technology.

Community colleges are well-positioned to equitably mitigate the impact this skills gap has on both future workplace productivity and individuals' ability to enter and progress within the workforce. To know how future employees are professionally prepared for this workplace expectation, this study seeks to understand how faculty in a two-year community college integrate critical thinking into their course teachings.

This research aims to understand the aspects of teaching critical thinking in a two-year degree program as much of the current research on teaching critical thinking refers to four-year institutional settings. In addition, this study seeks to understand how community college faculty develop the skills to teach and assess critical thinking activities within the classroom. Developing a deeper understanding of methods community college faculty use when designing a critical thinking curriculum will help articulate effective processes, challenges, and pedagogical best practices.

Manuscript two will expand the discussion on themes gathered from the data. Manuscript three will connect the research's purpose and how the researcher may make meaning of the findings (Glesne, 2001).

LIST OF REFERENCES

Achieving the Dream (ATD). (n.d.). Achieving the Dream and our network.

https://www.achievingthedream.org/

Agee, J. (2009). Developing qualitative research questions: a reflective process. *International Journal of Qualitative Studies in Education, 22*(4), 431-447. https://doi.org/10.1080/09518390902736512

American Association of Community Colleges (AACC). (2020). Fast facts 2020. https://www.aacc.nche.edu/research-trends/fast-facts/

American Association of Community Colleges (AACC). (n.d.). Data points prepared for the workforce. https://www.aacc.nche.edu/2017/01/11/datapoints-prepared-workforce/

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., ... & Wittrock, M. C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives, abridged edition*. Longman.

Arum, R., & Roska, J. (2011). *Academically adrift: Limited learning on college campuses*. University of Chicago Press.

Arum, R., Eccles, J., Heckhausen, J.,Orona, G., von Keyserlingk, L., Wegemer., C., Wright, C., Yamaguchi-Pedroza, K. (2021). *Ensuring a more equitable future: Assessing student learning and growth within Higher Education*. https://files.eric.ed.gov/fulltext/ED612729.pdf

Baird, A., Satyanarayana, P. (2019). Employer's ratings of importance of skills and competencies college graduates need to get hired. *Evidence from the New England region of USA, 61*(5), 622-634. DOI. 10.1108/ET-07-2018-0250

Bloom, B. S. (1956). Taxonomy of Educational Objectives, Handbook I. *The Cognitive Domain*.
David McKay Co Inc.

Burning Glass Technologies (2020). New data reveals racial inequity poses the biggest threat to
lasting recovery and inclusive future of work. https://www.burning-glass.com/new-data-
reveals-racial-inequity-poses-biggest-threat-lasting-recovery-inclusive-future-work/

Carnegie Project on the Education Doctorate. (2021). The CPED Framework.
https://www.cpedinitiative.org/the-framework

Committee for Economic Development (2021). A US workforce training plan for the post
pandemic economy. https://www.ced.org/solutions-briefs/a-us-workforce-training-plan-
for-the-postpandemic-economy#section4

De Smet, A., Pacthod, D., Relyea, C., Sternfels, B. (2020). Ready, set, go: Reinventing the
organization for speed in the post-COVID-19 era. McKinsey.
https://www.mckinsey.com/business-functions/organization/our-insights/ready-set-go-
reinventing-the-organization-for-speed-in-the-post-covid-19-era

English, A. (2016). The 'in-between' of learning: (Re)valuing the process of learning. In P.
Cunningham, & R. Heilbronn (Eds.), Dewey in our Time: Learning from John Dewey for
Transcultural Practice (pp. 128-143). UCL Institute of Education Press.

Facione, P. A. (1990). Critical thinking: A statement of expert consensus for purposes of
educational assessment and instruction—The Delphi report. California Academic Press.

Flores, K., Matkin, G., Burbach, M., Quinn, C., Harding, H. (2012). Deficient critical thinking
skills among college graduates: Implications for leadership.
https://onlinelibrary.wiley.com/doi/full/10.1111/j.1469-5812.2010.00672.x

Fuller, J. B., Burrowes, J., Raman, M., Restuccia, D., & Young, A. (2014). Bridge the Gap: Rebuilding America's Middle Skills. https://www.hbs.edu/competitiveness/Documents/bridge-the-gap.pdf

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Pearson.

Gross, R. (2017). Comprehensive economic development strategy. Memphis Area Association of Governments. http://maagov.org/wp-content/uploads/2015/11/Part-2-Strategic-Recommendations-Revised.pdf

Hammer, D. & Wildavsky, A. (1993). *The Open-Ended, Semistructured Interview: An (Almost) Operational Guide: On the Organization of Scholarly Work*. DOI:10.4324/9780203794517-5

Halpern, D. F. (2014). *Thought and knowledge: An introduction to critical thinking*. Psychology Press.

Halpern. (1997). Teaching critical thinking for transfer across domains: Disposition, skills, structure training, and metacognitive monitoring. *American Psychologist, 53*(4), 449-455. https://doi.org/10.1037/0003-066X.53.4.449

Hardy, B. L., Logan, T., D. (2020). Racial economic inequality amid the COVID-19 crisis. The Hamilton Project. https://www.brookings.edu/research/racial-economic-inequality-amid-

Heckman, J. J., Kaust, T. (2012). Hard evidence on soft skills. *Journal of Labour Economics, 19* (4), 451-464.

Hirschy, A. S., Bremer, C. D., & Castellano, M. (2011). Career and technical education (CTE) student success in community colleges: A conceptual model. *Community College Review, 39*(3), 296-318. https://doi.org/10.1177/0091552111416349

HRO Partners & Younger Associates. (2016). 2016 Strategic Sector Workforce Analysis. HRO

    Partners. https://hro-

    partners.com/Upload/News/gmacw_strategic_sector_workforce_analysis.pdf

Huber, C., Kuncel, N. (2016). Does college teach critical thinking? A meta-analysis. *Review of*

    Educational Research, 86(2), 431-468. DOI:10.3102/0034654315605917

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy. An overview. *Theory into Practice,*

    41(4), 212-218. https://doi.org/10.1207/s15430421tip4104_2

Kuhn, D. (1999). A Developmental Model of Critical Thinking. *American Educational Research*

    Association. 28(2), 16-25. http://www.jstor.org/stable/1177186 .

Kurfiss, J. G. (1988). *Critical thinking: Theory, research, practice, and possibilities*.

    Washington, D.C: Association for the Study of Higher Education.

Kyllonen, P., C. (2018). Inequality, Education, Workforce Preparedness, and Complex Problem

    Solving. *Journal of Intelligence, 6*(3), 33. https://doi.org/10.3390/jintelligence6030033

Langston, A., Scoggins, M., Walsh, M. (2020). Race and the Work of the Future: Advancing

    Workforce Equity in the United States. National Equity Atlas.

    https://nationalequityatlas.org/research/race-and-the-work-of-the-future

Marin, L., & Halpern, D. (2011). Pedagogy for developing critical thinking in adolescents:

    Explicit instruction produces greatest gains. *Thinking Skills and Creativity, 6(*1), 1-13.

    https://doi.org/10.1016/j.tsc.2010.08.002

National Association of Colleges and Employers. (2020). What is Career Readiness?

    https://www.naceweb.org/career-readiness/competencies/career-readiness-defined/

National Center for Educational Statistics (NCES). (2021). Nontraditional undergraduates:

    Definitions and data. https://nces.ed.gov/pubs/web/97578e.asp

National Governor's Association (2020). Reskilling and recovery network. https://www.nga.org/

National Network of Business and Industry Associations. (2015). Common Employability Skills.

    http://www.nationalnetwork.org/wp-

    content/uploads/2015/03/Common_Employability_Skills-03-30-15.pdf

National Student Clearinghouse. (2017, February 13). The role of community colleges in

    postsecondary success. Community colleges outcomes report.

    https://www.studentclearinghouse.org/nscblog/the-role-of-community-colleges-in-

    postsecondary-success/

Pascarella, E. T., Blaich, C., Martin, G. L., Hanson, J. (2011). How Robust Are the Findings

    of Academically Adrift?, Change: *The Magazine of Higher Learning, 43*(3), 20-24.

    DOI: 10.1080/00091383.2011.568898

Paul, R., & Elder, L. (2008). Critical thinking: The nuts and bolts of education. *The Journal of*

    Optometric Education, 33(3), 88-91.

Paul, R. & Elder, L. (2010). *The Miniature Guide to Critical Thinking Concepts and Tools*.

    Foundation for Critical Thinking Press.

PEW Research Center. (2016). The state of American jobs: How the shifting economic

    landscape is reshaping work and society and affecting the way people think about the

    skills and training they need to get ahead. https://www.pewresearch.org/social-

    trends/2016/10/06/the-state-of-american-jobs/

PEW Research Center. (2011). Is college worth it? College Presidents, public assess value,

    quality and mission of higher education. https://www.pewresearch.org/social-

    trends/2011/05/15/is-college-worth-it/

Powell, G., H. (2020). Current economic issues. Federal Reserve.

    https://www.federalreserve.gov/newsevents/speech/powell20200513a.htm

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard*

    Educational Review, 57(1), 1-23.

Skillman, S., M., Keppel, G., A., Patterson, D., G. & Doescher, M., P. (2012). The contributions

    of community colleges to the education of allied health professionals in rural areas of the

    United States. Rural Health Research Center.

    https://depts.washington.edu/uwrhrc/uploads/RHRC_FR136_Skillman.pdf

Skilton, M. & Hovesepian, F. (2018). The 4th Industrial Revolution: Responding to the Impact

    of Artificial Intelligence on Business. Palgrave. McMillian.

Society of Human Resource Management (2019). The global skills shortage: Bridging the gap

    with education, training, and sourcing. SHRM.org. https://www.shrm.org/about-

    shrm/Documents/SHRM%20State%20of%20Workplace_Bridging%20the%20Talent%20

    Gap.pdf

Tennessee Board of Regents. (2021). Governors drive to 55.

    https://www.tbr.edu/initiatives/governors-drive-55

Weiss, R. (1994). *Learning from Strangers - The Art and Method of Qualitative Interview*

    Studies. The Free Press.

Wilkie, D. (2019). Employers Say Students Aren't Learning Soft Skills in College. SHRM.org.

    https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/employers-

    say-students-arent-learning-soft-skills-in-college.aspx

World Economic Forum. (2019, April). Health and Healthcare in the Fourth Industrial

    Revolution: Global Future Council on the Future of Health and Healthcare 2016-2018.

http://www3.weforum.org/docs/WEF__Shaping_the_Future_of_Health_Council_Report.

pdf

US Bureau of Labor Statistics. (2021). Employment and Earnings Table B-1a.

https://www.bls.gov/web/empsit/ceseeb1a.htm

US Census Bureau. (2021). Quick facts Memphis city Tennessee.

https://www.census.gov/quickfacts/memphiscitytennessee

US Chamber of Commerce Foundation. (2014). Managing the talent pipeline: A new approach to

closing the skills gap. https://www.uschamberfoundation.org/managing-talent-pipeline-0

World Economic Forum. (2019). Health and Healthcare in the Fourth Industrial Revolution

Global Future Council on the Future of Health and Healthcare 2016-

2018. https://www.weforum.org/reports/health-and-healthcare-in-the-fourth-industrial-

revolution-global-future-council-on-the-future-of-health-and-healthcare-2016-2018

MANUSCRIPT 2: DATA OVERVIEW

Introduction to the Problem of Practice: The Critical Thinking Gap

Thought leaders across industry and education agree that employees who can demonstrate critical thinking will be well-positioned to succeed in the workplace (Arum, et al., 2021; Association of American Colleges and Universities, 2020; Flores, et al., 2012; National Association of Colleges and Employers, 2020; Skilton & Hovesepian, 2018; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Wilkie, 2019).

In a local market in the midsouth, employers lament over the lack of an available and qualified workforce; employers are struggling to fill jobs with qualified employees who can grow with the organization. In addition to discipline-specific knowledge, employers seek individuals who thrive in innovation and contribute to the ever-changing culture of work (Gross, 2017; HRO Partners & Younger, 2016).

Investors in the local workforce pipeline development, like workforce training agencies and higher education systems, offer a multitude of degreed and technical skill-credentialling programs. Despite the variety and depth of these offerings, employers continue to speak of a gap in employee work readiness. The essential competency employers seek in addition to technical skills is agile thinking skills (Gross, 2017; HRO Partners & Younger, 2016; Kyllonen, 2018). Employers state that the majority of new recruits can demonstrate specific job role skills; however, they are not demonstrating the agile thinking skills identified as critical to success in roles that require interaction with automated processes and managerial functions. Agile thinking underpins adaptability, self-awareness, and entrepreneurial behaviors. Workforce *readiness* is an evolving term and a complex educational outcome.

As a director of a community college workforce development program in a large southern city, I have an opportunity to work with employers, community agencies, college students, staff,

faculty, and local residents who seek career and job training outside of a formal academic degree program. My work allows perspective building across several stakeholder groups and informs our workforce development programming vision, design, implementation, and assessment.

Each stakeholder group has individual goals and expectations and it is our work as a department to identify, align, and promote opportunities to provide value as a developer of the structure of and contribution to the workforce development pipeline. To service this diverse group, we must discover, understand, and adapt to these different and often competing goals. Interestingly, to engage effectively with these various groups, both individually and collectively, we must demonstrate solutions created by our skills and motivation to think critically.

Employers, for the most part, hope to lead and define workforce expectations as they see themselves as the *end-user* of the effort that educators invest in students (Bughin, et al., 2018; De Smet, et al., 2020; Gross, 2017). Students, as both employees and learners are realizing they have leverage, and employer requirement is not the only perspective that influences the future of workforce engagement. The Great Resignation, defined in 2022 by various experts representing the Society of Human Resources Management (SHRM) as an unprecedented historic wave of employees of all levels quitting their work, has forced employers to reevaluate workplace engagement (Maurer, 2022). As such, employers are paying higher wages, offering more work schedule flexibility, and wellness initiatives. The resignation phenomenon has put employers in a reactionary role which is new and uncomfortable for most. Employers are offering more engagement incentives, but have not shifted their requirements for professional thinking competence.

Our workforce programming supports both employer and employee goals, so we consider a multi-input perspective to contribute toward the effectiveness of this complex relationship. Our

work in diversity, equity, and inclusion has become more focused after the pandemic to aid these employer partners to view our students, both credit and noncredit, not as a commodity, but as a sustained resource of creativity for innovation and continuous improvement investment.

Primarily, we know that as artificial intelligence (AI) becomes more ubiquitous, and machine learning continues to optimize systems and data, the human contribution to our working and social worlds must evolve to be more sophisticated. Labeled as the fourth industrial revolution by the World Economic Forum (2019), employment roles comprised of repetitive tasks and rote analysis will no longer be needed because machines and artificial intelligence will be able to program themselves to perform these functions. Many experts forecast that for every low-skilled occupation a new, more sophisticated role will be invented (Skilton & Hovesepian, 2018). Machines will continue to optimize and perform automated tasks and our employers need people to direct the technology at all levels.

Seen as open systems, known as dynamic and open to influence from the environment (APA Dictionary, n.d.), businesses, organizations, and institutions will need people who can adapt, anticipate, and vision the future to stay relevant. In highest demand are people with skills in problem-solving and user experience systems design. The leadership competency expectation adds the ability to harness and encourage these very skills in others. "Contrary to AI abilities that are only responsive to the data available, humans have the ability to imagine, anticipate, feel, and judge changing situations, which allows them to shift from short-term to long-term concerns" (De Cremer & Kasparov, 2021). According to De Cremer & Kasparov (2021), people will contribute *authentic* intelligence.

Underpinning these authentic intelligence skills of imagination, anticipation, and judgment is proficiency in critical thinking. To solve and contribute, students must be able to

visualize and create. Information literacy, teamwork, data analysis, and the ability to brainstorm possible scenarios to match the "best" course of action to goals are now fundamental expectations at work. They are also fundamental expectations in institutions of higher learning.

Employees must also know how to be culturally responsive and adaptable to change. Our local employer partners ask for these skills explicitly and want to know directly how we, as a mid-south community college, are preparing our students for the future of work. Employers want to partner with us to create workforce pipelines and as we explain our community college *value*, we must be able to articulate how we develop sophisticated thinkers.

Ethics, Equity, and Social Justice

Our workforce expectations and the skills employees need to be successful reflect the technological advances forced by the COVID pandemic. Illustrating the rapid change and evolution of business operations, the post-COVID workforce will have to adjust to "transformations and innovations" which now drive many workforce development initiatives (CED, 2020). "Automation is accelerating in the wake of the pandemic, and it disproportionately places people of color and immigrants at risk of being dislocated from their jobs. Latinx workers face 28 percent greater automation risk than White workers, and Native American and Black workers face 21 and 18 percent more risk, respectively" (Langston, et al., 2020, p.45).

The problem of practice, this identified skill gap in agile thinking for employment readiness, is triggered by a workforce development shift in desired human skills and competencies. Job roles are innovating at a staggering pace fueled by transformational technologies and the COVID-19 pandemic exacerbated the speed of these technological innovations. As businesses leverage technology to adapt and innovate, future and displaced

workers must be able to demonstrate critical thinking skills to navigate job role changes caused by technology (Burning Glass Technologies, 2020).

Community colleges are uniquely positioned to move students toward a degree or technical certificate faster (National Center for Educational Statistics, 2021). Valued for their connections to four-year institutions and professional careers, community colleges are a vital component of educational and economic mobility (AACC, 2021). Community colleges are an affordable pathway to middle-skills careers that pay top dollar and do not require a bachelor's degree (National Student Clearing House, 2017). In addition to offering educational access to various student communities including first-generation, non-traditional, and historically under-represented students, community college builds learning efficacy and affirms career pathways. Students who may not have familiarity with the system of higher education, or believe that this system was designed for others, have a place of belonging in community college.

Unlike four-year and/or residential colleges, community college open-access policies drive different student support services for diverse student populations, and often, student's engagement originates and is fostered mostly in the classroom (Tinto,1987). Therefore, every classroom must be an incubator for personal and professional growth. Understanding how critical thinking is contextualized and taught in the classroom is the focus of this study. We must understand at the most foundational level how classroom practices work to increase critical thinking. We must be able to identify and share strategies that foster an environment of intellectual growth that supports adaptable and creative thinking. Maximizing our ability to provide robust learning in every classroom ethically serves the students who place their trust in us to help them know, discover, and pursue their personal and professional goals. This is social justice and a social contract; our students believe that education is a pathway to a better future

and that our institution knows how to deliver on that promise. This is the foundational concept that tethers us to equity practices, inclusion, and moreover, stewardship of our practices and policies. Faculty and administrators must focus on practices that produce learning and thinking gains (Conrad, et al., 2007). Student learning is advanced when our classrooms are student-centered. Teaching for Learning (Conrad, et al., 2007) states that classrooms with the teacher at the focus are missing an opportunity to focus on the most important outcomes of all. Our classrooms should build the desire to seek and understand new information so our students can make meaning of the world around them. The phrase "you can lead a horse to water but you cannot make them drink" has been used to describe what happens in a teacher-centered classroom. Our role as educators is to help our students get as thirsty as they've ever been. The thirst is the ownership and habit of learning. Independent learning comes from strong thinking processes and habits (Arum, et al., 2021; Facione, 2020).

Research Inquiry

Conceptual Framework

This inquiry asks faculty to describe how they build learning and critical thinking within their courses. In order to make meaning of what they do, and how they do it, the Knowledge Base of Teaching (Shulman, 1987) is the conceptual framework used to examine four (of seven) specific aspects of teacher knowledge: The four aspects of Shulman's Knowledge Base of Teaching are:

1. Knowledge of educational ends, purposes, and values, and their philosophical and historical grounds

2. Pedagogical Content Knowledge (PCK); a special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding

3. Knowledge of learners and their characteristics

4.   Curriculum knowledge; with a particular grasp of the materials and programs that serve as "tools of the trade" for teachers

To develop a clear link for data interpretation, each aspect of Shulman's (1987) model informed the inquiry questions. Each aspect of the model was translated into a specific critical thinking application. Once the model was interpreted in this way, questions that inquired about teacher perspectives of teaching critical thinking progressed (table 1). Interview questions supported each of these four aspects of professional preparation to determine (1) how (if) a teacher considers critical thinking development a main aim of education, and if so, how do they see their role in that development; (2) how (if) their mix of teaching approaches and discipline-specific expertise enables them to contextualize the purpose, value, and methods of critical thinking within their discipline and how they construct that knowledge; (3) how (if) their knowledge of their learner's experiences and characteristics influence the construction of this knowledge; and (4) how (if) they improve activities within their teaching that develop critical thinking.

After creating broad interview questions that supported the conceptual framework application, several probes supported the depth and variety of critical thinking teaching practices to ensure rich discovery of data.

This study seeks to understand how faculty in a two-year community college setting integrate critical thinking (CT) into their course teachings.

Research Questions:

1. How do community college faculty define and establish the context of critical thinking within their discipline?

2. How do community college faculty facilitate instruction that improves the critical thinking of their students?

Interview Questions

1. Tell me about your approach to teaching. What is your teaching philosophy? How does critical thinking fit into your approach to teaching and learning?

2. How do you build critical thinking into your classes?

3. How does your knowledge about individual learners or the types of students coming into your program inform your approaches to teaching critical thinking?

4. How has your approach to teaching or assessing critical thinking stayed the same or changed over time?

Table 2.1: Interview Questions and Probes: Connection to Conceptual Framework

Conceptual Framework Knowledge Base of Teaching (Shulman, 1987)	Qualitative Inquiry Application of the Conceptual Framework Professional Educators' Perceptions of Teaching Critical Thinking within the Discipline	Interview Questions Probes
Knowledge of educational ends, purposes, and values, and their philosophical and historical grounds	How (if) an instructor considers critical thinking development a main aim of education, and if so, how do they see their role in that development	What is your teaching philosophy? 1. How does critical thinking (CT) fit into your approach to teaching and learning? 2. How does your college's aim for developing CT within the student body align (or not) with your department's efforts to increase critical thinking? 3. How does your department/program student learning outcomes (SLO) inform CT development? 4. How does your professional philosophy on CT get expressed to your students? 5. How does your professional philosophy align (or not) within your particular discipline and the professional requirements of that career pathway?

		a. Do other professionals from your field differ or agree with your viewpoints?

Pedagogical Content Knowledge (PCK); a special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding	How (if) an instructor's mix of teaching approaches and discipline specific expertise enables them to contextualize the purpose, value, and methods of critical thinking within their discipline and how they construct and deliver that knowledge	How do you build critical thinking into your classes?
		
		1. How would you define the skills of CT, generally?
		    a. How does that general definition change (if at all) within the context of your discipline?
		2. What types of tactics/strategies do you use to develop CT? (small group work, scenario-based learning, etc.)
		    a. What specific activities do you use to develop CT in your courses?
		3. When you construct these learning opportunities, are those activities specific to CT development, is it explicitly or implicitly taught?
		4. How do those activities relate to your discipline and the thinking required within your professional field (if at all?)
		    a. If explicit, how do the students know you are teaching them to think within the discipline? (what tools, communication? (e.g., syllabus, course outcomes, work-related scenarios, etc.)
		5. Can you give me an example(s) of how a student responded (saw value or not) to an activity or the idea of learning CT? (utility value, attitude towards improved thinking/effort it takes to improve thinking, etc.)
		6. How does your approach change when your modality becomes an online format?

Knowledge of learners and their characteristics	How (if) an instructor's knowledge of their learner's experiences and characteristics influence the	How does your knowledge about individual learners or the types of students coming into your program inform your approaches to teaching CT?

	construction of critical thinking knowledge within the discipline	1. What exposure do your student groups have with CT when they come to you? (How do your students generally demonstrate CT at the beginning of a course?) 2. When students demonstrate (or not) CT skills at the beginning of a course, how does that align with your general expectations of student CT skills? a. How does your expectation of demonstrated CT flex (or not) within your practice of teaching different courses (x different sections, or x different cohorts)? (If not already answered) How do you identify CT skills in your students? Can you think of an example (S) of a recent student you worked with? 3. How did you evaluate students' expertise in higher-order thinking? 4. Describe how teaching in this community college affects your approach to CT learning? Would your approach change in another school, and if so, why and how?
Curriculum knowledge; with particular grasp of the materials and programs that serve as "tools of the trade" for teachers	How (if) an instructor improves activities within their teaching that develop critical thinking within the discipline	How has your approach to teaching or assessing critical thinking stayed the same or changed over time? 1. What are the most significant barriers you've encountered to successfully facilitating critical thinking within a course? 2. How do you measure student development in CT so you can make pedagogical improvements (if any)? 3. How do you improve your understanding of learners and their characteristics? 4. How does the institution support your development to improve understanding of developing CT skills in your students? 5. What do you need (wish was offered to you) to improve teaching or share the load of teaching CT?

		6. What hinders you from improving your efforts in your classroom, specifically?

In addition to the above interview questions, the interview concluded with an open-ended question designed to capture additional participant perceptions and thinking. Generally phrased, "As you thought about our scheduled interview and about critical thinking and teaching practices, was there anything you thought I might ask that I did not, or anything we discussed that needs more attention?" This ending question allowed for further discussion on topics that may not have been investigated fully and allowed for the study participants to engage in the topic in their own approach. Themes for discussion are presented in later sections.

Terminology Alignment

Aligning terms and definitions is of particular importance for this research inquiry. For qualitative analysis, defining the critical thinking definition, scope, and application for context is essential to ensure the data is directly linked to the study parameters (Glesne, 2001).

Critical thinking has many interpretations and applications in the literature (Paul & Elder, 2008; Facione, 1990; Halpern; 1997), so considering definitions and contextual application becomes important in grounding the study to make meaning of the data. Many definitions of critical thinking exist and this variance in understanding terms, definitions, and context has been reported as an obstacle in program implementation (Paul & Elder, 2008; Facione, 1990; Halpern; 1997).

First, there is the idea that critical thinking demonstration is related to the characteristics and disposition of the person. "A person disposed towards critical thinking has positive critical spirit, a probing inquisitiveness, a keenness of mind, a zealous dedication to reason, and a hunger

or eagerness for reliable information." (Facione, 1990, p. 11). As cited in Kuhn (1999), John Dewey, states the purpose of education is to foster growth. "The real problem of intellectual education," Dewey says, "is the transformation of more or less casual curiosity and sporadic suggestion into attitudes of alert, cautious, and thorough inquiry" (p.18).

Most scholars generally agree that critical thinking refers to the "use of cognitive skills or strategies, and through teaching and coaching, students can master critical thinking" (Facione, 1990; Halpern, 1997; Kuhn, 1999). Many contemporary researchers agree that critical thinking begins with identifying a problem, and some focus more intentionally on the ability to identify questions worth pursuing and the ability to engage in such intellectual pursuits (Facione, 1990; Kurfiss, 1988; Paul & Elder, 2010).

Most literature speaks to these two aspects of effective critical thinking that interweave to create better thinkers; these two aspects are the demonstration of specific skills and positive dispositions, or characteristics of the thinker. (English, 2016; Facione, 1990; Halpern, 1997; Paul & Elder, 2008).

Critical Thinking Defined for this Study. For the interpretation of this study, critical thinking is authentically defined as containing two separate and distinct aspects: (1) a positive disposition towards intentional thinking processes (I manage my learning process on purpose) and (2) specific demonstrable skills of information evaluation, interpretation, and communication (I create and communicate an informed point of view).

This definition intentionally excludes a person's thinking ability as this study did not gather data on student cognitive capabilities. This study did not intend to search for differing faculty perceptions based on general education versus discipline-specific contexts, however, a

clear theme developed and as such, the participants were defined using those descriptors (Table 2, pg.79).

<div align="center">**Data Presentation**</div>

Methodology Data Collection Improvements

The data collected from different sections of the interview informs categories for consideration and analysis. Although the process of theming was iterative as I coded each interview, I was conscience not to bend the data to any preconceived ideas of what might be stated. I did consider editing some of my prompts to clarify the findings, but as scholars advise (Saldana, 2013), the questions themselves should stand on their own and not be influenced by the first few interviews. I was challenged in this as I initially thought I was lacking the data I wanted. However, after a few interviews, I realized that I did not need to improve the questions, I needed to improve my objective listening in order to ensure the inquiry produced insight against my research questions. Once I decided that theming and categorization of the data should be organic (and come later), I was able to facilitate the inquiry scope with a more focused purpose.

Each of the five interview questions was broad and had several correlated prompts to help facilitate the conversation. The participants had different conversational and interaction styles which made following a sequence of questions difficult. Initially, I took notes and asked probing questions based on predetermined topics and additional insights offered by the interviewee. In hindsight, taking notes was an attempt to record key phrases for later consideration but I was unable to keep up with the breadth and depth of the topic examination I wanted. Fortunately, I was able to realize this early in the research process and my approach became more efficient and effective. After the third interview, I realized that a checklist of *insight into topics* was all I should be keeping up with as I needed to lean on my existing resources of the recorded interview

and transcript for specific details and quotes. I began to look at the recording time count on my Zoom platform and log the time in the interview where insight was particularly critical to capture. With this improved approach, I was able to listen more intently and ensure that the research questions were directly answered through my interview questions and probes.

The semi-structured approach allowed for significant flexibility in conversation and accountability to the purpose of the study. The topic of critical thinking is broad with several interpretations and contexts, so ensuring the aim of the study was clear in all the questions became very important. Overall, the implementation fidelity was good because the checklist of topics guided me to know when I should ask follow-up questions and when to discover different aspects of the bigger research question.

Data Overview

Choosing a research methodology should consider philosophies surrounding knowledge claims, the researcher's experiences, and the audience who will review the research (Creswell, 2002). This study aimed to further understand how faculty contextualize and define critical thinking within classroom environments across a community college's academic divisions. Qualitative research is founded upon ontology, what the researcher has set to examine, and epistemology philosophies as primary considerations when designing a research study (Glesne, 2001). Of course, because this study examines faculty perspective on thinking and knowledge gains, this is particularly important to note. An essential element in developing critical thinking is meta-cognition. We must think critically about what we are thinking about (Paul & Elder, 2008). In researching critical thinking, the knowledge of knowledge transfer, or meta-cognition of epistemology, can best be explored through qualitative research.

To understand the faculty perspective (thinking) on how to transfer knowledge, this study is based on a qualitative research design. As the problem of practice highlights a perceived gap in college students' professional readiness for the workplace, the research hopes to explore the faculty dispositions and preparedness to develop the sophisticated thinking skills that employers seek.

Five members in all three academic divisions of the college were individually selected for participation. The original list of 15 target participants was determined based on expertise in curricular design and student success. Research suggests that the researcher should know the organizational and situational context that helps create understanding as well as considering whom to interview first, appropriate venues, scheduling constraints, and methods of contact and recording that establish a level of professional organization and trust (Hammer & Wildavsky, 1993; Weiss, 1994). Between semesters, while the faculty were not required to work, the Academy for Teaching and Learning offered optional professional development sessions and many of the identified faculty members participated in these professional development workshops as attendees or session facilitators. This potential participant group was chosen for their explicit interest in student retention and persistence and their willingness to share their time to further the academic community's shared learning and development. In addition to considering the dispositions of particular faculty, selection criteria included the level of curricular influence (e.g., course content ownership) and full-time employment status.

An email was sent to the target participants explaining the researcher's job role within the institution, and the study purpose, and concluded with a request to participate in a 75-minute interview that would be scheduled at the convenience of the faculty member. All of the interviews were held over a Zoom video conference which was recorded and transcribed. The

transcription and video files were saved in the researcher's Zoom account and backed up on the student cloud drive. All video and transcription files were deleted once the theme and coding process was complete. Summaries of themes and researcher notes were kept until the project was narrated sufficiently.

Deleting the participant data is part of the research protocol to maintain anonymity and encourage participation. Maintaining anonymity was particularly helpful in encouraging transparency in data collection. One faculty member allowed transcription and audio recording but was not willing to be on camera for the interview. Several faculty members asked how their answers would be published. I reviewed the formal conditions of the research approach and I assured them that I would delete the recordings and aggregate the general findings.

Although nine of the original sixteen target faculty were non-responsive, I was able to recruit suitable replacements to ensure the depth of inquiry could lead to validated findings. The faculty who did participate were very willing to give as much time as we needed to the project. They all offered their time should follow-up be needed. Approximately ten minutes prior to the scheduled end time, the participants were asked if they would like to continue to discuss strategies and perspectives on critical thinking or conclude the 75-minute interview on time. All of the participants chose to continue our discussion until a natural conclusion was reached. Each participant was willing to take the time to answer thoughtfully and as the interviews concluded, many expressed an appreciation of the activity. As one of the questions asked how the institution could assist in carrying the responsibility for student readiness for critical thinking development, several participants expressed an interest in exploring that more, and two of them expressed a desire to elevate their stated recommendations to bring about improvement.

Data Limitations

The process began with an email to 15 target faculty members across the Humanities, Business, and Allied Health divisions of the college. The original research intention was to interview at least four faculty members from each of the three academic areas. Over the course of 45 days, I amended the list several times to remove non-responsive or unavailable faculty and replace them with faculty from the same division intending to achieve information saturation within a specific discipline. In the end, data was captured for nine faculty members who represent the Humanities and Business divisions. Allied Health representation was not included as only one of six invitees participated and themes were not able to be validated.

The study participants were reporting on their own perceptions of teaching critical thinking within their current job role as full-time faculty members in a community college. There will inevitably be some bias in self-reporting (Saldana, 2013) and although at first, some questions were not answered directly, the prompt questions helped encourage more depth of answers. Because the inquiry centered around personal perceptions and experiences, many examples led to tangential issues that the participant found relevant. Although noting what participants related as relevant was helpful in some cases, most often those interview stories did not directly relate to the data I was seeking. In hindsight, I could have controlled the scope of the data collection process more efficiently in the first few interviews and focused our time to understand more specifics about classroom activities and curricular decision-making.

The conceptual framework used to guide this study is the Knowledge Base of Teaching (Shulman, 1987). The framework outlines attributes of effective teacher competence. My interview questions directly correlated to aspects of teacher competence; therefore, I validated the conceptual framework to the participant before I inquired about their perceptions of what makes a teacher competent to teach. I missed an opportunity to ask about dispositions

surrounding teacher competence so I could compare that data to the model structure. Asking the participants about teacher competence may have also given me insight into what community college faculty perceive to be effective educator attributes, generally, and within a specific discipline. In that context, it may have been helpful to ask different probing or follow-up questions on why the perceptions of the participant varied or did not vary, to the model. Also, it may have been helpful to collect syllabi or observe a class discussion for direct assessment of course activities and critical thinking context building as the participants were self-assessing their practices and there may have been biased recollections of what they do versus what is actually happening in the classroom. These insights can be used to improve the methodology for future research.

I wrote to these faculty members as a colleague who works on the non-credit, Workforce Development side of the institution. I relayed that I was also a teacher who interacts with our credit students across several programs. I communicated my interest in learning how faculty design and communicate critical thinking exchanges within their area and added that this was a perspective-building inquiry, one where all thoughts and ideas would be welcome. After some communication with both the first two faculty members who agreed in theory to participate, I realized that their follow-up questions centered around concerns over the process and how (and where) data would be published. At the onset of the recruitment phase, I did not perceive any balance of power concerns since I was writing as an interested colleague and expressed my intention to publish this information only to my Dissertation in Practice Committee and the University of Mississippi as required. As I later learned, my unfamiliar role in the non-credit department caused some concern. I was not viewed as part of the larger faculty group and my department was unfamiliar to most. This siloed relationship was indeed an initial research

barrier. Explored in later sections, hesitation by faculty to participate in pedagogical inquiry may also relate to the perceived lack of professional educator skills.

Setting an appropriate process of interaction through the recruiting phase of this study proved to be critical in gaining participant support. This initial positive interaction created a safe space for information and data collection. "A common mistake in interviewing is to ask questions about a topic before promoting a level of trust that allows respondents to be open and expansive" (Glesne, 2001, p. 102). In the end, our email exchanges gave us the opportunity to learn more about each other's work and those early communications were critical in creating a trusting relationship that allowed for transparency and vulnerability in our interview. The qualitative approach to research design explores the interaction between the researcher and research participants; therefore, consideration of how research participants might be affected by the research process or intervention is critical in qualitative research applications (Glesne, 2001).

Data Use

As stated previously, all the participants were willing to give this interview as much time as we needed to naturally conclude the discussion, and some interviews lasted for almost two hours. Long conversations do not necessarily equate to quality conversations, however, the data collected through these interviews was useful. Most, if not all, participants were able to provide deep insight into the opportunities and constraints of being a community college teacher. The study's research questions centered around faculty perspectives on contextualizing, teaching, and assessing critical thinking skills. All of the participants were able to provide helpful examples of how they define and use learning strategies to develop student thinking. Many of the participants were able to discuss teaching philosophy and critical thinking as a thread in their courses, albeit implicit. There was a general consensus that learning more about critical thinking would improve

their ability to teach their students. This was especially true for the faculty who work within the general education humanities division, as they generally characterized their student population as underprepared learners. The faculty in the discipline-specific divisions seemed the evaluate the student readiness as adequate. When inquiring about the difference in student readiness, one faculty shared that by the time students make it to specialized coursework within a discipline, they have demonstrated the ability to self-manage and have the skills to persist. The perception is that the remaining students, the "others" (Mac, Dom, Arlo, Rosie) must not yet have been able to master these things.

Faculty across all divisions had similar thoughts on the teaching challenges during the COVID-19 pandemic. Many pointed to specific student achievement gaps between the under-resourced and well-resourced students. They spoke of the trust and safe spaces that encourage students to learn and the difficulty in creating those spaces online. They spoke of a large portion of students attempting academic coursework through their phones, living in crowded spaces, and a general inability to manage assignment requirements.

As the faculty met the challenge to move courses into an online learning environment, many spoke of the institutional directive to work with the distance learning division as the expert in online course design and how that affected their ability to meet students' readiness levels, curricular autonomy, and workload. An opportunity exists to further examine distance learning practices, the rationale for asking the distance learning team to lead curricular decisions, and lessons learned both in the classroom and at the institutional level as a result of the COVID-19 migration to and from e-learning modalities.

In addition to reporting on the role of a community college teacher, participants were able to provide insight on institutional and departmental tensions that interfere with teaching and

assessing critical thinking. Although some of this data is not the target of the inquiry, several related themes were repeated with enough frequency to be discussed in later sections.

Finally, the study participants shared insight on what might be helpful when recommending strategies and policies for student thinking development and academic success. Considering the complexity and vastness of critical thinking as a general concept, the study participants contributed solid ideas that may help program designers and academic leaders maximize learning and thinking practices for our students. These suggestions will be themed and reported in later sections.

Data Interpretation

The interviews were structured with five specific interview questions and several prompts aided in understanding perceptions across multiple aspects of teacher competence as a main component in developing critical thinking in others. In most cases, when clarification of a question was requested, I would respond with a question similar to "what did you think the question was asking?" Once the participant provided how they would clarify the question, I posed questions that aligned with their thought organization to provide space for explanations in their own words (Saldana, 2013). Considering each participant was given the space to interpret and discuss these interview topics, many similar themes emerged.

This study centers around teaching practices that develop critical thinking. As each one of the participants is currently a teacher, they all had a deep sense of individual perspectives on teaching and learning and what works for them. Interestingly, this individual mixture of perceptions, philosophy, experience, and pedagogical approaches is one of the aspects identified within my conceptual framework as an essential teacher competence (Shulman, 1987). This particular mix of professional knowledge, and how we construct that information delivery for a

learner is Pedagogical Content Knowledge (PCK), (Shulman, 1987). Shulman (1987) defines PCK as "that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (pg. 8). Perhaps unbeknownst to the study participants, they were demonstrating competence while we were discussing other aspects of this conceptual model.

Critical thinking as a competency has many contexts, applications, and recommended frameworks (Elder & Paul, 2008; Facione, 1990; Halpern; 1997). In many instances, as we were discussing critical thinking, study participants shared how discussing it *explicitly* made them reflect more deeply on their thinking. This phenomenon is supported by the literature (Kuhn, 1999; Kurfiss, 1988; Marin & Halpern, 2011) and is repeatedly offered as a best practice in critical thinking development (Arum, et al., 2021; Facione, 1990; Halpern, 1997). Consistent with these theories, several participants offered immediate insight toward the study's explicit goal of discussing critical thinking and their ability to improve their own teaching practice. In contrast to this observation, however, all participants gave ample evidence that their critical thinking teaching practices are implicit and some purposefully do not connect critical thinking, as a term or concept to their students. This *implicit* teaching approach is further explored in later sections.

Interpreting data has many possible approaches. For this dissertation, the perceptions of teaching critical thinking in a community college classroom setting will be the primary context. The Shulman (1987) Knowledge Base of Teaching framework determined the broad themes and subsequent evaluation of the data. Shulman (1987) posits seven aspects of teacher competence. For this study, four of those aspects are predetermined selections used for synthesis and data interpretation.

Presentation of the Findings

In total, nine faculty members in a large urban mid-south community college participated in this study. The original study methodology targeted at least four perspectives representing each main division in the college which are Humanities, Science, & Math, Allied Health, and Business & Technologies. Because of the challenge of getting enough data to validate themes within the Allied Health division, this study will focus primarily on the two remaining divisions. However, common themes exist throughout all of the interviews and as such, all participants are included in the profile table and descriptions. As published in the study protocol, all names, divisions, and faculty titles and roles will be unspecified. The table categories reflect key indicators that have relevance to data findings.

The profile table was constructed using the data findings as they relate to the conceptual framework of teacher competence (Shulman, 1987). Faculty knowledge of learners and their characteristics was affected by the professional responsibilities and teaching load/student course enrollment of each faculty, so those various roles are noted. The required academic teaching load for this community college is five courses both in the Fall and Spring of an academic year. Any overloads for teaching additional courses (two are allowable with some constraints) or offloads for other responsibilities are noted. Leadership, program project, and curricular responsibilities are noted because of themes that illustrate academic direction setting, content/curricular control, and textbook/instructor resource authority as they relate to critical thinking development at a program and course level. Pedagogical content knowledge (PCK) themes were noted as similar

among faculty teaching in a general education role versus a concentration-specific role, so those

academic role distinctions were used to describe each participant.

Table 2.2: Participant Profile Table

Participant Identification	Academic Area (Concentration Specific or General Education)	Courses\Taught per Semester	Estimated student roster/ enrollment per semester	Additional Responsibilities (Leadership*, Curriculum**, Program Projects***)
Arlo	Concentration Specific	3 (1 required, 2 overloads)	50-75 students	Leadership Curriculum Program Projects
Rosie	Concentration Specific	5 (3 required, 2 overloads)	80-100	Curriculum Program Projects
Maggie	General Education	5 (3 required, 2 overloads)	100-125	Curriculum Program Projects
Eduardo	General Education	7 (5 required, 2 overloads)	120-140	Program Projects
Dom	General Education	5 (3 required, 2 overloads)	100-125	Leadership Curriculum
Patrick	General Education	7 (5 required, 2 overloads)	100-125	Curriculum
Larue	General Education	5 (5 required)	100-125	Curriculum Program Projects
Mac	Concentration Specific	3 (3 required)	50-75	Leadership Curriculum Program Projects
Alice	Concentration Specific	4 (4 required)	60-80	Curriculum Program Projects

* **Leadership** is defined as a formal responsibility to guide and develop a program, department, or area within the college.
Curriculum is defined as formal responsibilities in leading, recommending, designing, and/or selecting curricular resources and improvements.
*** **Program projects** are defined as participating (or leading) various institutional initiatives. (e.g., external review committees for other institutions; student services or clubs; employer /community partner programs; mentor programs)

Themes

To build insight into how faculty in a community college contextualize and teach critical thinking, each interview question relates to one of four aspects of the conceptual framework of teacher competence, The Knowledge Base of Teaching (Shulman, 1987). The sections are further clarified to reflect on development practices, and recommendations for academic effectiveness in meeting stakeholder expectations, both internal and external. The following sections and subsections reflect developing critical thinking through insight that links to an educator's understanding of (1) the main aims of education, (2) pedagogical content knowledge (PCK), (3) learner knowledge and characteristics, and (4) curriculum knowledge including assessment practices for curriculum development.

Data and themes are presented for faculty perceptions on how critical thinking is (or is not) a central aim of education, how learner characteristics inform (or do not) pedagogy, and finally, how faculty approach curriculum and pedagogical assessment of critical thinking for student development. Additionally, although the Knowledge Base of Teaching (Shulman, 1987) framework for teacher competence is used to make meaning of the data, the aim of the study is not to evaluate specific faculty competence but to identify themes that can be helpful in understanding how faculty approach teaching critical thinking in the classroom context.

 How (if) an instructor considers critical thinking development a main aim of education, and if so, how do they see their role in that development?

The study interpretation begins with the contextualization of critical thinking skills. The aspects of building context vary across disciplines and as this topic is so vast and nuanced, four aspects, in particular, will be compared. Those aspects help aggregate data regarding (1) how faculty define critical thinking, (2) how faculty apply their definition in their courses, (3) the

explicit communication (or not) of the nature of critical thinking within the course, and (4) how critical thinking is contextualized within a professional context, if at all.

Defining Critical Thinking. The literature is clear that definition variances prevent programs from flourishing (English, 2016; Facione, 1990; Halpern, 1997; Paul & Elder, 2008). For purposes of this study, definition variances did not seem to greatly influence perceptions on teaching critical thinking among participants. However, many of the participants only defined one aspect of critical thinking in the outset of the interview. Most participants agreed that critical thinking begins with solving a problem. Only one participant spoke of the ability to identify questions worth pursuing and the curiosity behavior to engage in such intellectual pursuits. In further sections, evidence that faculty value the habit of thinking development is discussed. Many of the faculty spoke of the lack of evidence of self-led learning but did not connect this aspect of thinking behavior to their working definition of critical thinking.

This research inquiry evaluates the differences (if any) in critical thinking as defined by the study participants. In this manuscript, the researcher is not comparing nor suggesting a common definition. Each participant defined critical thinking in their own words, so there is no specific agreement in wording among participants.

All the participants were asked to define the term critical thinking as though they were defining it to a student. None seemed to have a formulated response when asked, so as the participants attempted to define critical thinking, the definition expanded and consolidated as they verbally processed the task. Most of the responses included the application of knowledge statements, such as "discern differences and similarities" (Arlo), "ability to rationalize independently based on facts and circumstances; to think and apply towards solutions" (Rosie), "being able to take your knowledge and apply it, and being able to think through the answers and

finding the correct answer or the best answer" (Patrick), "be able to use their tools to try to find an answer and know whether or not it's the correct answer" (Alice), "the ability to analyze and dissect and interpret; apply your education in determining whether this information is correct" (Dom), and "ability to challenge a piece of information and research information to analyze something, evaluate" (Larue). Arlo further defined critical thinking as what is not. "It's not defining anything, it's a higher level of intellectual thinking."

In addition to generally agreeing that critical thinking moves past memorization of data toward evaluation of data, most of the participants offered definitions that described the context or purpose of critical thinking. Most assertions were practical in nature. The faculty spoke of being able to know the correct answer and transferring terminology into solving processes. In addition to most faculty speaking about how critical thinking solves problems, Maggie says critical thinking is "trying to understand someone else's point of view to gain empathy." She continues, "using your beliefs and your values to think a little deeper into a concept, into an idea, so that you can maybe see another person's point of view whether you agree with it or not" (Maggie). Some faculty spoke of critical thinking as essential to effective communication, in general. "Critical thinking is an inherent part of communication" (Dom). One faculty participant contextualized critical thinking as a process that could or could not be academic in nature. He says that critical thinking is a "method of thinking that provides insight to what is defeating you from moving on to what your plans are" (Eduardo).

Alice spoke of the willingness or behavior of thinking expressly in this context. Alice did not hesitate in her definition. She teaches in a discipline-specific area and was very clear to state how use uses her discipline's reasoning methodology as the center of her teachings, assignments, and study guides. Interestingly, Alice is the only participant who began her career as a teacher in

K-12, not as an industry expert. Alice says, "I would define (critical thinking) as being able to observe something and have enough curiosity to ask a question." Alice maintained that without the curiosity to discover, students may have marginal learning gains through highly-guided scenarios, but may struggle to apply knowledge in new contexts.

Many other faculty did speak of student curiosity, but none used that term as part of a critical thinking definition; they did, however, speak to observing a lack of it. The context of curiosity was described with phrases like unwillingness to participate, completing the minimum level of work, and limited interaction. *Building curiosity* is not mentioned, but building activities that create student engagement is mentioned multiple times in each interview. Building activities that peaked student interest is an evident practice from all study participants, however, the participants seemed to highlight course activity engagement as a demonstration of achievement. They were not explicitly connecting activities as an opportunity to build curiosity as a behavior necessary for critical thinking development.

An opportunity exists to examine building learning behaviors as the primary aim of education through thoughtful use of activities. If activity teaching leads the focus of education, then student engagement and demonstration will remain limited to the context in which it lives, and the thinking skill cannot be more broadly transferred. Perhaps, this begins to explain the gap in thinking development as seen by the study participants in the K-12 to college environment transfer (Arlo, Rosie, Alice, Maggie, Eduardo, Patrick, Dom, Larue, Mac), and research that explores employers who see a gap in thinking readiness from the college to workplace transfer (Society of Human Resource Management, 2019).

Contextualizing Critical Thinking. Most faculty consistently spoke of critical thinking as a foundation of success. They spoke of critical thinking as a necessary skill for living a good

life and being a successful student. Rosie ties it to the "why they are in college" and says most of

the students are in college to get a job. So, she connects critical thinking to what she thinks

students want. Which she says are sometimes very different goals. "An 18-year-old and 30-year-

old are very different thinkers" (Rosie).

Encouraging students to complete the work required to be successful in college, some

faculty try to link degree completion to work and financial stability. "They all care about money"

(Rosie). A common denominator many faculty report using to capture their students' attention is

how the skills in the course are directly linked to their future success. Many study participants

linked career success to the ability to express oneself. Some link the degree as the credential that

pays more money over time.

Several faculty described scenarios where they spoke of personal and professional goal

setting and then linked being prepared for class as an example of reaching that goal. These

faculty also speak of those students who need an extraordinary amount of individual coaching

and motivation to persist. The faculty describe the tension between wanting to coach these

students and managing a workload that does not accommodate this type of teacher-student

relationship. One faculty shared that teaching to the middle is the best that they can do,

generally. The top will succeed without them, anyway, was their sentiment. The bottom needed

too much foundational support to be successful. Those faculty who spoke of this teaching reality

were apologetic about this scenario but did not know how else to manage the conundrum.

Faculty also spoke of online learning as catering to the "top". They agreed that online

modalities favored the independent learner. Although these students are able to move through the

course material and complete activities, some faculty do not think that learning is occurring. For

those faculty who are concerned about learning gains versus activity completion, they say that

many students who complete courses are not able to transfer this knowledge to the next level of course instruction. And, the students who are taking time to learn and apply, are doing so at the expense of learning all the course material in time. Grades suffer in the short term, but faculty state that this latter scenario builds a better learner, later. So, the tension in any given course is do we cultivate better expression and thinking habits now and slow topic knowledge interaction, or do we keep the pace with topic knowledge to push them through to completion on time? Perhaps there is a solution that addresses both of these scenarios in balance.

When Patrick spoke of how he contextualized critical thinking in his courses, he framed it as "(Our leadership) are afraid of losing the students every day to Wendy's or Starbucks and they want us to do what they call intrusive advising. That means that I stay on top of them." Patrick went on to say that in his faculty role, he advises students on how to think about their life circumstances and the choices they make about what gets their attention. This was a major theme that resonated with other study participants. Several faculty members talked about helping students think through their actions. Some spoke of students who would come to class, but not participate. Rosie says, "College classes should naturally help our students to think for themselves." She would challenge students to understand why they made the effort to physically be there, but not mentally or emotionally engage in the activity of learning. This speaks directly to an opportunity to build conditions which nurture curiosity to develop self-led inquiry skills. There is also an opportunity to further understand the student point of view regarding attendance as an achievement goal versus academic preparation as an independent learning mindset.

General Education vs. Concentration-specific Context. The general education faculty did not make much mention of critical thinking in a professional context, mostly critical thinking is contextualized in an academic success context. The main focus of the general education

courses was information literacy. This group concentrated on developing the ability to research and aggregate information from credible sources, and the ability to construct an argument that reflects that research and subsequent points of view.

The faculty representing the concentration-specific areas perceived contextualizing critical thinking skills differently. "First, (students) think through an answer to a test; know the terminology. Then, we teach to think, research, and write in the discipline. We use highly guided templates to know how to apply facts to scenarios. This prepares students to evaluate information" (Arlo). Arlo continues, "Our advantage is (we are) a skill-based program. We are an applied degree. We help you build the skills you need to get the job."

Alice says, "You have to learn a brand-new language in this discipline. I feel it's really important for students to get the wrong answer (to learn). Learning something from the very beginning is a journey in what it looks like to be a professional in this field." Alice keeps students progressing through the program by connecting the courses students should take if this is the job role they are interested in pursuing.

Learning Outcomes: Implicit vs. Explicit. Each faculty member at some point in the interview expressed a careful beginning to the work that gradually reveals to the student their own ability of thinking competence. The faculty speak of creating students' psychological safety throughout their interviews. They spoke of the need to create a space where making mistakes was part of the process of learning. Faculty correlate mistake-making to low classroom engagement, course withdrawals, and poor academic achievement. Mostly, the participants do not talk about student learning outcomes. They feel that setting concrete expectations on day one is intellectually threatening to many of their students. "This is a general education class. I'm not trying, especially at the beginning, to be punitive and to get students to drop out right away

because, you know, I really believe that the key to a more successful future is getting an education. And if you come in too heavy-handed at the beginning of a class, then I think that we are doing more harm than good" (Dom).

When probing about how students know that they are engaged in thinking exercises, or perhaps how activity design is intentionally asking for the application of knowledge (synthesize, evaluate, create) (Krathwohl, 2002) all the study participants agree that Bloom's taxonomy provides appropriate *verbs* for describing a student learning process or outcome. Bloom's taxonomy centers around how to solve problems by thinking in increasingly complex ways and is often used in the creation of definable student learning outcomes (Krathwohl, 2002).

None of the participants explicitly connect Blooms (Anderson, et al., 2001) as part of their pedagogy and activity design with their students. "I don't have a specific thing where I say, okay, we're doing critical thinking today" (Dom). Some faculty note that confronting students with educational jargon intimidates students and perceive Bloom's taxonomy as part of this jargon.

All participants stated that course-level student learning outcomes are contextualized through Bloom's taxonomy and are published on their syllabi for every course. Including these outcomes is a standard requirement as directed and taught by the institution's learning academy. According to Maggie, "it has to be (on the syllabus) because we have to use Bloom's taxonomy verbs for our student learning outcomes." Interestingly, faculty note that many students do not know how to follow the syllabus. "No one reads the syllabus" (Rosie).

Notably, not one of the faculty explicitly relates their teaching methodology to their students, nor discusses Bloom's taxonomy (Krathwohl, 2002) as a guide in higher-order thinking development outside of the published course-level student learning outcomes (SLO). When

asked how students would know that thinking development, as a habit, skill, or for professional problem-solving, was the main aim of the activity, Maggie says, "I do use Bloom's words for my student learning outcomes, but other than that, (critical thinking) is not on the syllabus explicitly. They don't realize it, but they get it almost every week. I'm always telling them you need to think about this; you need to think more. You need to think a little deeper about this. You need to unpack this a little further." According to Dom, "Critical thinking was actually a chapter of our former text" but now it is not. The new course text, created as an open educational resource (OER) by a faculty-led committee, omits critical thinking as an explicit topic. Dom continues to say that "stating we are learning when we are trying to learn" is redundant and would never say, "Hey, you're going to learn critical thinking in this class", because, "to me, it's just an inherent part" (Dom). Patrick adds,

> "I don't think I've ever said critical thinking. I guess, only on that first day do I really mention the word critical. It's in the book and it's in the syllabus. I say, for example, when you guys are (completing assignments), you're not just restating what Wikipedia has to say about something. You are looking up different locations for information and you're putting those together in a flow. You're trying to find your three main points or your (supporting) points, but that information has to connect to your main point. That's the critical thinking I'm looking for".

Patrick, as a general education faculty, is looking for a thesis and evidence that supports the curation and creation of that point of view. Rosie, as a concentration-specific faculty member, added that explicitly discussing critical thinking is "it's somewhat insulting because we should be thinking critically every day of our lives." Dom says that critical thinking is probably

not explicitly taught in any course. They "use Blooms words (like) apply, discern, etc. on the syllabus. So that is how students know they are building their thinking, (and) intelligence."

Learning Outcomes: Course Level vs. Program/Division Level. The faculty participants did not report a known relation of course-level outcomes to divisional or program-level outcomes. **"**I don't think there's anything formal. I think they leave that all up to us, each faculty member individually in the department" (Maggie). Rosie was unsure. "I would argue that every program probably has critical thinking embedded into the program, therefore I feel like it's certain that it's stated. I don't focus on the program outcomes. I focus on the course outcomes" (Rosie).

Several discipline-specific faculty agree that critical thinking is not explicitly expressed in the courses they teach, but do agree that the words that come from Bloom's taxonomy (Anderson, et al., 2001; Bloom, 1956) are represented in the syllabus. Evaluate and interpret were words used often to describe how a student interacts with the course topics and assignments. "In our topic, we are very intentional to confirm that our student learning outcomes use those verbs to convey some level of critical thinking function" (Arlo).

Arlo, a disciple specific faculty with administrative leadership responsibilities, stated that most of course outcomes are designed to assess student knowledge specific to a topical area. These courses, however, are not connected to each other using similar SLO's. "There are no guiding student learning outcomes that unite the program. There are course-level outcomes that are published as SLOs. Those have to use Bloom's taxonomy." Arlo did state that program-level outcomes exist, but they do not measure student learning.

Learning Outcomes: Context Building. In order to understand how the students would know that thinking is a skill that can be improved or the main aim of the process of learning, the theme of *interaction* with the coursework activities came up often.

Even though many faculty participants are reluctant to explicitly discuss thinking processes and behaviors, they are very intentional in building thinking competence into coursework and pedagogy. Many faculty reveal that they are building student thinking through thoughtfully engineered course-related activities. They reason that, by way of interacting with the material, the students naturally build their thinking competence. According to Maggie, she does not explicitly frame expression or thinking critically to her students until the end of the semester. She waits until the 11th week of classes when the assignments ask students to prepare an oral presentation and then refers to the work they have completed so far as *evidence* that they can do the work. "I moved it to the end of the semester because they were better able to express themselves and more comfortable expressing themselves to me." (Maggie). Alice considers "how can I deliver this information in a way that they are not scared, frightened, or threatened by (it). Once they're not scared of the information anymore, then let's try to start developing critical thinking."

Teaching Resources: Most study participants spoke of the key role that the course textbook plays in building thinking skills. When asked what makes a text the best choice, Rosie says the main selection of texts in her area are the price and the instructional resources. Each area employs many adjuncts, and according to Maggie, "it's important for them to have resources, ideas, and examples to stimulate their effective teaching." Many of the faculty spoke of the Learning Management System (LMS) integration of learning materials and supplemental information as a key aspect of an effective text. This best text choice connects to the sheer

number of courses and students that each faculty teaches in any given semester. When 100-plus students need to have a quiz or test grades calculated, supplemental text materials that work with the LMS to automatically perform this function are valuable time savers. Unfortunately, the types of quizzes and tests that can be automated are typically multiple-choice and word bank type assessments which are not ideal practices for developing application thinking skills. These types of assessments are great for building foundational terminology knowledge and memorization of concepts or theories.

Mac says, "We use the textbook to provide a framework for solutions and once you apply the framework you and I can have two different answers but still be correct." This is especially important as students interpret frameworks within the discipline. In the world of work, there are always many possible correct ways to proceed in solving problems. Rosie adds, "Anything that I can use that has interactive activities and provides a plan of attack for the material" is her choice.

As to who gets to decide what text to use, it varies in each area. But all areas have a course owner. Rosie states, "I teach one particular course but I have no say in that text." She goes on to illustrate a very interesting aspect of decision-making in a community college setting. The authority and availability of credentialed faculty matters in textbook decisions.

> In another course, I am the ultimate decision-maker because there are only two of us who are full-time with the credentials to teach that particular course. Based on our accreditation standard requirements, there are only two of us who have official credentials. There are plenty of faculty who are capable of teaching it, but they do not have the formal education to qualify. If we have enough credentialed teachers, we can form a committee to make those decisions. (If we do not have enough), then the group will trust our decisions and go with it."

Maggie looks for texts that are written for the community college setting. Recently, Maggie led a course redesign with a few colleagues and had sole responsibility to choose the textbook. "This book was designed specifically for community college students which is why I chose it. I really like that" (Maggie).

Textbooks play a critical role in developing critical thinking across programs. Textbook resources can offset the burden of grading and textbooks with ample teacher resources in the form of digital quizzes and tests are used often. Uploaded into the LMS, technology assists with the ease of grade calculation and provides instant feedback to students. These are certainly benefits and should be used as much as possible. However, if this method is the primary feedback model, the students are practicing remembering course terminology, and not the higher cognition application of "synthesize, evaluate, create" (Krathwohl, 2002) to know how to apply knowledge across various contexts. In addition, the textbook can be a limitation, if the text only addresses terms and concepts. There must be supplemental learning resources that also build the habit of thinking, as this is an essential part of higher order thinking application.

How (if) an instructor's knowledge of their learner's experiences and characteristics influence the construction of critical thinking knowledge within the discipline. To develop critical thinking through learner insight, two themes emerged. These themes that influenced how a community college faculty member develops critical thinking skills in their students are student experiences and learner preparedness.

Student Experiences. In this open-access institution, the students can represent a wide spectrum of experience and readiness. The faculty participants stated that the variety of student backgrounds and experiences in any given class was a teaching challenge. Dom reports,

Many students are not ready. They either come from high schools where the

curriculum was very poor and a lot of them got a GED. It may have been a while

since they finished their high school degree. As opposed to some really great

students, I do have several really fantastic students this semester. And then I have

lots of students who speak English as a second language. Some of them are really

ready. Some of them are not. You know, that's what you get with an open

education institution.

"Students don't always see that they have something of value to add because they are not

connecting the scenario to their experiences" (Rosie). Rosie says that she thinks that adult

learners have a much easier time connecting concepts to their experiences "because they have

more of them."

Faculty speak to the many responsibilities that community college students manage.

Often in the interviews, faculty would relate the student challenge of finding time to do

homework when families need attention and they are working students. "Most students don't do

the work for every class. I have about four (out of 24) students this week who did the reading on

their own" (Dom). An opportunity for future research here is to understand why students are not

completing their work assignments. Are they curious about the learning and simply have time

scarcity? Is this a prioritization challenge because life requires our energy in other areas or

because the work of schooling and learning seems somehow less useful?

The insight as to where the students were previously educated, individual student

financial resources, and the variety of social or academic experiences they have had were the

primary contextual factors that affected the faculty's perception of student preparedness and

critical thinking skills. "We have a huge range of skills and abilities in one class. Especially over

the summer. We have students who are taking classes from other large regional university systems to knock out some required GenEd coursework" (Eduardo). Eduardo also speaks to the psychological stressors that some students talk about. He reports that different experiences make it challenging to treat the whole class the same. It is not an equitable practice.

> "They're individuals, but the course says, this is what they all have to do. I have to figure out how to bend to those rules and that's where (I) have frustrations, because many of them have children, and they're working two jobs. Some of them are still at home with their parents and they got everything paid for, and they have money waiting on them when they finish these two years. So, we have this economic, social, behavioral, and psychological variance."

Eduardo speaks to the role of the community college teacher having to be an educator and counselor and coach for life, not just college. He has often been pulled into the students' personal lives. This is especially true for courses held over video conferencing. He says, "So, when they are in the online environment in their home life or wherever they are going and you ask them to speak or contribute in class, in the background what you hear is a TV, people talking, and the children running."

Over the course of the interviews, students were categorized as younger and older, resourced and under-resourced, and from county schools and city schools. This study aims to understand various faculty perceptions. Notably, each faculty is providing these perceptions through their own professional positionality, and perhaps, bias. As a result of this, the researcher acknowledges that the study approach did not consider the participants' identities outside of academic divisional representation.

Purposeful participant criteria, in addition to an academic job role, would ensure that themes of the student experience are represented from a variety of different perspectives which accurately reflect the student population and experience. Out of nine participants, three were male. Two participants self-identified as Black or African American. This school is recognized as a Predominantly Black Institution, with over 64% of students identifying as Black or African American and the vast majority of students are female (US Department of Education, 2021). Consideration should have been given to the diversity of the faculty body relative to the student demographics when selecting research participants. This aspect of the methodology can improve by ensuring the study participants reflect the student diversity in race and gender. Consideration of accurately knowing (and relating to) the student body is of particular importance considering one of the aspects of the framework for teacher competence, relates specifically to knowing the characteristics of the learner (Shulman, 1987). More information may have been available regarding student decision making rationale if the study participants were involved in additional, co-curricular program projects with the students.

Overall, the faculty surveyed did not speak about students individually. Most of the perceptions were shared as generalizations. A study protocol enhancement may be to ask more specific questions about individual students and then ask if data represents a typical student versus gathering broad generalizations about student experiences.

Student Preparedness. Many of the faculty expressed concern over the readiness of their students to be independent thinkers and learners. Arlo, teaching in a concentration-specific area, says, "Most students are underprepared for learning. They are taught to get the grade. The student background requires me to build skills that I should not have to do. In terms of subject matter knowledge, I know I have to teach that, but foundational skills like making an argument

or researching (the) information that is outside of their opinion, are lacking." Patrick, teaching in a general education division, also sees a lack of academic preparation. "First of all, they can't write sentences, to begin with. Then (I am supposed to) teach them how to not write the sentence the way they normally would (for different writing applications). I was like, forget everything you know, and they're like, already there" (Patrick). Eduardo adds, "Our courses are heavily designed with best practices for those students who meet the minimum qualifications for reading comprehension. But our students are not at the average, they're below the average; about 60% of them are."

Rosie connects this general lack of learning independence to the problem of practice, directly. "Knowing that high schools are teaching to test, (it is) a lot of rote thinking. We say we are integrating critical thinking implicitly into the "fabric" of college but it is absolutely a gap because they have not been taught to think. They are so conditioned to find the answer. So, applying the knowledge is really challenging for many students."

There seemed to be a large gap between what faculty thought students would be able to do and what students demonstrated. Many faculty discussed the idea that students live in a multiple-choice, memorization world prior to coming to college, and thinking and evaluating are skills that were not adequately developed. According to Mac, the question to ask students is, "Do we understand why we're doing this thing, or are we just doing it?" Mac further elaborates, "Students get frustrated and will throw away certain knowledge just to memorize stuff." These faculty members relay that they are discouraged when students do well on the first round of quizzes and tests on certain processes and terminology, only to realize that the students cannot transfer the knowledge on later assignments because they memorized it for one scenario,

specifically. "Once you change up the situation, (students) get stuck there, like, well, that's not what I learned. Like I only learned this thing, and can't translate it to something else" (Mac).

According to Arlo, younger thinkers have not developed thinking applications in high school. "They are told what to do and they go do it. They want to know, what do I have to do to get an A? Is this busywork? Why should I care? They are always doing a cost-benefit analysis of their effort" (Arlo). On the other hand, Arlo says this about his older students. "Older students have more experience to bring. More perspectives. I don't have to explain the importance of why we are doing something. They will try to learn and do it on their own." In other words, curiosity already exists.

This perspective illustrates the missing component of independent learning for some students. It seems that some students bring a curiosity to learning, and therefore are more eager to engage in the material on purpose. When this curiosity is missing, the faculty is required to do more to engage students in the process of learning.

A question to further explore is regarding preparation and learning *confidence*. Low confidence levels and fear of looking inadequate keep many students from engaging in the course material. The curiosity gap may be fueled by low self-efficacy. This is a particularly important issue to explore, as almost every study participant stated that engaging in the material, or working through the process of activity completion, is how they develop higher-order thinking skills. So, if student development is contingent on interacting in class and doing the coursework, but the student is fearful or uneasy in doing such, we have a learning development stale-mate.

Further reducing academic self-confidence is receiving poor grades on assignments. Patrick tries to build confidence by going back to something they can do well. Many faculty spoke of the exceptional student thinking development over the course of the semester, but they

had to build foundational skills at the expense of practicing the more complex application of skills. "I found that I was basically having to bring it down more and more, and focusing more on developing outlines and developing sentences. I hate to say it but I feel like we were struggling just to teach the basic concepts of how to organize thoughts" (Patrick). Many faculty reported that this lacking ability in self-expression reduces student grades in their courses. "They are leaving points on the table," Rosie says. Activities that gauge the expression of ideas are part of the grade achievement formula. "You can be really good at taking quizzes and tests but if you don't contribute to this other thing… Then you're leaving a significant part of the success formula on the table" (Rosie).

All of the participants, representing both the concentration-specific and general education domains, discussed student hesitation to engage in class material. "I don't know if they've gotten burned in the past or they don't have the confidence or no one's ever asked them before… that would be a psychology professor's area. It takes several weeks to get students to open up and know that it is a safe classroom and that (incorrect) answers do not produce ridicule" (Rosie). Eduardo says that he sees students physically coming to class, but not doing the work while they are there. He tries to speak to them about what they get out of the action of coming (achieve attendance credit) when connections to learning are most important (build curiosity). "If you're drinking a glass (of something) it is the same amount of energy to drink. But what you get out of a glass of milk is different from a glass of something else. When you come to class and do nothing, you should be asking (yourself) why are you coming to class?" (Eduardo).

How (if) an instructor improves activities within their teaching that develop critical thinking within the discipline. To determine how faculty in a community college develop critical thinking through assessment insight, two themes emerged. Understanding the process,

92

both opportunities and constraints, of curriculum innovation, and construction of appropriate course activities.

Curricular improvements. Almost all of the study participants reported intentionally making course improvements, however, the modality affected the faculty's ability to do this consistently. Reporting on in-person and hybrid courses (defined as content living in the LMS, and students using half of the weekly course time to work independently and half of the weekly course time to meet in person), faculty state that they can make activity improvements from semester to semester. The course design overall is "owned" (Mac, Arlo) by one leading faculty, and any changes to course design or topic inclusion/exclusion can only be made by the faculty who is responsible for the master copy located in the LMS (Arlo, Dom, Rosie, Patrick). This master copy is cloned for every selection each semester, and the roster of students is uploaded to that particular course copy. Administratively, this keeps the courses in any given semester consistent. It does, however, publish predetermined activities and leaves little room for student characteristic and readiness adaptability. So, those activities need to be guided, but not prescribed.

Most faculty spoke of the option to suggest changes to the course activities, syllabus or course master copy (or update if they are the owner) each semester. No one spoke of assessment committees or standardization of course assessment over time. Although this action research approach allows for dynamic responsiveness to student engagement, changing the activities frequently assumes that under (or exceptional) performance on an assignment is generalizable to other cohorts of students.

The faculty do agree when a course is redesigned, and there are many courses in that category as a result of going online during the COVID pandemic, they are able to assess course

content for a better product. This assessment and redesign applies to hybrid and in-person courses, only. All online courses are managed and owned by the Distance Education division.

Curricular creativity seems reduced as a result of the online standardization of general education and concentration-specific courses. Dom speaks to the curricular freedom that faculty should have. "We will have certain things built into the course that we have to facilitate. We are given these modules that I present in the master copy. This is not my requirement, but it's just a requirement system-wide that the (digital) course materials are standard. It's just that it's difficult to facilitate because of these ownership rules." Faculty state that they are not involved in the course creation even though they "own" the same course that is delivered in person or in a hybrid offering. Faculty state that they are asking for authority to adjust some activities and course requirements, but this is an ongoing conversation. A common set of student learning outcomes may be able to unite internal curricular improvements across platforms and create consistent messaging and expectations for students.

Building Critical Thinking through Activities. All but one study participant became a college faculty member through their qualifications as a professional in the field and used that professional background to create course activities that develop course learning outcomes. Those who teach in discipline-specific contexts linked critical thinking to future professional expectations. They use structured activities that link current events within the industry to textbook learning of conceptual frameworks. There seems to be an abundance of creative activities across all programs that use current events in news, media, and entertainment to connect theoretical learning to practical applications (Alice, Arlo, Rosie, Eduardo, Larue).

Most faculty report that building critical thinking is accomplished through activity and course assignment interaction. The study participants build learning activities that relate to

current events, historical events, and personal experiences in order to create an emotional or cognitive connection to concepts and topics for deeper reflection. This is an experiential learning practice recommended by researchers as a way to increase thinking (Halpern, 1997; Shulman, 1987). Many faculty use small group learning or peer exposure to build differences in thinking perspectives. "Backgrounds matter and (student) point of view is important. I create activities that are brainstorming in nature so students can all participate. As a group, I have them vote on the top three (ideas produced) and they can all build on each other's thinking" (Rosie). When speaking about class conversations, students report they "learned so much; they are taken back by what they hear the others say about what they learn" (Eduardo).

Learning how to collaborate with others is a competency that is valued by employers and produces increased occupational outcomes (Fernandez & Liu, 2019). In addition to practicing working in teams, Eduardo changes the team roles in certain assignments mid-way through. "I switch their roles. From the leader, speaker, researcher, scribe, and then a floater. And I take their research and I give it to another group, and I take another group paper, and I give it to another group to present their work. So, I introduce adaptive behavior management. I show them (that) I see you all can still present a really detailed research presentation on the fly, even with constructive obstacles" (Eduardo).

Case studies and scenarios are used most often in concentration-specific courses. Arlo says they "use templates to get to the correct application of concepts or terms." Relating the conceptual and theoretical frameworks can be challenging, but with all the current social unrest, comes many examples to use. "I'm really looking forward to teaching (next semester) because there is so much going on in the world that we can connect to our learning that it will not be hard to find real-world examples of why this concept or theory happens in real life" (Rosie).

In a concentration-specific area, Alice reports that technology must be part of the learning design. Short videos are key to connecting the content to learner interest. "Video format, at least for those that are using the video technology as their main communication line, is a very familiar way of learning" (Alice).

Alice is also working on a project with peers that connects students to the discipline in its entirety, not just individually managed courses. After connecting with her peers to form a digital learning space for the division, she realized that there is a lot of overlap in teaching foundational skills within the program. She began by asking, "What are the 5 main things that each (area representation) wants to relay?" (Alice.) The team aggregates course learning information by comparing SLOs and textbook topics. As the group of faculty worked together, they realized there are opportunities to reinforce key terminology, concepts, and decision-making models directly through this portal. So, the team is working on creating activities in this portal that are game-oriented and align with the new aggregated program learning outcomes. Many of the activities are directed by short videos that were created when all the content was moved online at the beginning of the pandemic. "I have videos that are like 30 minutes so it might be too long. I think shorter snippets would do better" (Alice). But, creating and publishing this extra learning resource is more work. She laments over the difficulty in reusing content. "It's really hard to go back through and re-edit everything. I'm trying to find the time for that and that's something that I've been wanting to do anyway" (Alice). Alice continues, "(This wrap up would be great if I could just cut those (videos) down to 15 minutes at most."

Assessing thinking. According to Rosie, "It's really hard to grade somebody on critical thinking skills because I don't really see what's going on behind the scenes in their minds. (Our students) are not the greatest in showing their own skills. So, there's a lack of being able to

demonstrate communication." Rosie, a concentration-specific faculty member, assesses student learning through how well a student completed the assignment for topic understanding.

On the other hand, Patrick. a general education faculty member, works to develop a process for thinking organization and writing improvement. He works a long revision process for feedback as the best way to assess student development from draft to draft. He states this is the best way to provide specific assignment direction and thinking improvement. "I typically give you know, second, third, fourth, fifth six chances to most of my students. (As opposed to) other teachers are like 'they're adults, if they're not doing it, they're not going to do it, and that's their funeral'."

Rosie thinks that showing thinking processes as part of tests and papers is critical, so she offers grade credit for providing solid rationale even if the end answer is incorrect. "When students demonstrate rational reasoning and thinking, I give them a lot of credit on tests because sometimes the answer isn't correct but (the thinking), that's the beginning to figuring out the correct answer." Mac agrees, "When a student submits something and it is not what I want it to be, I try to provide them an example of what I wanted it to be and provide a comparable contrast to see where they went off track. But they still get some credit for trying." This practice builds confidence in risk taking and incentivizes curiosity.

Arlo provides extensive feedback on what should have been the answer to show students the error and then how to correct the thinking for next time. "(I) circle typos. I write in correct information and tell them how to fix what they did wrong. There is no grade for corrections, though. In foundation courses, students need to remember the feedback because we are moving on. In higher level courses, we repeat activities that students can improve upon" (Arlo).

Eduardo breaks his assessment strategy into three parts. The first part is all practice and the official grades are for topic and group interaction. He is building the competence of inquiry in this phase. Low stakes practice with the "don't have to get it right, right now" (Eduardo) instructional approach allows students to experiment and adapt approaches without fear of grade achievement. This initial culture of experimentation bolsters learning confidence and efficacy. Eduardo designs the second section around several low-stakes assignments that formalize student expression. The final section is a major project that integrates all the students have practiced. He reports excellent individual relationships and passing rates for his sections. He is very clear that he considers the course context and how to scaffold learning across a variety of course offerings. Eduardo designs on purpose to ensure equity. This three-section approach appears in all of his courses, regardless of modality or timeframe. "Students have so many different interaction circumstances. Some are over the summer every day for an hour. Some are 45 minutes two times a week for four months" (Eduardo). So, across all delivery options, he builds and assesses student learning gains from each of the three sections to illustrate student accomplishments. Interestingly, Eduardo did not speak of a lack of student engagement or self-directed learning.

Facilitating evidence of self-directed learning growth is a key finding of this study. Many faculty members stated that they were motivated to engage individual students, but several spoke towards that challenge of doing so. Mac says, "It's hard to evaluate if (students) are not understanding or they don't care." Either way, Mac encourages students to use the resources they need to be successful. Mac continues, "I am one of those resources and I expect you to reach out to me when you don't understand the concept or what is expected." This is how Mac eventually determines if the student does care to make the effort to reach out on questions.

Eduardo builds engagement in scenario building for his students to test their thinking. He says, "I want you to tell me which one of these characters you think you are. So, I want to get them away from the situation that's bogged them down and see what they really want and how they see themselves in the scenario that's based on what they just told me" (Eduardo). Eduardo mentors his students to separate themselves from the problem and think more objectively. He asks the students to characterize the problem, define the issues, and recommend solutions. In effect, he is transferring the learning and thinking accountability back to the student.

Student self-assessment represents an important element in determining learning gains. When asked about how students provide feedback on their learning and development interaction in a course, Dom says, "that is a challenge, especially when grades have not been given." Dom is not always convinced that students are honest on their end-of-course feedback forms. "So, let's assume that there is a good portion of merit in what they're saying that it's not all just 'I hope you give me a good grade because I gave you a good review'. Dom continues, "I don't say to myself consciously has this student's higher-order thinking ability improved. I assume that (it) will if they have completed those activities in the class."

Each faculty member in this research project stated that students can provide feedback on the course administration, instruction, and value through end-of-course surveys. None of the faculty mentioned how (or if) that data is integrated into formative assessment processes.

Rubric use. Most faculty state that using rubrics are great for grading general assignment compliance like following assignment directions and audience presentation, but not for specific concepts. In this area specifically, there is no agreement on rubric value. According to Rosie, rubrics are used more in some classes than others. "I cannot have a rubric for every problem, that is not real."

Dom says that rubrics help set expectations and direction for development. "You know, and that's a question I ask them at the end (of the course). Was the learning clear? Was what I expected clear to you?" Dom continues, "I don't say anything specifically about the rubric, but a lot of them mention that, yes, everything had a great rubric." Arlo uses templates that practice repetition in thinking approach. Along with published rubrics, he reports that students know exactly what is expected to be successful" (Arlo). Then it's about effort. (Arlo, Rosie, Larue, Maggie).

Rubrics are a great tool to establish a shared understanding of the work. "I think it's helpful, from an equity standpoint", says Larue. Alice speaks of rubrics as an important tool to hold educators accountable to equitable assessment. "With the rubric it's a more equitable practice because you have certain guidelines and standards, guiding you, not just guiding students" (Alice).

Unfortunately, rubrics as a tool for the trade do not carry over in the LMS. This is an administrative barrier to using this tool. The LMS rubric duplication function omission is a disadvantage for adjunct faculty, in particular, who may not be comfortable creating or using rubrics. The concentration-specific faculty (Rosie, Alice, Mac, and Arlo) share their rubrics with their teams. Maggie has a standard rubric but she does not think it is as good as it should be. Many of the general education faculty assess similar skills like following assignment parameters and communication skills as evidence of critical thinking. They publish their rubrics and share predetermined, defined levels of student skill demonstration so the faculty can assess student work consistently.

Barriers to Teaching Critical Thinking Development. Faculty have reported that teaching critical thinking, e.g., rational thinking toward solving a problem, is not an issue, per se.

Mostly, they comment on not having time to construct good activities and ensure that those activities are producing the learning they want. These faculty members engage with a high volume of students in addition to leading service and curricular activities.

Faculty state that a primary method to increase student engagement with the course material is to relate concepts to current events and pop culture. One primary barrier repeated in almost all of the interviews was the challenge of moving students outside of the role of self-appointed expert on a topic with which they have personal familiarity. The faculty participants reported that many students believe their opinions as "correct" (Arlo) and "validated" (Alice) because they've seen information in their social media news feeds. "Unfortunately, our students seem to react to things (as facts) that they've read without really critically thinking about them" (Eduardo). Mac agrees and states, "A lot of my students think they are the expert if they are familiar with a topic. I ask them to research what the actual experts say and compare it to what the student thinks."

Some of the faculty observe students falling victim to a cultural echo chamber. "We do talk some about the echo chamber, how most (of our students) live unknowingly in an echo chamber where they're hearing the things that they want to hear because of the (social media) algorithms" (Larue). The findings of this study suggest that all faculty are challenged by this cultural phenomenon and Dom recommends that we ask students to openly step outside of their echo chamber to seek different sources and interpret that information for a balance of views and opinions. Notably, this is an explicit instruction about critical thinking. And perhaps, an opportunity to weave a more transparent context building in classroom activity planning.

Faculty participants also spoke of the tight-knit communities we have in the local area. Many generations of the family live in close proximity, or perhaps at the same residence. Faculty

report that students often speak of family or neighborhood relationships as a source of topic knowledge. Some of the faculty point to this insulated environment as a barrier to seeing situations from other peoples' perspectives. They want college to be that place where differences in thinking can be shared and students construct their future on purpose. Maggie says, "If you just listen to people who (sic) you grew up with, and people in your close social circles, you're not exposed to other ways of looking at the world." This is a good argument for increasing experiential learning out in communities and in work-based learning environments. If students are bringing narrow views into the classroom, and their classmates are not offering many different perspectives, then programming could offer opportunities for information exchange with people and professionals from diverse backgrounds. Building perspective outside of a student's typical experience is a best practice recommended by experts. Hartung (2022) references a study performed by Ackerman (1996) which proved that "curiosity and exploration leads to learning and accumulating knowledge" (Hartung, 2022, pg.2).

Technology has an intentional place in education; however, technology must be deployed in a way that adds to the learning process, not detract from it. Some faculty spoke of technology as a shield that students can hide behind. Blacked out screens on hybrid courses and poor discussion posts were mentioned several times. Discussion posts were mentioned often as a tool that should be good for building self-reflection and discussion with peers, but they are often mismanaged and students are not engaging in democratic exchanges. "Discussion boards aren't enough," says Larue. The faculty, both in general education and concentration-specific disciplines suggested that students would be at a deficit in a professional role if they did not practice talking to each other and solving problems together. The proliferation of online courses has made this expectation more difficult to execute. As educational course offerings will remain

hybrid and online for some time if not forever, further research on how faculty can use technology to increase student ability to present an informed point of view as a professional in the field would be an important aspect to include.

Was there anything you thought I might ask that I did not, or anything we discussed that needs more attention? In addition to the above interview questions, the interview concluded with an open-ended question designed to capture additional participant perceptions and thinking. Generally phrased, "As you thought about our scheduled interview and about critical thinking and teaching practices, was there anything you thought I might ask that I did not, or anything we discussed that needs more attention?" Many participants stated that they had no preconceived notions about what to expect, however, most offered additional comments.

Professional Development. Mostly, the faculty spoke of wanting (and in some cases, needing) professional development on developing thinking in the classroom. Most, if not all, suggested that I connect with the Teaching and Learning Academy at the college which would be a credible source in offering this type of teacher development. Best practices from other successful schools are championed by the Teaching and Learning Academy, according to the faculty surveyed. This internal resource for pedagogical and professional support often brings in professionals from other institutions that provide rich insight for teaching and learning high-impact, best practices. Every faculty participant spoke highly of the Teaching and Learning Academy. This division is highly regarded and several study participants suggested that a critical thinking course could be offered through that department for future professional development.

There is a general sense of collegiality among the faculty. They were complimentary of their coworkers and agreed that the faculty generally handled teaching responsibilities professionally. As each of these participants was a willing volunteer for this research project,

they demonstrated this professional commitment to student and institutional success by way of sharing their insights and perceptions.

   Institutional support. When asked how the institution could support them, many of the study participants did not know how to address the question. Overall, it appeared as though they thought they must handle student learning and development from week one to the end of the semester as a unique, independent responsibility. This research showed that most faculty do not know of or use program student learning outcomes to tie courses together at this institution. Learning outcomes are published and managed at the course-level only, and as such, most faculty had not considered a systems approach that could share the student development load. Many participants were willing to consider a larger institutional initiative that could assist in student learning preparation and development, and some offered concrete ideas at the time of the interview. An opportunity for further inquiry could explore how institutional or program level outcomes assist (or do not assist) faculty in contextualizing and developing critical thinking skills, generally, and specifically within a discipline. Notably, program student learning outcomes do exist and are published through the state board of regents.

   The most relevant finding here, however is the lack institutional effort behind building curiosity. There are no guiding outcomes that support learning as a process or a behavior across the student trajectory. Notably, many of the participants spoke highly of institutional support divisions assisting in the effort to get students to learn. "The tutoring center tries to be responsive, there's an opportunity to request supplemental instructors", says Dom. Even though study participants described a plethora of available resources, such as motivated coworkers, supplemental instruction, and library resources, each of these areas were described as separate, disparate entities, not as multiple touchpoints designed to do the same thing at different times.

There are opportunities to directly promote institutional outcomes to students. Rosie thought that there could be an effort in student orientation and success courses regarding knowing how to read and use a syllabus as a "playbook" for course completion. Other faculty agreed that orientation and success courses are the place for students to learn how to use the LMS (discussion boards, submitting assignments to the correct location, etc.) and the institution's digital cloud systems. Many students are unaware of how to use cloud applications to store their work. So, if the phone didn't work or the computer crashed, all the work is gone. Support for basic digital literacy was mentioned several times. In addition to these courses housing course organization and technical literacy, faculty suggested that these courses could teach critical thinking skills about managing deadlines and academic productivity.

Faculty also suggested that the institution could help students think for themselves by publishing org charts and service missions that would enhance students' ability to use institutional resources. One faculty mentioned that the students are unaware of the departments in student affairs and sees this as a barrier to developing better success thinking. Several participants spoke of referring students for supplemental instruction or counseling; they spoke of the difficulty of managing the entire process for the student. Faculty expressed the burden of helping the student think through their situation, establish a plan, and manage the process of solving for assistance with other administrative areas. Not only do they need to refer them, they also need to teach the students how to access and communicate with that institutional area. The administration of referring is complex and requires encouragement and follow-up because the students were not taught how to advocate for themselves when they needed additional services.

Some faculty mentioned that there is not a consistent response to students. "If other departments don't email (back), then the student will not try twice," says Patrick. "They don't

even know what additional services we offer. They did not use them in high school, or they do not know that colleges offer extra programs, so they never think to ask for help in that way" (Larue). Lack of administrative institutional knowledge is especially critical for first-generation students. If the school is not educating them on how to manage the structural offerings of education and they do not have family who lends perspective, they may never access critical services designed to support academic success and goal attainment.

Eduardo would like to see the institution reconsider how they engage with students to reach positive identities. He reflects that leadership is often asking for faculty to call students and engage them proactively when the students are not performing. As a mentor, he is often doing this work anyway, but he says the institution could set the conditions for assistance with their educational journey, not offer "help" because students are somehow less than they should be. "It's the intentional design of how we empower our students to feel like they are worth the investment. That they are capable of rising and that we are not giving handouts. We are not helping you. You have decided what you're going to do, and we are here to assist you in meeting those goals through our programs, processes, and experience" (Eduardo).

Furthering this voice of justice and equity, institutions have the opportunity to chart a successful path for all students and empower them to navigate and engage with the plethora of available resources they offer.

Summary of Manuscript 2

Our employer partners want to know that program developers and faculty at the community college understand workforce development issues. They want to know how we intend to prepare students for the future of work and the agile thinking needed to work with transformational technologies. Considering the complexity of this ask and the desire to produce

an answer, faculty perceptions about teaching critical thinking skills must first be understood. In a community college setting, in particular, classroom engagement is the main touchpoint for many students. Knowing how learning is built at this most foundational level becomes an important perspective to understand; How the faculty, the subject matter experts, perceive the situation is essential to developing intentional programs and processes that enrich the student learning experience across the educational journey in all academic divisions.

This study explored how nine faculty within a community college teach and contextualize critical thinking skills. After reviewing the data, several themes emerged. First, the faculty participants manage multiple and sometimes competing priorities. Some faculty in concentration-specific programs are recruited to teach because of their professional credentials and experience in the field. This industry experience makes them credible members of the faculty, and in some cases, leaders of critical curriculum decisions. Because these faculty members were not taught to be professional educators, critical pedagogical skills must develop over time through professional development workshops and conferences. Some faculty commented on the conflict of finding time to be a better educator and said that their free time for professional development would be spent on discipline-specific professional development, not educational or teaching professional development to stay current with the professional field in which they began.

With these competing professional identities, educator skills and professional teaching and learning innovation best practices must be championed by the institution. The faculty rely on the internal Teaching and Learning Academy conferences for this professional development and these sessions are widely regarded as valuable by the study participants. However, competing instructional needs, like digital twin and online technology tool courses, intrusive advising,

mapping activities to SLOs, and culturally responsive teaching practices, to name a few, leave building critical thinking strategies as one essential topic of many.

The study participants express tension about allocating enough time for individual student learning development as they balance the duty of additional curricular, leadership, and program project activities. This is especially important in a community college setting as many students only engage with the institution primarily through classroom experiences. If our faculty's focus is not on the individual learner in a classroom environment, we may be losing a critical student retention and engagement relationship (Tinto, 1987). When asked, most faculty estimated that they personally interact with 10-15% of their student roster outside of typical assignment exchanges.

We do know how these community college faculty are teaching critical thinking. There were several examples of learning best practices discovered in the inquiry. Examples like self-reflection activities, small group learning, and low-stakes skill-building were mentioned across the programs. In courses where the learning design is centered around written feedback, often the material is reviewed and students are encouraged to review the feedback for improvement on the next assignment. Most faculty are building engagement through activities that connect learning concepts to current events.

Many experts discuss similar knowledge application processes as one-half of the critical thinking equation (Arum & Roska, 2011; Facione, 1990; Kurfiss, 1988; Paul & Elder, 2010). Blooms cognitive level descriptors (Anderson, et al., 2001; Krathwohl, 2002) create SLO structure for courses and these faculty are intentional about activity design that produces evidence of learning in this context.

Many scholars focus more intentionally on the ability to identify questions worth pursuing and the ability to engage in such intellectual pursuits (Facione, 1990; Halpern, 1997; Kuhn, 1999). This study suggests that this aspect of the working definition of critical thinking is unrealized. Building curiosity, or the explicit habit of thinking, is not part of the intentional practices across most of the faculty surveyed.

Faculty report moving students toward independent thinking and learning, but the rigor and pacing of academic work leaves many students at risk who need more guidance. As an open-access institution that serves a wide variety of students, this phenomenon creates an additional classroom teaching burden and jeopardizes student success across the most vulnerable populations. Most faculty reported very little program or institutional assistance in preparing students for the academic journey and held the responsibility individually.

Guiding institutional outcomes do not exist and program outcomes are not widely known. Concerted promotion of a system-wide effort to raise the intellectual curiosity of the student through explicit learning journey expectations and experiences would help shoulder the development and readiness of the learner.

In chapter three, specific information regarding opportunities to share the burden of developing an independent learner, clarifying and unifying learning outcomes, and faculty development will be discussed.

LIST OF REFERENCES

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., ... & Wittrock, M. C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives, abridged edition*. Longman.

APA Dictionary of Psychology, nd. https://dictionary.apa.org/open-system-theory

Arum, R., & Roska, J. (2011). *Academically adrift: Limited learning on college campuses*. University of Chicago Press.

Arum, R., Eccles, J., Heckhausen, J.,Orona, G., von Keyserlingk, L., Wegemer., C., Wright, C., Yamaguchi-Pedroza, K. (2021). *Ensuring a more equitable future: Assessing student learning and growth within Higher Education*. https://files.eric.ed.gov/fulltext/ED612729.pdf

Bloom, B. S. (1956). Taxonomy of Educational Objectives, Handbook I. *The Cognitive Domain*. David McKay Co Inc.

Burning Glass Technologies (2020). New data reveals racial inequity poses the biggest threat to lasting recovery and inclusive future of work. https://www.burning-glass.com/new-data-reveals-racial-inequity-poses-biggest-threat-lasting-recovery-inclusive-future-work/

Bughin, J., Hazan, E., Lund, S., Dahlström, P., Wiesinger, A., & Subramaniam, A. (2018). *Skill shift: Automation and the future of the workforce.* McKinsey Global Institute.

Conrad, C., Johnson, J., Gupta, D. (2007). *Teaching-for-Learning (TFL): A Model for Faculty to Advance Student Learning*. DOl 10.1007 /s 10755-007 -9045-9

De Cremer & Kasparov, (2021). AI Should Augment Human Intelligence, Not Replace It

https://hbr.org/2021/03/ai-should-augment-human-intelligence-not-replace-

    it#:~:text=Contrary%20to%20AI%20abilities%20that,term%20to%20long%2Dterm%20

    concerns.

De Smet, A., Pacthod, D., Relyea, C., Sternfels, B. (2020). Ready, set, go: Reinventing the

    organization for speed in the post-COVID-19 era. McKinsey.

    https://www.mckinsey.com/business-functions/organization/our-insights/ready-set-go-

    reinventing-the-organization-for-speed-in-the-post-covid-19-era

English, A. (2016). The 'in-between' of learning: (Re)valuing the process of learning. In P.

    Cunningham, & R. Heilbronn (Eds.), Dewey in our Time: Learning from John Dewey for

    Transcultural Practice (pp. 128-143). UCL Institute of Education Press.

Facione, P. A. (1990). Critical thinking: A statement of expert consensus for purposes of

    educational assessment and instruction—The Delphi report. California Academic Press.

Facione, P. A. (2020). Critical thinking: What it is and why it counts. Insight Assessment.

    https://www.researchgate.net/publication/251303244_Critical_Thinking_What_It_Is_and

    _Why_It_Counts

Fernandez, F., Liu, H. (2019). Examining relationships between soft skills and occupational

    outcomes among U.S. adults with- and without- university degrees. *Journal of Education*

    and Work. DOI:10.1080/13639080.2019.16978012

Flores, K., Matkin, G., Burbach, M., Quinn, C., Harding, H. (2012). Deficient critical thinking

    skills among college graduates: Implications for leadership.

    https://onlinelibrary.wiley.com/doi/full/10.1111/j.1469-5812.2010.00672.x

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Pearson.

Gross, R. (2017). Comprehensive economic development strategy. Memphis Area Association of

    Governments. http://maagov.org/wp-content/uploads/2015/11/Part-2-Strategic-

    Recommendations-Revised.pdf

Hammer, D. & Wildavsky, A. (1993). *The Open-Ended, Semistructured Interview: An (Almost)*

    Operational Guide: On the Organization of Scholarly Work.

    DOI:10.4324/9780203794517-5

Halpern. (1997). Teaching critical thinking for transfer across domains: Disposition, skills,

    structure training, and metacognitive monitoring. *American Psychologist, 53*(4), 449-

    455. https://doi.org/10.1037/0003-066X.53.4.449

HRO Partners & Younger Associates. (2016). 2016 Strategic Sector Workforce Analysis. HRO

    Partners. https://hro-

    partners.com/Upload/News/gmacw_strategic_sector_workforce_analysis.pdf

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy. An overview. *Theory into Practice,*

    41(4), 212-218. https://doi.org/10.1207/s15430421tip4104_2

Kuhn, D. (1999). A Developmental Model of Critical Thinking. *American Educational Research*

    Association. 28(2), 16-25. http://www.jstor.org/stable/1177186 .

Kurfiss, J. G. (1988). *Critical thinking: Theory, research, practice, and possibilities*.

    Washington, D.C: Association for the Study of Higher Education.

Kyllonen, P., C. (2018). Inequality, Education, Workforce Preparedness, and Complex Problem

    Solving. *Journal of Intelligence, 6*(3), 33. https://doi.org/10.3390/jintelligence6030033

Langston, A., Scoggins, M., Walsh, M. (2020). Race and the Work of the Future: Advancing

    Workforce Equity in the United States. National Equity Atlas.

    https://nationalequityatlas.org/research/race-and-the-work-of-the-future

Marin, L., & Halpern, D. (2011). Pedagogy for developing critical thinking in adolescents:

      Explicit instruction produces greatest gains. *Thinking Skills and Creativity, 6(*1), 1-13.

      https://doi.org/10.1016/j.tsc.2010.08.002

Maurer, R. (2022). Recruiter respond the great resignation in 2022. SHRM.org.

      https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/recruiting-

      talent-acquisition-trends-great-resignation-2022.aspx

National Association of Colleges and Employers. (2020). What is Career Readiness?

      https://www.naceweb.org/career-readiness/competencies/career-readiness-defined/

National Center for Educational Statistics (NCES). (2021). Nontraditional undergraduates:

      Definitions and data. https://nces.ed.gov/pubs/web/97578e.asp

National Student Clearinghouse. (2017, February 13). The role of community colleges in

      postsecondary success. Community colleges outcomes report.

      https://www.studentclearinghouse.org/nscblog/the-role-of-community-colleges-in-

      postsecondary-success/

Paul, R., & Elder, L. (2008). Critical thinking: The nuts and bolts of education. *The Journal of*

      Optometric Education, 33(3), 88-91.

Paul, R. & Elder, L. (2010). *The Miniature Guide to Critical Thinking Concepts and Tools*.

      Foundation for Critical Thinking Press.

Saldana, J. (2013), *The coding manual for qualitative researchers* (3rd ed.). SAGE Publications

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard*

      Educational Review, 57(1), 1-23.

Skilton, M. & Hovesepian, F. (2018). The 4th Industrial Revolution: Responding to the Impact

      of Artificial Intelligence on Business. Palgrave. McMillian.

Society of Human Resource Management (2019). The global skills shortage: Bridging the gap

    with education, training, and sourcing. SHRM.org. https://www.shrm.org/about-

    shrm/Documents/SHRM%20State%20of%20Workplace_Bridging%20the%20Talent%20

    Gap.pdf

Tinto, V. (1987). *Leaving College: Rethinking the Causes and Cures for Student Attrition*.

    University of Chicago Press.

Weiss, R. (1994). *Learning from Strangers - The Art and Method of Qualitative Interview*

    Studies. The Free Press.

Wilkie, D. (2019). Employers Say Students Aren't Learning Soft Skills in College. SHRM.org.

    https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/employers-

    say-students-arent-learning-soft-skills-in-college.aspx

World Economic Forum. (2019, April). Health and Healthcare in the Fourth Industrial

    Revolution: Global Future Council on the Future of Health and Healthcare 2016-2018.

    http://www3.weforum.org/docs/WEF__Shaping_the_Future_of_Health_Council_Report.

    pdf

US Chamber of Commerce Foundation. (2014). Managing the talent pipeline: A new approach to

    closing the skills gap. https://www.uschamberfoundation.org/managing-talent-pipeline-0

US Department of Education, (2021). College Scorecard. https://collegescorecard.ed.gov

World Economic Forum. (2019). Health and Healthcare in the Fourth Industrial Revolution

    Global Future Council on the Future of Health and Healthcare 2016-

    2018. https://www.weforum.org/reports/health-and-healthcare-in-the-fourth-industrial-

    revolution-global-future-council-on-the-future-of-health-and-healthcare-2016-2018

MANUSCRIPT 3: RECOMMENDATIONS FOR PRACTICE

Problem of Practice: Critical Thinking is a Competency Gap

Thought leaders across industry and education agree that employees who can demonstrate critical thinking will be well-positioned to succeed in the workplace (Arum, et al., 2019; Association of American Colleges and Universities, 2020; Flores, et al., 2012; National Association of Colleges and Employers, 2020; Skilton & Hovesepian, 2018; Teng & Ma, 2019; US Chamber of Commerce, 2014; Wilkie, 2019). Employers state that technology is changing processes and systems exponentially, and people must anticipate the disruption and opportunities that innovations create. Local employers state that they need employees who can demonstrate skills that lead to independent decision-making and team buy-in. Business and industry leaders want employees who can think through a set of inputs, whether operational or interpersonal, and solve problems through systems analysis (Gross, 2017; HRO Partners & Younger, 2016).

Employers and economists struggle to predict the exact job roles of the future due to the rapid integration of transformational technologies (Bughin, et al., 2018; PEW, 2016; World Economic Forum [WEF], 2019). Many work roles of the future have not been thought of yet. Workforce experts predict that employees who can manage quick adaptation to processes and people will succeed (Association of American Colleges and Universities, 2020; Flores, et al., 2012; National Association of Colleges and Employers, 2020; Skilton & Hovesepian, 2018; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Wilkie, 2019).

Labeled the Fourth Industrial Revolution (WEF, 2019), the technology effect in the workplace has caused a shift in desired human skills and competencies. Global, domestic, and local leaders in business, healthcare, technologies, and manufacturing report that they need multi-skilled workers whose thinking skills are just as sophisticated as their discipline-specific

technical skills. Research conducted by several government agencies, private sector leaders, and educational institutions all agree that the most highly sought-after skills are critical thinking skills, like self-awareness, creative reasoning, problem-solving, and adaptability (Baird & Satyanarayana, 2019; McKinsey Global Institute, 2019; National Network of Business and Industry Associations, 2015; Teng & Ma, 2019; US Chamber of Commerce Foundation; 2014; Vasanthakumari, 2019; Wilkie, 2019).

The 2020 McKinsey report, "Ready, set, go: Reinventing the organization for speed in the post-COVID-19 era" DeSmet, et al. (2020) directly speaks to the need to develop critical thinking skills. These companies recognize that the pace and scale of learning must keep up with innovation and changes in technology. Skills can and do expire. Organizations need people who can continually learn and adapt. In many cases, companies will need to reskill large portions of the workforce. That will require expanding the learning content available to employees and using technology to deliver what is needed to each person. It also will mean building the organizational and institutional muscle to strengthen the skills related to learning how to learn (DeSmet, et al., 2020).

According to the Committee for Economic Development (CED), "The pace of change, including forced technological transformation during the pandemic, demands a workforce of lifelong learners who continuously upgrade their technology skills as well as "soft" skills valued by employers, including critical thinking, communication, and creative, "out-of-the-box" thinking—skills that cannot be automated". The report adds, "In response, the US will need to execute a comprehensive, collaborative strategy for preparing, upskilling, and reskilling a future-ready workforce" (CED, 2021).

Fueled by the accelerated pace of automation during the pandemic, our local employer partners are trying to contextualize the new work-role skill requirements in their recruiting efforts. Local employers have long partnered with the local community college to recruit new college graduates who are ready to meet the demands of the modern workplace. Historically, many college students do not demonstrate adequate and contextual critical thinking growth as a result of their education (Arum & Roska, 2011; Committee for Economic Development [CED], 2021; DeSmet, et al., 2020; Huber & Kuncel, 2016; McKinsey Global Institute, 2019; Pascarella, et al., 2011) and in the local context, this is also true (Gross, 2017; HRO Partners & Younger, 2016).

Supporting the argument that businesses report a lack of employment readiness in post-secondary education programming, Gross (2017) reports there is also a local "disconnect between the targeted industries and the workforce development programs that are being developed" (p. 31) as "there appears to be a dearth of direct, local technical assistance for training and workforce development (Gross, 2017, p. 31). This direct critique of the local workforce and college systems is alarming as these institutions claim to be the provider of such skill development in the programs they offer. Our institution must be able to identify key strategies that promote critical thinking, in both problem-solving and building curiosity habits.

When asked about the "greatest talent development challenges facing your company", over 80% of local employers stated that "Applicants don't have the skills we require" and over 50% of employers specifically stated that "New hires lack soft skills (communication, customer service, teamwork, etc.)" (HRO Partners & Younger, 2016, p. 74).

These sentiments are echoed in a report commissioned by the Memphis Area Association of Governments (2017), as the first key theme identified as an obstacle to local economic

prosperity is "Labor force issues are holding back economic growth" (Gross, 2017 p. 5). The report continues, "the steering committee, focus groups, and interviews all identified several serious gaps in labor force competitiveness (relating to both skills and job readiness) that many claim are holding back the region's economic growth" (Gross, 2017 p. 5). Gross (2017) states that the GMACW should take the lead in ensuring that local workforce efforts, including local college programs, offer the skills necessary for the local workforce to thrive and remain competitive as "job readiness programs also go hand-in-hand with any job training" (p. 24) and, within a critical anchor industry, the "logistics cluster is becoming more automated" (pg. 7), (Gross, 2017).

Critical Thinking Competency Research

Critical thinking is an identified, defined competency (Arum & Roska, 2011; Facione, 1990; National Association of Colleges and Employers [NACE], 2020) that is an important skill for career success (NACE, 2021).

Most scholars generally agree that critical thinking refers to the "use of cognitive skills or strategies, and through teaching and coaching, students can master critical thinking" (Facione, 1990; Halpern, 1997; Kuhn, 1999). Many contemporary researchers agree that critical thinking begins with identifying a problem, and some focus more intentionally on the ability to identify questions worth pursuing and the ability to engage in such intellectual pursuits (Facione, 1990; Kurfiss, 1988; Paul & Elder, 2010). Most literature speaks to two aspects of effective critical thinking that interweave to create better thinkers; these two aspects are a demonstration of knowledge application skills and positive dispositions, or characteristics of the thinker. (English, 2016; Facione, 1990; Halpern, 1997; Paul & Elder, 2008).

Facione (1990) published the Delphi report, a *Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*, a collective work of over 40 experts in critical thinking science. These experts agree that critical thinking has two major elements, skill and disposition. Within the research, some scholars further section critical thinking to include the articulation of logic (Kurfiss, 1988; Kuhn, 1999). Generally, the main aspects of critical thinking development are defined as argument skills (rhetoric), cognitive process (reasoning and problem solving), and intellectual development (epistemology and meta-cognition) (Kurfiss, 1988).

Paul and Elder (2008) say that students need to be able to" identify the "parts" of their thinking, and they need to be able to assess their use of these parts of thinking. They define critical thinking as "the art of analyzing and evaluating thinking with a view to improving it". First, there is the idea that critical thinking demonstration is related to the characteristics and disposition of the person. "A person disposed towards critical thinking has a positive critical spirit, a probing inquisitiveness, a keenness of mind, a zealous dedication to reason, and a hunger or eagerness for reliable information." (Facione, 1990, p. 11). As cited in Kuhn (1999), John Dewey, states the purpose of education is to foster growth. "The real problem of intellectual education," Dewey says, "is the transformation of more or less casual curiosity and sporadic suggestion into attitudes of alert, cautious, and thorough inquiry" (p.18).

Secondly, students must be able to apply this independent thinking to evaluate rationale for problem-solving. Building skills through terminology and conceptual frameworks allows students to then apply this knowledge to solve problems across various contexts (Halpern, 1997).

Conceptual Framework

This inquiry asks faculty to describe how they build learning and critical thinking within their courses. In order to make meaning of what they do, and how they do it, the Knowledge

Base of Teaching (Shulman, 1987) is the conceptual framework used to examine four (of seven) specific aspects of teacher knowledge: The four aspects of Shulman's Knowledge Base of Teaching are:

1. Knowledge of educational ends, purposes, and values, and their philosophical and historical grounds

2. Pedagogical Content Knowledge (PCK); a special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding

3. Knowledge of learners and their characteristics

4. Curriculum knowledge; with a particular grasp of the materials and programs that serve as "tools of the trade" for teachers

Interview questions aligned to each of these four aspects of professional preparation to determine (1) how (if) a teacher considers critical thinking development a main aim of education, and if so, how do they see their role in that development; (2) how (if) their mix of teaching approaches and discipline-specific expertise enables them to contextualize the purpose, value, and methods of critical thinking within their discipline and how they construct that knowledge; (3) how (if) their knowledge of their learner's experiences and characteristics influence the construction of this knowledge; and (4) how (if) they improve activities within their teaching that develop critical thinking.

The conceptual framework was appropriate for the intention of the study. In order to know how critical thinking is established in a typical classroom environment, the study needed guidance on the basic expectations of teacher and student interactions. This framework provided the structure to ask questions that brought perspectives on the purpose of learning as it relates to success, both academically and professionally. This structure also guided the inquiry around student characteristics which connects to what the literature describes as an important aspect in

developing critical thinking competence, the habit or curiosity of the learner (English, 2016; Facione, 1990; Halpern, 1997; Paul & Elder, 2008).

Faculty of this community college significantly contributed to the efficacy of this project. Although not a sought-after outcome, the collected data serves as evidence of teaching competence. As each one of the participants is currently a teacher, they all had a deep sense of individual perspectives on teaching and learning and what works for them. Interestingly, this individual mixture of perceptions, philosophy, experience, and pedagogical approaches is one of the aspects identified within my conceptual framework as an essential teacher competence (Shulman, 1987). This particular mix of professional knowledge, and how we construct that information delivery for a learner is Pedagogical Content Knowledge (PCK), (Shulman, 1987). Shulman (1987) defines PCK as "that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (pg. 8). Perhaps unbeknownst to the study participants, they were demonstrating competence while we were discussing other aspects of this conceptual model.

Summary of the Data Findings

Qualitative data from nine faculty across a community college was used to build perspective on the act of building student thinking competence. The methodology identified key faculty who exhibited positive characteristics in sharing teaching and learning techniques. Certain professional responsibilities were sought and once faculty were identified who fit the participant attributes, emails were sent to participate in the study. Four faculty represented concentration-specific faculty in the Business Division and five faculty represented the Humanities Division. One faculty represented the Allied Health Division of the college, and

although that data was able to be used in general terms, not enough data existed to validate themes or findings specific to the Allied Health Division.

Contextualizing Critical Thinking in the Classroom

The data collected in this study illustrated how faculty define and contextualize thinking skills. Most of the faculty had very similar approaches to teaching and assessing critical thinking and the majority of the agreement centered around following assignment expectations and assessment of student activity interaction.

The faculty defined critical thinking competence as solving topical problems (concentration specific) and the ability to express an authentic and informed point of view (concentration specific and general education). Although some variances were noted in providing methods of feedback, most of the faculty agreed that successful interaction with an activity (followed the assignment directions, achieved the assignment outcomes) was the evidence that thinking occurred. Generally, this study found that the main focus of critical thinking in the classroom was articulation of logic against a set of appropriate guidelines, which is an essential element in developing thinking gains (Kuhn, 1999; Kurfiss, 1988).

Often, the value of thinking critically was based on situational contexts. All the faculty related the ability to express an authentic point of view as critical to academic and career success. In concentration specific classrooms, an additional layer of critical thinking value is expressed. The ability to write in the discipline and follow decision making logic specific to the discipline is critical to professional success within the field. Finally, in some instances, faculty who advised and coached students who were not achieving academic benchmarks mentioned the aspect of critical thinking as it related to setting personal goals, and performing self-led reasoning specifically to adjust in order to meet those goals.

Finally, all faculty but one implicitly developed critical thinking in their

classrooms. Most faculty perceived that explicitly introducing critical thinking as an outcome

was unnecessary education jargon or felt that some groups would become overwhelmed by this

expectation. Most agreed that by engaging in the material, students demonstrated critical

thinking. The one faculty who explicitly developed critical thinking was the only faculty who

began their professional educator role in the K-12 system. All others are career professionals

who are now teaching concepts of their discipline.

Facilitating and Developing Critical Thinking in the Classroom

Pedagogical approach and specific understanding of learner experiences and knowledge

underpinned how faculty developed critical thinking competence into the classroom.

All of the faculty designed their course(s) using activity interaction (and achievement) as

the evidence of improved thinking. These activities and assignments are supported in two general

ways. First, the textbook is a critical genesis for teaching approach. The text determines the

topics and assignments, and moreover, supplies robust teaching resources like digital quizzes and

tests that align with the LMS and activity ideas and instructions for applied learning. Secondly,

many faculty spoke of custom assignments that related the course topics to relevant social and

cultural topics. Many spoke of the ongoing turbulent global issues as excellent examples of

conceptual application and designed activities to improve student engagement in the course

material using shared lived experiences. Most of the pedagogy seemed rooted in deductive

teaching techniques. This deductive teaching approach also seemed to led to most of the critical

thinking skill development as an implicit teaching practice. And as highly prescribed activities

are also a part of deductive instruction, there was little focus of building the habit of curiosity,

more focus on the solving of problems through rational deduction. Pedagogical approach options that build habits of thinking as well as the skill of thinking will be explored in later sections.

In this community college setting, most faculty spoke of the varying student identities that they teach. An obvious experience and readiness gap exists across student participants. In one classroom, a faculty may be teaching a new high school graduate, representing a broad range of preparation for independent learning environments, non-traditional students who are returning to college, representing a broad range of life and career experiences, and students who are resourced differently, representing inadequate technology to complete academic assignments and time scarcity to complete academic assignments due to competing responsibilities.

The faculty generally spoke of allowing the independent learners to self-direct. For students who were not achieving assignment (or attendance) outcomes early in the semester, faculty identified and referred these students to institutional resources designed to improve academic performance and engagement. The remaining students seemed to be where the main focus of instructional investment landed, coming through in assignment feedback and reiteration of previous topics to connect the current concepts to previous ideas.

All faculty spoke of reaching out to students and offering additional assistance to ensure that all levels of preparedness felt supported. Most of the faculty reported that a small percentage of students ever engaged in that offer.

Answering the Research Questions

This study seeks to understand how faculty in a two-year community college setting integrate critical thinking (CT) into their course teachings. Understanding the faculty perspective of teaching critical thinking skills is a critical first step to identifying opportunities to graduate prepared professionals. A community college student can be vastly different than a typical 4-year

residential college student (Tinto, 1987), and clear insight into faculty teaching approaches and challenges is essential for this research context, specifically. In addition, community college classrooms bear a disproportionately high engagement responsibility, as many community college students are only engaging with the institution while they are in class or engaged with a particular faculty member for a specific course (Tinto, 1987).

Additionally, our commitment to ethics, social justice, and equity demands that our institutional processes prepare our students for success in today's social and economic responsibilities (Burning Glass Technologies, 2020). We must instill the habit of curiosity as a foundational competence; this skill will support our students over their lifetime. No longer can education rely on teaching topics and processes that experts predict will become obsolete (Arum, 2019; Bughin, et al., 2020; Committee for Economic Development, 2021; De Smet, et al., 2020; Teng & Ma, 2019; World Economic Forum, 2019). We must develop lifelong learners who can produce an informed point of view and apply reasoning toward complex problem-solving across a variety of personal and professional applications.

Research Question #1: How do community college faculty define and establish the context of critical thinking within their discipline?

For purposes of this study, definition variances did not seem to greatly influence perceptions on teaching critical thinking. However, most participants agreed that critical thinking begins with solving a problem. Only one participant spoke of the ability to identify questions worth pursuing and the curiosity behavior to engage in such intellectual pursuits.

Defining Critical Thinking. No participants provided a formulated response or standard working definition. Most of the responses included *application* of knowledge statements and centered around Blooms levels of cognition like evaluate and interpret (Krathwohl, 2002). A few

faculty further elaborate that critical thinking was not defining anything, and should be considered a higher level of intellectual ability.

In addition to most faculty speaking about how critical thinking solves problems, most also spoke of critical thinking as essential to effective communication, in general.

As an essential component of a critical thinking definition (Paul & Elder, 2008), only one participant mentioned the willingness or behavior of thinking intentionally. The idea of purposeful thinking or the teacher's role in defining *parts of thinking* was omitted consistently enough to become a theme in the research findings. Curiosity as a behavior necessary for critical thinking development as a concept was mentioned several times as faculty described the absence of this trait in many of the learners.

Contextualizing Critical Thinking. In addition to generally agreeing that critical thinking moves past memorization of data toward evaluation of data, most of the participants offered similar definitions that described the context or purpose of critical thinking. Most assertions were practical in nature. The faculty spoke of being able to know the correct answer and transferring terminology into solving processes in addition to the skill of informed expression.

Most faculty consistently spoke of critical thinking as a foundation of success. They spoke of critical thinking as a necessary skill for living a good life, being a successful student, and professional. In addition, some faculty try to link degree completion to work and financial stability. A common denominator many faculty report using to capture their students' attention is how the skills in the course are directly linked to their future success. Many study participants linked career success to the ability to express oneself. Some link the degree as the credential that pays more money over time.

Finally, most of the faculty spoke of how they contextualized critical thinking in their courses through advising students how to think about their life circumstances and the choices they make about what gets their attention.

Because the concentration-specific faculty use case studies and templates for most knowledge applications, many of those activities centered around newspaper headlines and current events. In interviews with those faculty, they encouraged students to apply certain processes as though they were the worker, so they contextualized learning in real-world applications.

The general education faculty contextualized thinking in terms of expression. Specific job role connections were not spoken of, but many faculty did relate being able to create a well-informed argument helps students in all aspects of their lives.

Teaching Resources: Most study participants spoke of the key role that the course textbook plays in building thinking frameworks. Faculty use the textbook to provide terms and concepts for solutions in expression and in discipline-related scenarios. These resources are especially important as students interpret frameworks within the discipline. In the world of work, there are always many possible correct ways to proceed in solving problems and the teaching resources provide a plethora of scenarios to demonstrate knowledge application.

Research Question #2: How do community college faculty facilitate instruction that improves the critical thinking of their students?

To understand how the students would know that thinking is a skill that can be improved or the main aim of the process of learning, the theme of *interaction* with the coursework activities came up often. Faculty shared methods for improvement in curriculum development and construction of appropriate course activities.

Through Topic Interaction. Even though many participants are reluctant to explicitly discuss thinking processes and behaviors, they are very intentional in building thinking competence into coursework and pedagogy. Many faculty reveal that they are building student thinking through thoughtfully engineered course-related activities. They reason that, by way of interacting with the material, the students naturally build their thinking competence. Many faculty do not explicitly build thinking competence or expression until many weeks into the semester. Ironically, even though most of the faculty teaching processes seem deductive in nature, the act of moving through the material to know that "I" can do it, is in itself an explicit practice strategy. Faculty refer students back to the work they have completed as *evidence* that they can do the work. Faculty speak of removing the fear of failure as a reason for this approach.

Although topic interaction is foundational to building thinking competence, the implicit approach toward thinking awareness may be a foundational cause for the noted lack of curiosity and learning habit development. Research is clear that all learning, especially meta-cognition, should be taught with clear standards, expectations, and documented benchmarks for individual development (Kurfiss, 1988, Kuhn, 1999; Paul & Elder, 2010).

Use of Teaching Resources. Most study participants spoke of the key role that the course textbook plays in building thinking skills. When asked what makes a text the best choice most faculty has two answers. For the students, it needed to be a reasonable price so they would buy it. Secondly, faculty seek a text that is teacher resource-rich. This aids full-time faculty and adjunct faculty in more efficient grading and homework assignment ideas. Many of the faculty spoke of the Learning Management System (LMS) integration of learning materials and supplemental information as a key aspect of an effective text. The types of quizzes and tests that can be automated are typically multiple-choice and word bank type assessments which are not

ideal practices for developing application thinking skills, however, these types of assessments are great for building foundational terminology knowledge and memorization of concepts or theories. One faculty spoke of texts that are written for the community college setting. There is room for exploration on texts that include activities that are relatable to a community college student. Connecting to lived experiences is a best practice (Facione, 2020) when trying to develop critical thinking skills, so the text should be full of examples that appeal to students in a community college setting.

Faculty spoke of using discussion boards to build thinking skills, but almost all agreed that students game the system. It seems easy for students to paraphrase book content or other student work and recycle familiar concepts. They all thought that the online discussion post function was a great tool to use if the student's habits were to create and promote original thought.

Rubrics were mentioned often as a way to instruct students to follow guidelines for specific processes. In general education, consideration for the audience and spelling, grammar, and argument construction feedback is great for rubric content. The concentration-specific faculty, however, did not see the use of rubrics as helpful. The problems and case studies are specific, and the focus of their teaching is not necessarily great writing. Their focus was more on applying a skill, knowing how a professional would apply the skill in a work role. The concentration-specific faculty spoke of how many correct answers exist in the professional field, so a general application of a model was more important than answering correctly, as a student may find in a foundation's terminology course or a history course.

Through Curricular Improvements. Almost all of the study participants reported intentionally making course improvements, however, the modality affected the faculty's ability

to do this consistently. Reporting on in-person and hybrid courses (defined as content living in the LMS, and students using half of the weekly course time to work independently and half of the weekly course time to meet in person), faculty state that they can make activity improvements from semester to semester. The course design overall is managed by one leading faculty, so faculty must share their innovations and anticipate that the improvements are made. Improvements can be made by individuals as they see grades on certain assignments not at expected levels, or perhaps as a result of student feedback. Most of the faculty said that they read end-of-course surveys to ascertain whether a change needs to be made.

Because many of the courses underwent a course redesign when put online during the pandemic, many courses are delivering on learning expectations. The faculty reported that the time to intentionally work together and create one master copy of a course was time well spent. The activities were evaluated against the learning outcomes. The SLOs all use Bloom's taxonomy (Krathwohl, 2002) and the SLOs are designed to integrate learning what (topic/skill descriptions), learning how (evaluate, synthesize, etc.), and learning through activities.

Most faculty spoke of the option to suggest changes to the course activities, syllabus, or course master copy (or update if they are the owner) each semester. This action research approach allows for dynamic responsiveness to student engagement levels and achievement results.

Through Activity Engagement. All of the faculty participants use their qualifications as a professional to create course activities that develop course learning outcomes. Those who teach in discipline-specific contexts linked critical thinking to future professional expectations. They use structured activities that link current events within the industry to textbook learning of conceptual frameworks. There seems to be an abundance of creative activities across all

132

programs that use current events in news, media, and entertainment to connect theoretical learning to practical applications.

Most faculty report that building critical thinking is accomplished through activity and course assignment interaction. The study participants build learning activities that relate to current events, historical events, and personal experiences in order to create an emotional or cognitive connection to concepts and topics for deeper reflection. This is an experiential learning practice recommended by researchers as a way to increase thinking against certain objectives or goals (Halpern, 1997).

Many faculty use small group learning or peer critique to build differences in thinking perspectives. They ask students to build on each other's thinking. This helps with idea articulation and validation. This practice also aids in working in a team setting creating buy-in. Understanding how to appeal logic against a set of goals or objectives is part of critical thinking (Halpern, 1997), however, gaining buy-in from those who must support the idea for success is another aspect. Building the curiosity in others to see a task through, to encourage thinking critique against an idea is just as important (Kuhn, 1999; Kurfiss, 1988).

Case studies and scenarios are used most often in concentration-specific courses. Relating conceptual and theoretical frameworks is challenging and faculty have relied on the social issues we face as a community and nation to explore learning. Connecting theoretical concepts to ones lived experience to examine our thinking is indeed a best practice (Facione, 2020; Krathwohl, 2002; Paul & Elder, 2008).

Technology should be part of the learning design. Short videos are key to connecting the content to learner interest. Interacting with content, and expressing personal views is a familiar process of developing an argument in our social media interactions. Using this ubiquitous

element of our lives could be a key strategy to engage students across topics and assignments as we teach our students to be critical of arguments, search for diverse perspectives, and evaluate our own thinking processes.

By Understanding Learner Knowledge and Experiences

Most faculty spoke of the vast range of student independent learning readiness level of students in three groups. There is the section of students they assessed to be independent learners as not needing much guidance on project completion or grade achievement. Then, they discussed the grouping of students who were not managing a level of independent achievement that indicated acceptable performance. In some cases, faculty spoke of identifying those students quickly, referring them to academic support and advising. Those students were often coached by the faculty as to how to use the system of academic resources, and expected to engage in those available resources to improve academic outcomes.

The final group, the largest mass, seemed to be where most of the faculty spent instructional time. This instructional investment was to create a sense of growth for each student regardless of familiarity with the topic. Most faculty seemed committed to learning and development as the primary objective for this group, appropriately acknowledging this middle group did not achieve similar grades. This effort appears as individual coaching, providing additional instruction on how to navigate the course text and assignments. Almost every faculty spoke of the importance of textbook teaching resources to provide supplemental academic assignment direction. Faculty, generally, did not use rubrics to aid as a blueprint to outcome achievement. Most of the faculty reported being in personal contact with approximately 15-25% of their enrollment roster.

Despite these issues, however, no faculty expressed changing their approach or contextualizing critical thinking skills any differently. Most faculty did say that if they were in a different type of college, they would not need to begin with the basics of teaching how to organize thoughts and would interact with topic concepts more quickly.

Improving the Problem of Practice: Focusing on Equity, Ethics, and Social Justice

As a matter of ethics and social justice, local training and workforce development institutions must understand the needs of their community and deliver thoughtfully constructed, effective skilling initiatives that target the most vulnerable populations to improve the economic mobility of the community (Langston, et al., 2020; Powell, 2020; Skilton, et al., 2012).

Evaluating how teachers construct and operationalize critical thinking for career and life success is a direct connection to empowering individuals who can identify, express, and lead the work needed to improve (if not solve) many of our society's social justice issues. Our society is wrestling with many unjust social realities, some long unanswered and some acutely realized as a result of the pandemic. I believe collaborating with others to "seek to interpret people's constructions of reality and identify uniqueness and patterns in their perspectives and behaviors" (Glesne, 2001, p.23) is the path towards a more just society. Understanding how faculty empower students to develop sophisticated thinking for a robust democratic society is an important tool to forward our work in social justice and equity practices.

Education Mitigates Disproportionate Automation Risk

The coronavirus crash brought societal and economic mobility challenges into clear focus, exposing the gap between college-educated, primarily White, knowledge economy workers who could easily continue to work from home via computers, and communities of color who are overrepresented in low-wage, service sector and gig economy work. According to

Langston, et al., (2020) "Workers of color, especially women, were disproportionately employed as essential workers who continued to work and have been more exposed to the health risks of the virus, and they were also disproportionately among the nonessential workers in hospitality, retail, tourism, and other sectors that have experienced the greatest layoffs, diminished hours, and cut wages (p.9)."

The CED reports that the pandemic has "disproportionately displaced minority workers, women, youth, and workers with lower educational attainment" (CED, 2021). The National Governors Association (NGA) in conjunction with the American Association of Community Colleges (NACC) reports that over 14 million jobs were lost in the pandemic, most of those in lower-income service jobs (NGA, 2020). According to a report from Chairman Powell at the Federal Reserve, "among people who were working in February 2019, almost 40 percent of those in households making less than $40,000 a year had lost a job in March" (Powell, 2020).

Displaced workers will come back to a job they may not be skilled to maintain. A recent study from the National Equity Atlas, "the nation's most detailed report card on racial and economic equity" (Nationalequityatlas.org, n.d.) details how technology in the post-COVID world is disproportionately affecting communities of color.

Defining this scenario as automation risk, Langston et al., (2020) state, "Certain occupations will become obsolete; others will be profoundly "changed, expanded, or combined" (p. 44) and contextualizes the impact of this change by reporting, "Some of these processes cannot be reliably predicted, but given the current trajectory of automation-driven job change, it is clear that people of color are at increased risk of job disruption that may push them into more precarious, marginalized work or displace them from the labor market altogether in the absence of proactive, equity-focused policy solutions" and continues, "Automation is accelerating in the

wake of the pandemic, and it disproportionately places people of color and immigrants at risk of being dislocated from their jobs. Latinx workers face 28 percent greater automation risk than White workers, and Native American and Black workers face 21 and 18 percent more risk, respectively" (Langston, et al., 2020, p.45).

Automation risk is best calculated in terms of the likelihood of computerization of the underlying tasks that make up a given occupation, which can lead to worker displacement. Very few jobs consist entirely of tasks that can be computerized, but most occupations include enough automatable tasks to be considered at risk of automation. People of color are disproportionately employed in jobs that offer unstable, precarious, or low-wage work and face an elevated risk of automation compared to good jobs. Many large occupations, such as food preparation workers and warehouse workers, have recently begun to experience displacement due to automation. English-language fluency is another compounding issue, carrying a difference of 23 points in automation risk. Workers who do not speak English face an automation risk of 73 percent; those who speak the language but not well are in occupations that face on average a 70 percent automation risk, and those without a four-year college degree face a significantly higher automation risk than those with a bachelor's degree. (pp. 44-46)

Reskilling in the workplace is not the only issue driving equity concerns; many unjust racial and societal practices are at the forefront of post-COVID economic recovery discussions. Communities of color have a weaker economic position, overall. Cited in a report by the Hamilton Project (2020) which promotes policy suggestions to mitigate the racial economic inequality brought on by the pandemic, "Black workers are more likely to work within the low-wage labor market...and relatively unstable employment overall" (p. 2) and concludes that "Black Americans are generally in an even weaker position to absorb this economic adversity.

Black families face a range of economic risks without the buffer from stable employment, adequate earnings, or sufficient savings and wealth accumulation" (Hardy & Logan, 2020, p.7).

Although the initial focus of this research was on the transferability of critical thinking to a work environment, another important personal development aspect is clear. Critical thinking underpins the ability to assess personal and professional direction. Because many community college students are engaging in education to improve their existing career pathway *choices* (Hirschy, et al., 2011), an important individual benefit to developing critical thinking skills is personal growth in self-awareness, positionality, goal-setting, career development, and personal satisfaction with the future (Arum, et al., 2021).

Community College Focus

As employees choose how to reskill and upskill themselves to meet the needs of this post-COVID work environment, one cost-effective choice comes from local community colleges (American Association of Community Colleges [AACC], 2021). Community colleges offer certificates and associate's degrees in multiple fields (Skillman, et al., 2012), and community college graduates have immediate access to lucrative careers (US Bureau of Labor Statistics, 2021). Although some community college programs are designed as a stepping stone towards a four-year degree, in many industries, there is significant market value in a two-year degree and related certificates. Associate degrees and certificates provide access to well-paying, expanding career pathways (US Bureau of Labor Statistics, 2021; AACC, 2021) and also get students to work faster.

Flexible programming aids students who are working or balancing other life responsibilities and offers an alternate educational structure to the traditional full-time, four-year residential college experience (National Student Clearinghouse, 2017). This flexibility is a

critical aspect of persistence, as the majority of community college students are considered non-traditional, meeting at least one of seven criteria including delayed enrollment, part-time status, full-time worker, financial independence for financial aid purposes, has dependents, is a single parent, and is a recipient of a GED or high school completion certificate (National Center for Educational Statistics (NCES), 2021).

Besides providing open access admissions and low tuition through federal financial aid awards or state-funded tuition-free programs, community colleges are a pathway to job role and career pathway exploration. As the needs of the workplace are quickly changing, so are the opportunities (US Bureau of Labor Statistics, 2021). A student has more flexibility to explore different courses and concentrations in a community college without incurring as much debt or risk investing too much time in a discipline that is not the right fit. According to researchers, "25% of undergraduates are not seeking a certificate or degree" (Educationdata.org, 2021). This data point suggests that the credential may not be as important as the exposure to and investigation of specific discipline training. Some students enter college to receive discipline specific training to improve employment options or upskill for future promotions in their current career pathway (Hirschy, et al., 2011). This aspect is of particular importance to this study. Considering that many students seek skill building through course work, each and every course must be able to demonstrate how students are building skills in the discipline along with building the habits of thinking. The skills will eventually innovate; the habit of thinking will sustain success across this workplace innovation journey.

Critical thinking is, at its foundation, a competency that creates autonomy and self-empowerment. If we as a society truly hope to create equality through equity and social justice policy, critical thinking about how the pandemic has disproportionately affected communities of

color is essential. The global pandemic continues to drive technological advances and it is the opinion of the researcher that policymakers, employers, and educators work together to ensure that all citizens have access to and the right to build prosperous, pandemic-proof, long-term careers.

In this work, community college leaders may be able to offer programs that support a wide variety of students who wish to improve their circumstances. Knowing how to engage our students and demonstrating our commitment to workforce readiness may provide programs that address some of the wealth and education gaps that "are well-documented and attributable to historical discrimination and exclusion from education" (Hardy & Logan, 2021).

Improving the Problem of Practice: Strategies and Recommendations

Critical thinking underpins adaptability, self-awareness, and entrepreneurial behaviors, all of which support success in the future of work (Arum, 2019; Association of American Colleges and Universities, 2020; Flores, et al., 2012; National Association of Colleges and Employers, 2020; Skilton & Hovesepian, 2018; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Wilkie, 2019). Workforce *readiness* is an evolving term and a complex educational outcome. Colleges and Universities must be able to articulate how they develop critical thinkers for career (and personal) success because knowing how one becomes ready, or where to go for more education for "readiness" is not necessarily clear. Respondents from the 2016 PEW study "The State of American Jobs" report that the best way to get the skills training they need "would be through additional formal education" (p.9). Because community colleges are more accessible and affordable (AACC, 2021), job seekers may find an (re)entry point into formal education through a local community college program.

As automation drastically changes the way we all engage in our work and the research is clear that critical thinking leads to success in both professional and personal applications, educational institutions, regardless of designation, must design the educational journey as more than skill or knowledge *acquisition*. Individual students who build and strengthen the habit of curiosity for lifelong learning will succeed.

Institutions that promote clear pathways for readiness will be easy for inquisitive people with which to connect. However, institutions need to do the internal improvement work necessary to know how they design systems for learning success in both technical skill advancement and readiness for future innovation. Institutions that incorporate explicit skill and thinking habit building into their mission statements and academic outcomes will be well positioned to deliver on this promise. An institutional approach would assist faculty in sharing the burden of this work. Administratively, student learning outcomes that facilitate and assess the skill of thinking as interpreted through Bloom's Taxonomy like interpret, evaluate, synthesize (Krathwohl, 2002) plus processes that build thinking habits can guide the work across all service programs, academic programs, and course level initiatives. Every student would be able to know the parts of an effective thinking process and practice them, not only in a topic specific context, but also as they engage as a student in the institution. This would become an institutional ethos, one that allows practice in a low-stakes environment and one that prepares students for what they will likely find in the modern workplace. Finally, an institution would need to ensure that staff and faculty have the development tools available to innovate teaching practices and affiliate into the role of an educator who coaches learning accountability, e.g., habit, to the learner in addition to discipline-specific knowledge transfer.

Institutional Mission: Building Curiosity

An institution must first decide what they hope to be to the community and the students who enroll. Although called a community college, an institution cannot serve everyone in the community well if they do not understand their contribution relative to other educational institutions. Community colleges must be able to place themselves in the education supply chain along with other technical colleges, trade schools, and four-year colleges and universities. All institutions will need to evaluate their contribution, and therefore competitive advantages, within this education supply chain as students have a vast array of educational options.

College service and mission statements should be evaluated against student, faculty and staff, and market and community feedback to ensure that the intended contribution matches the actual contribution. Does the mission statement include the various stakeholders? Have the needs of those stakeholders been defined and validated? For the purposes of this DIP, we know that the local community needs more self-directed thinking skill from our students (HRO Partners & Younger Associates, 2016; Gross, 2017). This research can help pose possible solutions toward why this gap persists, and what adjustments an institution might initiate to close this gap.

Collect and Use Student Success Data for Institutional Innovation

Firstly, we need data regarding how the students perceive their preparation for the future of work. Do our students know the evolving influences in this new industrial revolution? Are they well informed as to why the work roles they train to obtain now may be entirely different in 5 years from now? Ironically, how students reflect on and report their college journey success is a direct function of the institution's ability to guide and develop the very skills of reflection and critical thinking. If students declare success, has the institution actually been successful? It is not for the institution to dictate what success is for any one student, however, empowering students

to know the landscape of the future and define their goals and engage in learning experiences that validate those goals is the assignment. The institution should intentionally design a system that empowers students to be curious by challenging thinking habits and developing success competencies as they relate to personal and professional goals. When the mission of student curiosity building is clear, the institutional positionality is clear and can be evaluated and improved.

Secondly, we need to ensure that we are collecting data from all students who have connected with our institution, not just the ones who have succeeded. Understanding the barriers to success will directly inform program innovation and curricular considerations. Typically, institutions are collecting this data from students who have succeeded through a course or through completion of a certificate or degree. An important target audience to survey, however, does not seem to have a clear voice in systems improvement. Assessment of students who stopped out, withdrew from courses, or failed academic benchmarks are equally as important to survey. This population will have information regarding barriers to personal success which can be used to evaluate support services. This group can lend insight toward obstacles in completing courses or programs, which can lend insight into perceptions on college and degree usefulness. These insights can help leaders and college employees at all levels understand the characteristics and experiences of the learner (Shulman, 1987) and ultimately, identify trends that inform how the institution delivers on the intended mission.

Build Curiosity as an Institutional Outcome

As the research indicated, the faculty in this particular college are intentionally administering and designing course activities that build a student's proficiency in expressing an informed point of view and analyzing data to solve problems. This skill building is an important

element in building thinking competence (English, 2016; Facione, 1990; Halpern, 2014; Paul & Elder, 2008). The perceptions of the faculty also noted that that the majority of students are not independent learners, and therefore need individual guidance to successfully achieve academic outcomes. Almost all the study participants noted a level of under-preparedness as result of teaching styles in the high school feeder systems. These systems seem to be preparing students to pass state standard tests, but this preparation is not producing a self-led learner.

An institutional outcome that centers around building self-led learning skills is the single most important recommendation from this research. Faculty cannot be the only source of this skill development, and as such, need assistance from across the institution to co-achieve this outcome.

Creating institutional learning outcomes sets a vision and a road map for the coordination of efforts across the intuition. An institution should work with faculty, academic leadership, and students across all disciplines to gather information on the conceptual elements and direction for learning. Establishing learning outcomes for the institution, as a whole, creates shared vision of success. Once the totality of perspectives is collected, the work of defining and publishing expectations begins. The work of defining aspects of expectations automatically expands opportunities to co-create a common language. Existing frameworks (Paul & elder, 2008) can provide a starting point for identifying competency statements.

Identify Characteristics of a Well-Cultivated Critical Thinker

According to Paul and Elder (2008), the characteristics of the thinker are more important that the demonstration of a skill. If a student cultivates the habit of thinking, answers and skills will be apparent. However, the reverse is not true. Paul and Elder (2008) provide a list of behavioral outcomes that could support a broader and more successful journey in thinking

144

development. Habitual utilization of the intellectual traits produces a well-cultivated critical thinker who can:

1. Raise vital questions and problems, formulating them clearly and precisely;

2. Gather and assess relevant information, using abstract ideas to interpret it effectively;

3. Come to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;

4. Think open-mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and communicate effectively with others in figuring out solutions to complex problems.

Operationalize Area Collaboration and Accountability Across the Institution

Institutional learning outcomes do not have to follow model terminology, specifically. Phrasing and wording should reflect appropriate relevance to the institutional vision. Common language is important in building shared accountability. In addition to reflecting the community, common language builds buy-in for purpose building, and should efforts get off track, the shared language helps create connections and strategies for effort realignment. The language does not need to be complex, however the language should be reflective of the variety of shareholders involved, including students.

Guided discourse should be offered often and be an inclusive invitation. Working to create language alignment allows for exchanges of learning and teaching philosophies. This exercise in buy-in establishes a common, trusted vision that unites all areas of the institution in their higher purpose of education and personal development. Not only can these conversations track the student learning journey, but these conversations can lead to operational innovations, process evaluations, and even removal of unnecessary administrative actions.

Simplifying purpose does not necessarily simplify operational expectations, but if the goal is clear, then identifying activities that do not produce value towards the mission can be adjusted.

The following three sections describe how an institutional outcome (s) for preparing self-led thinking can assist students in their learning journey no matter their preparation levels, goals for their education, nor the discipline they study. This approach can be seen as an equity driver across a variety of intellectual challenges and administration of student learning processes and support. This type of cross-functional support mirrors many of the organizational structure's employers are now using to engage with and maximize their human resource talent.

To know how a cultural thread of agility, and agile thinking, is supported, accepted, and executed across an entire institution, each area would need cross-functional team collaboration must ensure that the correct people are present to share valuable systems perspectives. Many operational and support areas may feel distanced from discussions regarding thought agility for student readiness. If an institution agrees that adopting common student learning outcomes helps guide all operations and learning initiatives, then all areas must understand how these outcomes are delivered within and from their own areas.

For instance, does the financial aid division have best practices to help students think through decisions on paperwork deadlines or applications? Some may report that financial *decision-making and advising* are not the roles of financial aid. However, if our administrative processes are not offered in a way where our students understand how to interact with or maximize these opportunities, are we fulfilling our mission? Are we encouraging retention and persistence? Workshopping how each division, academic or operational provides and executes retention efforts would be an interesting activity across the institution.

Each functional area should be able to represent itself in a cross-functional team initiative to improve student curiosity and agile thinking. Regardless of the area, our mission is to empower students to successfully navigate the services of the institution. Sometimes, faculty and staff will state that they have to "hand-hold" or "do all the thinking" for the students to move them through certain processes. Why is that? Was the student ever shown how to advocate for themselves in this way? Is there an opportunity to empower students through knowledge and guidance for every area that exists in the institution? If so, how do the students know the function of these areas and the guiding mission that supports the daily efforts of college employees? These answers to these questions may be a direct challenge to our stated equity responsibility.

Institutional Mission: Build Conditions that Improve Learning

Institutions must create environments that foster intellectual courage. Experiential learning and curiosity building drives learning and development (Hartung, et al., 2022). In order for our faculty to be successful in creating, fostering, and innovating these learning experiences, the institution must provide robust professional development. Considering that all but one faculty surveyed began their careers as discipline specialists and not educators, institutions must prioritize facilitating shared research and practical applications for developing learning gains.

Invest in Faculty Development

Improving learning outcomes is the main aim of education, and faculty in this research project can point to how they support successful student achievement. This achievement is focused on topical and conceptual knowledge gains. In addition to this effort, our faculty must be aware of how their pedagogical content knowledge (PCK) (Shulman, 1987) influences the student desire for more information. Faculty must be able to discern the types of teaching strategies that support knowing the world around us and the ability to make meaning of our

environments. Constructing an environment that supports self-led curiosity serves as a motivator to develop reasoning skills that create better futures. In a work context, these same skills create and manifest innovation, systems-thinking, and problem-solving.

Faculty professional development that centers around creating educational competence (Shulman, 1987) supports the vision of curiosity building at the classroom level. The faculty must have clear guidance on how to establish explicit learning goals and be equipped with the resources to evaluate effective teaching practices.

Models serve as a starting point to show faculty how to incorporate behavioral outcomes into their program and course learning expectations. Faculty led sessions that define and share specific behavioral outcomes are excellent examples of professional development opportunities and will further the recommendation of consistent language across the institution. Resulting rubrics and activities would serve as part of this research repository and should inform institutional vision and outcome innovation as this work continues.

There is an opportunity to share this work as part of a Quality Enhancement Plan (QEP), but this effort does not necessarily need to be tied to a formal accreditation requirement. Internal innovation towards building self-led curiosity has the potential to build stronger community relationships with those that the college serves. Better outcomes and clear examples of program and student success builds enrollment and fuels program growth opportunities. Regardless of the project governance, institutions must be able to support faculty, tenured, non-tenured, and adjunct with resources that explicitly state classroom strategy best practices and ensure these strategies are being practiced.

Transformational learning has built in processes that chart the future, defines success, and measures our work toward this goal. Assessment of faculty competence must be part of this

initiative. When goals and objectives are clearly (co)defined, assessment becomes an inspiration point for innovation versus an administrative burden. Institutions can alleviate redundant work in assessment with common institutional outcomes and also innovate the promotion and engagement of faculty through this effort.

The content generated as result of this effort should be shared as new faculty join the academic team. Ensuring that onboarding practices are consistent for new faculty and adjuncts can be challenging. The institutional wide adoption of building curiosity should not be for academic students, alone. This mission should serve all administrators and faculty alike and internal processes should support this ethos. As subject matter experts join the academy, these professionals should be trained to infuse their expertise into a professional practice of an educator.

Evaluate and Develop Current Faculty Teaching and Learning Strategies

This study illustrates the importance of teaching topic knowledge versus cultivating learning competence. In the following sections, three specific teaching practices will be discussed. Although this study was small, and not able to be generalized, these sections attempt to provide a link between teaching strategies that do and do not cultivate a self-led thinker.

In addition to assessing current teaching practices against curiosity building, academic leadership must acknowledge that just because a faculty member learns about new pedagogical strategies does not ensure that they change their curriculum or implement new teaching approaches. A specific teach-the-teacher program might ensure that faculty members feel supported and successful in this endeavor and provide the structure and guidance faculty need to grow as an educational professional.

Evaluate Deductive Teaching vs. Inductive Learning Strategies. As the experts in critical

thinking agree, two aspects are equally important for learning gains. Students must be able to

learn terms and apply information, and also build a self-directed habit, or interest in inquiry

(English, 2016; Facione, 1990; Halpern, 1997; Paul & Elder, 2008).

Although not explicitly stated, faculty who participated in the study also mostly agreed

that the disposition toward thinking was an essential element to success. Many mentioned a

noticeable gap in positive dispositions regarding thinking. Many of the study participants spoke

about students gauging why they should complete certain assignments and a general lack of

willingness to engage in classroom discussions. So, faculty did note the importance of this aspect

of knowledge development, but there was little evidence of teaching strategies to improve this

particular issue outside of linking assignments to personal experiences like current events or

career-related contexts. Assessment of thinking aptitude or disposition outside of activity

achievement was not evident.

Most faculty engaged in the process of thinking advancement through *deductive* teaching

practices. This deductive approach to teaching does provide ample assessment activities,

including tests, projects, and papers. The faculty would explain a topic or provide a general rule,

ask the student to interact with an assignment, and then provide feedback on errors in the

application of the material, terms, or concepts.

Deductive teaching takes a broad idea and applies it more specifically (Klauer & Phye,

2008). Consider this a top-down approach to information exchange. Although typically a clear

way to present information like concepts, definitions, and scenarios, a limitation to deductive

teaching methods is that those approaches typically provide students with secondary information.

Students are not necessarily experiencing this learning this concept for themselves. They are

using the assignment instructions (learning resources and faculty guidance) to complete an activity according to the rules and expectations given. They are essentially learning based on someone else's learned experience, not an experience they are self-directing.

As opposed to the deductive teaching approach practiced by many of the faculty surveyed, inductive teaching approaches ask the students to detect ways that the information may be misinterpreted or applied differently. Inductive teaching is more experiential in nature (Klauer & Phye, 2008) and provides students with the autonomy to build their own methods that help them succeed in the activity through self-directed inquiry; this is more of a bottom-up method of learning. This teaching approach encourages students to engage in material to seek the connections to a larger idea. Inductive methods encourage experimentation, observation, and discussion. According to Klauer & Phye (2008), "the use of the procedural inductive reasoning strategy will improve cognitive functioning in terms of (a) increased fluid intelligence performance and (b) better academic learning of classroom subject matter." Inductive learning practices build *curiosity* (Facione, 2020; Krathwohl, 2002; Paul & Elder, 2008).

There may be a link to a perceived unwillingness to interact with a gap in conceptual understanding. If deductive learning asks a student to apply someone else's study methods (a faculty, a case study, a peer), they are not building authentic knowledge for themselves. There is an opportunity for further research on deductive and inductive teaching practices, as deductive methods continue to lead the student learning (a noticeable finding from the study) and inductive practices build self-led learning.

Evaluate Explicit Learning vs. Implicit Learning Strategies. Contrary to the literature (Facione, 2020; Klauer & Phye, 2008; Paul & Elder, 2008; Kurfiss,1988), most of the faculty agreed that explicitly discussing critical thinking seemed unnecessary. Each faculty member at

some point in the interview expressed a careful beginning to the work that gradually reveals to the student their own ability of competence. The faculty speak of creating students' psychological safety throughout their interviews. They spoke of the need to create a safe space where making mistakes was part of the process of learning. Although this approach is thoughtful and caring, the students should be explicitly told that the process of thinking development begins with understanding our bias and our preparation (or lack thereof) to complete a task. It is an opportunity to teach meta-cognition that is an essential competence expectation of experimentation and adaptation. An implicit learning journey builds competence within a specific context, and not the habit of learning to transfer the competence in different contexts.

Faculty perceive mistake-making as a primary correlation to low classroom engagement, course withdrawals, and poor academic achievement. Mostly, the participants do not talk about student learning outcomes. They feel that setting concrete expectations on day one is intellectually threatening to many of their students.

This phenomenon connects directly to the recommendations for developing and publishing institutional outcomes. If the students knew of the ethos of lifelong learning, and the experimentation this requires, perhaps mistake making becomes an explicit, published phase of growth; one that is necessary for understanding self, setting expectations, and succeeding.

This aspect of mistake-making fear may explain the hesitation to interact with classmates in debate and discussion. An opportunity exists for further research regarding student perspectives on activity engagement. Do students have solid thinking skill patterns that they are unwilling to share because of vulnerability or fear of looking unfit for the environment (or other factors)? How does student academic thinking preparation in high school environments affect a

student's competence in thinking in a college environment? How are those environmental expectations different and how does the competence built as a result of that education differ?

Operationalizing Blooms Taxonomy. When probing about how students know that they are engaged in thinking exercises, or perhaps how activity design is intentionally asking for the application of knowledge (synthesize, evaluate, create) (Krathwohl, 2002) all the study participants agree that Bloom's taxonomy provides appropriate *verbs* for describing a student learning process or outcome. Bloom's taxonomy centers around how to solve problems by thinking in increasingly complex ways and is often used in the creation of definable student learning outcomes (Krathwohl, 2002).

Few of the participants explicitly connect Blooms as part of their pedagogy and activity design with their students. Some faculty note that confronting students with educational jargon intimidate students and perceive Bloom's taxonomy as part of this jargon.

All participants stated that course-level student learning outcomes are required to be contextualized through Bloom's taxonomy and are published on their syllabi for every course. Notably, not one of the faculty explicitly relates their teaching methodology to their students, nor discusses Bloom's taxonomy (Krathwohl, 2002) as a guide in higher-order thinking development outside of the published course-level student learning outcomes (SLO).

When asked how students would know that thinking development, as a habit, skill, or for professional problem-solving, was the main aim of the activity, most of the faculty expressed an implied agreement. Most faculty expressed that students know they are coming to college to increase their thinking. In this aspect, cultivating the habit of thinking is not expressed, specifically. This implicit strategy is in direct conflict with strategies that improve educational outcomes (Kurfiss, 1988).

Provide Professional Forecasts of the Future of Work

Both students and faculty must know of the contemporary issues that influence the future of our industry partners. Professionals in healthcare, manufacturing, technology, logistics, hospitality, and business should be partners in shaping the narrative and expectations of the workplace.

Institutions who can provide opportunities for knowledge exchange as it relates to the challenges and innovation associated with the rapid industrialization and infusion of technology will be able to illustrate the importance of critical thinking and adaptive behaviors. There are a variety of ways to encourage this partnership, and students should be encouraged to lead these efforts. Building curiosity from the professional teams our students aspire to join will propel networking events, professional development, and a shared understanding of success.

Summary of Manuscript 3

As automation drastically changes the way we all engage in our work and the research is clear that critical thinking leads to success in both professional and personal applications, educational institutions, regardless of designation, must design the educational journey as more than skill or knowledge *acquisition*. Individual students who build and strengthen the habit of curiosity for lifelong learning will succeed.

Developing and integrating institutional outcomes that center building self-led learning skills is the single most important recommendation from this research. From this institutional mission, teaching faculty and program leadership can collaborate on SLO's that empower students to set and accomplish personal and professional goals regardless of their program of study. Faculty effort in the classroom environment cannot be the only source of this skill development, and as such, need assistance from across the institution to co-achieve this outcome.

Institutional outcomes centered on building curiosity for self-led learning competence may provide an innovation initiative that supports more than just the teaching and learning aspects of the institution. Student services areas that generate explicit policies that support student decision-making and problem-solving with data and advising practices may find that students can (a) know how to utilize the services more richly, (b) contribute to student academic success and degree completion, and (c) model constructive and productive business relationships.

Creating thinking SLO's that focus on the habit of learning provides clarity for operational units as well as unites academic units with others in the same division and across divisions. The overall institution can streamline assessment processes and seek data that helps identify opportunities for growth and investment.

The study revealed that the sample of faculty surveyed at this particular college is effectively building critical thinking skills. They have been able to articulate how they build informed expression and the ability to apply certain concentration-specific terms and concepts to professional applications. The major finding of this study is that although these practices are recommended by researchers (Facione, 1990; Halpern, 1997; Kuhn, 1999) and they are self-reported as done well, topical knowledge application is limited in transferability. We do want our students to apply their knowledge to specific applications, however, as the future of work cannot predict what those actual applications will be (McKinsey, 2019; PEW, 2016; World Economic Forum, 2019), our students must also be able to adapt their thinking outside of the traditional application. To accomplish this broader competence of critical thinking, our faculty must also be competent in creating the conditions where thinking is developed as self-led and the student is

empowered to augment their knowledge as situations change (English, 2016; Facione, 1990; Halpern, 1997; Paul & Elder, 2008).

Developing independent learners and thinkers requires guided practice over time (Facione, 1990). Time is typically condensed in a community college environment, as compared to a four-year institution, which makes the intentional design of learning engagement even more critical to ensure that students move successfully toward their academic and professional goals. Developing independent competence requires guided practice. Institutions must provide professional development centered around teaching frameworks and evidence-based research that provides teaching strategies on how to build thinking gains (Conrad, et al., 2007). In addition to ensuring thinking development strategies are explicit, (Facione, 2020; Klauer & Phye, 2008; Paul & Elder, 2008; Kurfiss,1988) we must consider the power of inductive teaching methods as a primary focus of classroom interaction (Klauer & Phye, 2008). This teaching approach encourages students to engage in material to seek the connections to a larger idea; inductive methods encourage experimentation, observation, and discussion and lead to higher learning gains including increased meta-cognition and learning of academic concepts. Inductive learning practices build curiosity and cognitive growth across all disciplines, making this recommendation a practical strategy to address the skill gap at the center of this problem of practice.

Eight of the nine faculty interviewed were hired because of their professional backgrounds, and outside of institutional professional development workshops, none of these eight faculty members have credentials as a professional educator. Although they are demonstrating a high degree of professional educator competence (Shulman, 1987), enhancing pedagogical skills led by united SLO's can increase faculty effectiveness while innovating

classroom environments. Our responsibility as educators is to provide an environment of learning created through safe spaces that encourage curiosity and discussion. If faculty can shift from focusing on teaching paradigms to effectively creating learning experiences, the students will naturally become accountable for their learning. The habit they build as they practice this curiosity will effectively serve them in all of their endeavors.

As a main aim of education, developing thinking skills has become more important than at any other time in our history. Exponentially, automation and artificial intelligence replace rote skill occupations and many people in our society are suffering great social injustices. The injustices are not new; however, the pandemic has highlighted disparities between white educated workers in the "knowledge" economy and historically underserved communities of color in the "labor" economy. As stewards of and leaders in higher education, we have an obligation to share strategies that foster an environment of intellectual growth that builds adaptable and creative thinking for our students and communities.

Daily, our institutions serve the students who place their trust in us to help them know, discover, and pursue their personal and professional goals. To deliver on this expectation, we must share our knowledge, both academic in nature and in the local context, with each other to ensure the educational journey is equitably designed, promoted, and executed.

This is social justice and a social contract; our students believe that education is a pathway to a better future and that our institution knows how to deliver on that promise. This is the foundational concept that tethers us to equity practices, inclusion, and moreover, stewardship of our practices and policies. Faculty and administrators must focus on practices that produce learning and thinking gains (Conrad, et al., 2007).

The qualitative framework is the right fit for my research purpose and ultimate distribution aims; I believe that by highlighting important underrepresented perspectives, we as professionals can reflect and improve upon our contributions as educational leaders. Our shared platform provides an opportunity to intentionally reconstruct a college environment where all people find a valued voice and a pathway to achieve their dreams. In modeling this practice within our institution, I hope our students feel empowered to model it and encourage it within their communities to the benefit of our local, regional, and global society.

Summary of the Dissertation in Practice

The Carnegie Project on the Education Doctorate (CPED) guides this Dissertation in Practice (DIP). The goal of the Carnegie Project on the Education Doctorate is to prepare scholarly practitioners who can use signature pedagogy to develop and apply practical knowledge to make a positive difference in their communities and institutions. (Carnegie Project on the Education Doctorate [CPED], 2021).

Specific to the University of Mississippi EdD program, this dissertation is framed around "questions of equity, ethics, and social justice to bring about solutions to complex problems of practice" (CPED, 2021). This dissertation attempts to interweave questions of equity, ethics, and social justice throughout the context and research sections as these concepts serve as a lens with which to understand the implications of this problem of practice. This problem of practice is disrupting education as we know it to exist today.

Employers are organizing in matrixed teams, led by those with a variety of operational responsibilities skills. The rapid integration of transformational technologies at work requires employees to have a systems-thinking mindset and the *self-led* ability to adapt as market

demands expand and contract (Baird & Satyanarayana, 2019). Colleges must be able to organize themselves in a way that prepares their students for these workplace expectations.

Institutions must know how they build thinking and learning curiosity habits of the learner as clearly as they teach discipline-specific knowledge. Our future of work is evolving so rapidly that employers and economists struggle to predict the exact job roles of the future (McKinsey, 2019; PEW, 2016; World Economic Forum [WEF], 2019). Workforce experts can, however, predict that employees who can manage quick adaptation to processes and people, will succeed (Association of American Colleges and Universities, 2020; Flores, et al., 2012; National Association of Colleges and Employers, 2020; Skilton & Hovesepian, 2018; Teng & Ma, 2019; US Chamber of Commerce Foundation, 2014; Wilkie, 2019). Students who learn traditional discipline techniques and conceptual models, and not the habits of intellectual growth and adaptation, may find themselves unqualified for the work roles their education promoted (CED, 2021).

Considering this problem of practice, experts agree that developing students who can demonstrate critical thinking has historically been a challenge of higher education (Huber & Kuncel, 2016; Arum & Roska, 2011; Pascarella, et al., 2011). Workforce agencies nationally seem to echo this finding and report that many college students do not demonstrate adequate and contextual critical thinking growth as a result of their education (Committee for Economic Development [CED], 2021; DeSmet, et al., 2020; McKinsey Global Institute, 2019). Employers, both national and local, say that college graduates are underprepared to adapt in the current landscape of work (Flores, et al., 2012; (Gross, 2017; HRO Partners & Younger, 2016; Kyllonen, 2018; Skilton & Hovesepian, 2018; Teng & Ma, 2019; Wilkie, 2019).

We have learned from the dedicated professionals who engaged in this study that their students intentionally interact with a variety of learning activities to build thinking competence. This faculty group report an opportunity for the institution to support student learning behaviors across the entire student experience, not just in the classroom environment. A coordinated, explicitly communicated strategy to empower students with the knowledge of the future of work and the importance of thinking development across all programs is an equity practice.

We know that community college students, in particular, are a varied group of students with vastly different learning styles and levels of experience. Institutions must prepare our faculty to lead the changing nature of the higher education classroom and ensure that sophisticated learning outcomes are explicit, illustrated, and integrated across the learning process, regardless of the student's academic background and goals.

The CPED guiding framework suggests that scholarly practitioners develop a signature pedagogy. As reviewed in the CPED framework, signature pedagogy is a set of practices "used to prepare scholarly practitioners for all aspects of their professional work: 'to think, to perform, and to act with integrity' (Shulman, 2005, p.52). Signature pedagogy includes three dimensions, as articulated by Lee Shulman (2005) (CPED, 2021)

1. Teaching is deliberate, pervasive and persistent. It challenges assumptions, engages in action, and requires ongoing assessment and accountability.
2. Teaching and learning are grounded in theory, research, and in problems of practice. It leads to habits of mind, hand, and heart that can and will be applied to authentic professional settings.
3. Teaching helps students develop a critical and professional stance with a moral and ethical imperative for equity and social justice.

This research and associated recommendations attempted to illustrate how faculty in a mid-south community college teach critical thinking and provides some recommendations for faculty to develop a signature pedagogy around critical thinking for today's modern technology

forward workplace. The context of the research occurs at the classroom level to understand how program faculty organize and contextualize critical thinking as a professional in their discipline.

Knowledge of the classroom environment is essential in the community college context in particular, as the classroom has been known to serve as a primary engagement point for most students (Tinto, 1987). If institutions could begin to shift that relationship and create consistent intellectual support across all areas of the student experience, the spirit of life-long learning and resulting competence development would become a standard expectation for all students.

Once our institutions can construct holistic learning missions and overarching thinking habit outcomes that live across all programs, services, and courses, then our students will build intellectual skills as the ethos of the institution guides this expectation. Our collective work to guide students toward independent learning and autonomy must be reinforced by all areas so our message is clear. Build the habit of self-led critical thinking and the skills you need for success will forever evolve with you. This mission supports ongoing redesign efforts both in curriculum and support services to provide clear learning and institutional engagement practices.

This ongoing redesign is of particular importance as the educational community moves back toward in-person, hybrid, and on-line learning as typical practices after the pandemic. We must ensure that what we learned migrating our educational practices and content to an online format (in addition to the social and economic lessons more fully realized as a result of the pandemic) is not lost as we create the new educational landscape for our students.

As our students learn to build a self-directed habit of learning, they will practice the academic challenges of expressing an informed point of view and solving problems toward a goal or objective. If our students are prepared in this way, the critique of our institutions and the identified skill gap may lessen as our community employment partners see the result of our

collective efforts. Our leadership and support of our students as self-led critical contributors to

the future of work will be a catalyst for community, economic, and social growth.

LIST OF REFERENCES

American Association of Community Colleges (AACC). (2020). Fast facts 2020.

> https://www.aacc.nche.edu/research-trends/fast-facts/

American Association of Community Colleges (AACC). (n.d.). Data points prepared for the

> workforce. https://www.aacc.nche.edu/2017/01/11/datapoints-prepared-workforce/

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich,

> P. R., ... & Wittrock, M. C. (2001). *A taxonomy for learning, teaching, and assessing: A*
> *revision of Bloom's taxonomy of educational objectives, abridged edition*. Longman.

Arum, R., & Roska, J. (2011). *Academically adrift: Limited learning on college campuses*.

> University of Chicago Press.

Arum, R., Eccles, J., Heckhausen, J.,Orona, G., von Keyserlingk, L., Wegemer., C., Wright, C.,

> Yamaguchi-Pedroza, K. (2021). *Ensuring a more equitable future: Assessing student*
> *learning and growth within Higher Education*.
> https://files.eric.ed.gov/fulltext/ED612729.pdf

Baird, A., Satyanarayana, P. (2019). Employer's ratings of importance of skills and competencies

> college graduates need to get hired. *Evidence from the New England region of USA,*
> *61*(5), 622-634. DOI. 10.1108/ET-07-2018-0250

Burning Glass Technologies (2020). New data reveals racial inequity poses the biggest threat to

> lasting recovery and inclusive future of work. https://www.burning-glass.com/new-data-
> reveals-racial-inequity-poses-biggest-threat-lasting-recovery-inclusive-future-work/

Bughin, J., Hazan, E., Lund, S., Dahlström, P., Wiesinger, A., & Subramaniam, A. (2018). *Skill*

> *shift: Automation and the future of the workforce.* McKinsey Global Institute.

Carnegie Project on the Education Doctorate. (2021). The CPED Framework.

    https://www.cpedinitiative.org/the-framework

Committee for Economic Development (2021). A US workforce training plan for the post

    pandemic economy. https://www.ced.org/solutions-briefs/a-us-workforce-training-plan-

    for-the-postpandemic-economy#section4

Conrad, C., Johnson, J., Gupta, D. (2007). *Teaching-for-Learning (TFL): A Model for Faculty to*

    Advance Student Learning. DOl 10.1007 /s 10755-007 -9045-9

De Smet, A., Pacthod, D., Relyea, C., Sternfels, B. (2020). Ready, set, go: Reinventing the

    organization for speed in the post-COVID-19 era. McKinsey.

    https://www.mckinsey.com/business-functions/organization/our-insights/ready-set-go-

    reinventing-the-organization-for-speed-in-the-post-covid-19-era

English, A. (2016). The 'in-between' of learning: (Re)valuing the process of learning. In P.

    Cunningham, & R. Heilbronn (Eds.), Dewey in our Time: Learning from John Dewey for

    Transcultural Practice (pp. 128-143). UCL Institute of Education Press.

Facione, P. A. (1990). Critical thinking: A statement of expert consensus for purposes of

    educational assessment and instruction—The Delphi report. California Academic Press.

Facione, P. A. (2020). Critical thinking: What it is and why it counts. Insight Assessment.

    https://www.researchgate.net/publication/251303244_Critical_Thinking_What_It_Is_and

    _Why_It_Counts

Flores, K., Matkin, G., Burbach, M., Quinn, C., Harding, H. (2012). Deficient critical thinking

    skills among college graduates: Implications for leadership.

    https://onlinelibrary.wiley.com/doi/full/10.1111/j.1469-5812.2010.00672.x

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Pearson.

Gross, R. (2017). Comprehensive economic development strategy. Memphis Area Association of

    Governments. http://maagov.org/wp-content/uploads/2015/11/Part-2-Strategic-

    Recommendations-Revised.pdf

Halpern, D. F. (2014). *Thought and knowledge: An introduction to critical thinking*. Psychology

    Press.

Halpern. (1997). Teaching critical thinking for transfer across domains: Disposition, skills,

    structure training, and metacognitive monitoring. *American Psychologist, 53*(4), 449-

    455. https://doi.org/10.1037/0003-066X.53.4.449

Hardy, B. L., Logan, T., D. (2020). Racial economic inequality amid the COVID-19 crisis. The

    Hamilton Project. https://www.brookings.edu/research/racial-economic-inequality-amid-

    the-covid-19-crisis/

Hartung, F.-M., Thieme, P., Wild-Wall, N., & Hell, B. (2022). Being snoopy and smart: The

    relationship between curiosity, fluid intelligence, and knowledge. *Journal of Individual*

    Differences. https://doi-org.umiss.idm.oclc.org/10.1027/1614-0001/a000372

Heckman, J. J., & Kaust, T. (2012). Hard evidence on soft skills. *Journal of Labour Economics,*

    19 (4), 451-464.

Hirschy, A. S., Bremer, C. D., & Castellano, M. (2011). Career and technical education (CTE)

    student success in community colleges: A conceptual model. *Community College Review,*

    39(3), 296-318. https://doi.org/10.1177/0091552111416349

HRO Partners & Younger Associates. (2016). 2016 Strategic Sector Workforce Analysis. HRO

    Partners. https://hro-

    partners.com/Upload/News/gmacw_strategic_sector_workforce_analysis.pdf

Huber, C., Kuncel, N. (2016). Does college teach critical thinking? A meta-analysis. *Review of Educational Research, 86*(2), 431-468. DOI:10.3102/0034654315605917

Klauer, K. J., & Phye, G. D. (2008). Inductive reasoning: A training approach. *Review of Educational Research, 78*(1), 85-123. https://doi.org/10.3102/0034654307313402

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy. An overview. *Theory into Practice, 41*(4), 212-218. https://doi.org/10.1207/s15430421tip4104_2

Kuhn, D. (1999). A Developmental Model of Critical Thinking. *American Educational Research Association. 28*(2), 16-25. http://www.jstor.org/stable/1177186 .

Kurfiss, J. G. (1988). *Critical thinking: Theory, research, practice, and possibilities*. Washington, D.C: Association for the Study of Higher Education.

Kyllonen, P., C. (2018). Inequality, Education, Workforce Preparedness, and Complex Problem Solving. *Journal of Intelligence, 6*(3), 33. https://doi.org/10.3390/jintelligence6030033

Langston, A., Scoggins, M., Walsh, M. (2020). Race and the Work of the Future: Advancing Workforce Equity in the United States. National Equity Atlas. https://nationalequityatlas.org/research/race-and-the-work-of-the-future

McKinsey Global Institute. (2019). The future of work in America: People and places, today and tomorrow. https://www.mckinsey.com/~/media/mckinsey/featured%20insights/future%20of%20org anizations/the%20future%20of%20work%20in%20america%20people%20and%20place s%20today%20and%20tomorrow/the-future-of-work-in-america-full-report.pdf

National Association of Colleges and Employers. (2020). What is Career Readiness? https://www.naceweb.org/career-readiness/competencies/career-readiness-defined/

National Center for Educational Statistics (NCES). (2021). Nontraditional undergraduates:

Definitions and data. https://nces.ed.gov/pubs/web/97578e.asp

National Governor's Association (2020). Reskilling and recovery network. https://www.nga.org/

National Network of Business and Industry Associations. (2015). Common Employability Skills.

http://www.nationalnetwork.org/wp-

content/uploads/2015/03/Common_Employability_Skills-03-30-15.pdf

National Student Clearinghouse. (2017, February 13). The role of community colleges in

postsecondary success. Community colleges outcomes report.

https://www.studentclearinghouse.org/nscblog/the-role-of-community-colleges-in-

postsecondary-success/

Pascarella, E. T., Blaich, C., Martin, G. L., Hanson, J. (2011). How Robust Are the Findings

of Academically Adrift?, Change: *The Magazine of Higher Learning, 43*(3), 20-24.

DOI: 10.1080/00091383.2011.568898

Paul, R., & Elder, L. (2008). Critical thinking: The nuts and bolts of education. *The Journal of

Optometric Education, 33*(3), 88-91.

Paul, R. & Elder, L. (2010). *The Miniature Guide to Critical Thinking Concepts and Tools*.

Foundation for Critical Thinking Press.

PEW Research Center. (2016). The state of American jobs: How the shifting economic

landscape is reshaping work and society and affecting the way people think about the

skills and training they need to get ahead. https://www.pewresearch.org/social-

trends/2016/10/06/the-state-of-american-jobs/

Powell, G., H. (2020). Current economic issues. Federal Reserve.

https://www.federalreserve.gov/newsevents/speech/powell20200513a.htm

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-23.

Skillman, S., M., Keppel, G., A., Patterson, D., G. & Doescher, M., P. (2012). The contributions of community colleges to the education of allied health professionals in rural areas of the United States. Rural Health Research Center. https://depts.washington.edu/uwrhrc/uploads/RHRC_FR136_Skillman.pdf

Skilton, M. & Hovesepian, F. (2018). The 4th Industrial Revolution: Responding to the Impact of Artificial Intelligence on Business. Palgrave. McMillian.

Tinto, V. (1987). *Leaving College: Rethinking the Causes and Cures for Student Attrition*. University of Chicago Press.

US Bureau of Labor Statistics. (2021). Employment and Earnings Table B-1a. https://www.bls.gov/web/empsit/ceseeb1a.htm

US Chamber of Commerce Foundation. (2014). Managing the talent pipeline: A new approach to closing the skills gap. https://www.uschamberfoundation.org/managing-talent-pipeline-0

Wilkie, D. (2019). Employers Say Students Aren't Learning Soft Skills in College. SHRM.org. https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/employers-say-students-arent-learning-soft-skills-in-college.aspx

World Economic Forum. (2019, April). Health and Healthcare in the Fourth Industrial Revolution: Global Future Council on the Future of Health and Healthcare 2016-2018. http://www3.weforum.org/docs/WEF__Shaping_the_Future_of_Health_Council_Report.pdf

VITA

ANDREA J. CROWLEY

Education and Honors

Phi Kappa Phi Honor Society; 4.0 GPA   2020
MBA, Business Administration, Belmont University, Nashville, TN   1996
BS, Business Administration, Economics and Finance, University of Hartford, CT   1991

Professional Experience

Organizational Development and Leadership Development Consultant,
Self-employed   2009-Present

Consultant with organizations for service improvement, competency development, and employee engagement initiatives. Created and conducted custom leadership and service improvement training programs for a variety of local, national, and global healthcare/medical institutions, manufacturing and logistics organizations, and local non-profits. Consults with institutions of higher education for student development programming and professional readiness competency development.

Contractor, Consultant
Southwest Tennessee Community College. Memphis, TN   Oct 2019-Present

Visioned and facilitate the conceptual framework, pedagogy, and curriculum for student soft-skills training in academic and non-credit applications. Represents the Workforce Development division as a business solutions consultant for program design and facilitation of training for all levels of professional competency development. Promotes institutional solutions for recruitment and retention by connecting local employers to credit programs, creating non-credit to credit pathways, and delivering professional readiness coaching for academic students.

Director of Professional Practices, Assistant Professor, Chair of Professional Practices Division
Memphis College of Art, Memphis, TN   August 2014-Dec 2019

As a result of consulting role, hired as full-time faculty with leadership responsibilities for coordination of a new hybrid Professional Practices division within the college. Co-led cross-functional SACSCOC QEP team to identify strategic goals and key determiners for student

success which resulted in an institution-wide adoption of 10 SLOs. Implemented programs, policies, and assessment that measured student professional and academic success across a variety of curricular and co-curricular applications. Involved in strategic planning initiatives which resulted in the development of a student trajectory framework and curriculum that supported academic and professional success from new student orientation to graduation.

Service on multiple committees allowed redesign of course assessment and implementation of matrixed project assessment framework by introducing student portfolio and capstone presentation evaluation. Managed the BFA Senior Portfolio Presentations capstone project; organized review committees, presentation days, and assessment training. Coached professional portfolio development and public speaking readiness for over 100 BFA candidates.

Adjunct Instructor
University of Memphis, TN   2009-2014

Instructor of Health and Sport Science elective courses. Developed curriculum for lifestyle balance and mental wellness strategies, postural strength coaching, and nutritional guidance. Taught 3 courses each semester, approximately 90 students. Selected as Memphis Tigers Football Yoga Conditioning Coach 2011.

Marketing Director, Training and Development Human Resources Manager
Ingram Entertainment and Ingram Book Company. Lavergne, TN   1993-2001

Corporate trainer for over 350 employees from 1993-1996. Led cultural initiative for employee innovation and development through Zenger Miller Leadership Program. Facilitated onboarding, and development classes for over 10 regional distribution centers and corporate departments. Member of strategic marketing and executive team committee for customer retention and service improvement.

Promoted to Director of sales, marketing, and creative efforts with team of 100+ sales associates across the country for a startup magazine, Beyond the Cover. Promoted books and movies through co-op studio and publisher marketing funding, retail partnerships, and consumer promotional campaigns. Managed team of 11 studio brand managers representing 1M annual studio promotional budgets for retail and sell-through home-video releases.

Hiring Manager, Placement Coordinator
Human Resources, Assets Inc. Nashville, TN   1991-1993

Employment recruiter for temp-to-perm clerical, accounting, and finance positions. Partnered with over 30 companies to learn job requirements and recommend potential applicants. Interviewed, coached, and matched hundreds of candidates with prospective employers. Created a special program to market MTSU college graduates to fill entry-level financial and accounting positions in local market.

Research and Teaching Experience
University of Mississippi

Dissertation: *Critical Thinking Teaching Practices in Community College*. A qualitative research project that explores the role of automation and artificial intelligence in industry and the resulting competency demand for human talent to contribute authentic intelligence for innovation and success in market competition. Authentic intelligence includes self-led thinking for problem-solving with diverse processes and people. This study examined how faculty contextualize and develop critical thinking across the humanities and business divisions of a mid-south community college to address the skill gap perceived by employers on employee readiness after earning a college degree.

Fellowship: Law School Student Affairs Professional Competency Model Creation for the National Association of Law School Student Affairs Professionals (NALSAP) organization. Collaborated with founding NALSAP officer to synthesize student affairs competence expectations for law school environments. This research examines existing professional competency frameworks including the National Association of Student Affairs Professionals (NASPA), the Council of Standards in Higher Education (CAS), and the American Bar Association (ABA) requirements for Character and Fitness. Comparing these standards against institutional member job descriptions and division expectations, an original conceptual framework supported by 11 competencies was created. This illustrated and relational model proposes professional expectations for member institutions to guide organizational development, human resource management, and professional development within a variety of student affairs applications.

Southwest Tennessee Community College

Essential Skills. Authored multiple training modules for CEU corporate and community training programming. Modules include Career Pathway Exploration, Strength Finding, Emotional Intelligence, Business Communications, Process Problem-Solving, Effective Teamwork, Interview Readiness, Professional Branding, Cultural Competence, Financial Literacy, Digital Literacy, Customer Service, and Situational Leadership.

IT QuickStart. Authored and instruct a professional development ½ semester course that introduces students to professionals in the field. The course establishes expectations of soft skill and technical skill infusion that support innovation, manage change in the workplace, and develop a personal brand. This course develops an e-portfolio for each student that represents multiple professional documents for IT Apprenticeship readiness.

Entrepreneurial Start. Developed and instruct a 10-week, 130-hour internship curriculum that coaches students across various small business partner sites to assist micro-entrepreneurs in business development in partnership with the local TSBDA chapter. Once projects are completed, the small business partner is reconnected to the TSBDA to continue exploring services and tools to build the business. Students have weekly coaching sessions that explore professional competencies including work-style self-

assessments, communication, report writing, root cause analysis, and project management.

- Marketing and branding student assignments provide host-site leaders with research to complete a business model canvas, SWOT, and brand value analysis. Targeted marketing consulting provides host sites with the guidance to clarify their mission and vision statements and create a marketing strategy leveraging social media platforms. Students provide branding and marketing proposals to ensure content clarity and consistency of promotion across multiple social media platforms.

- Project management assignments offer local entrepreneurs the opportunity to identify a high-impact project that can be completed within 10 weeks. We coach the students to help the site leadership scope the project, identify key project management milestones and deliverables, and provide weekly report updates.

Industrial Readiness Training. Instructed 40-hour training for advanced manufacturing orientating new recruits to workplace culture and job role expectations. Instructed soft skills including teamwork and communications. Additional topics included technical skills including Math for Industry, Introduction to Industrial Measurements, Basic Machine Operations, and Systems Management.

Custom Corporate Training. Original courses include *Entrepreneurial Leadership & Managerial Courage* Training for Logistics and Hospitality sectors and *Combatting Compassion Fatigue, Compassionate Communications,* and *Design-Thinking for Improved Service* in the Healthcare sector.

Memphis College of Art

FYI: Freshman Year Investigation. Co-authored course redesign and instructed a 1-credit Freshman-level course introducing art students to college expectations in productivity, ideation, contribution, financial literacy, and institutional resources.

P2: Professional Practices. Co-authored and instructed Junior-level project-based course introducing students to professional visioning, public speaking, entrepreneurship, soft skills, and internship preparedness.

Professional Branding. Co-authored a Senior-level course taught by local social and graphic designers. Course taught working with clients, team projects, personal and professional branding, and information literacy and messaging.