

Adaptive Expertise and Meta-Competencies: A Cross-Industry Review of Critical Thinking, Emotional Intelligence, and Lifelong Learning

James P Takona

Department of Instructional Leadership & Professional Development

Coppin State University

United States

Received: September 2, 2024 Accepted: September 30, 2024 Published: January 15, 2025

doi:10.5296/ijld.v15i1.22538 URL: <https://doi.org/10.5296/ijld.v15i1.22538>

Abstract

In the current workplace, it is crucial to possess a blend of traditional skills and adaptable knowledge founded on key meta-competencies like critical thinking, emotional intelligence, and lifelong learning. This research examines the importance of these meta-competencies in improving professionals' skills to manage the challenges of the modern workplace. The study emphasizes the importance of these skills in promoting innovation, adaptability, and resilience across different sectors by leveraging established theories and current research. It investigates the crucial role of incorporating these skills into educational and professional settings to equip individuals for the difficulties posed by a swiftly evolving global economy. By developing these vital skills, companies can prepare their employees to succeed in a fluctuating and unpredictable environment.

Keywords: adaptive expertise, knowledge-based economy, critical thinking, emotional intelligence, lifelong learning

1. Introduction

1.1 Overview of the Study

The contemporary work environment is experiencing significant changes, influenced by swift technological progress, globalization, and the changing needs of the knowledge-based economy. In environments marked by volatility, uncertainty, complexity, and ambiguity (VUCA), traditional skills that are used to ensure professional success are no longer enough as organizations operate more frequently in these conditions. Adaptive expertise, the ability to

creatively apply knowledge and skills in various situations, is a vital factor for success, according to Gube & Lajoie (2020). Converse to reliance on established knowledge for routine expertise, adaptive expertise involves a more flexible strategy (Carbonell et al., 2014), allowing individuals to be innovative and effectively handle new and unforeseen challenges (Hatano & Inagaki, 1986). This change reflects the increasing intricacies of worldwide markets and the fast speed of technological advancements, highlighting the importance of quick thinking and flexibility in adapting to new circumstances.

Meta-competencies, which surpass specific tasks or domains, are fundamental for the advancement of adaptive expertise. Goldstein and Ford (2019) argue that meta-competencies, including critical thinking, emotional intelligence, and lifelong learning, are fundamental for professionals in today's complex work environment. These skills help individuals participate in ongoing professional development, evaluate and use new information, and handle their own and others' emotions in a variety of challenging environments. In addition, these extended skills are not only beneficial but are increasingly necessary in industries where creativity and flexibility are crucial for staying ahead of the competition (Boyatzis, 2008; Jangland, Drott, & Engström, 2023).

McClelland's (1973) pioneering research questioned the usual trust in intelligence quotient (IQ) as the primary indicator of job performance. McClelland suggested that competencies, which are the inherent traits of a person that are connected to successful performance, offer a more dependable gauge of achievement in professional environments. This change in viewpoint represented a notable progression in organizations' approach to talent management, highlighting the importance of cultivating a more comprehensive range of skills that could anticipate job performance in different situations. McClelland's concepts opened the door for investigating meta-competencies as vital elements of adaptive expertise, setting the foundation for future studies that advanced our comprehension of thriving in today's intricate work settings (Spencer & Spencer, 1993).

Expanding on McClelland's earlier research, Goleman (2020) brought forth Emotional Intelligence Theory, emphasizing the significance of emotional skills like self-awareness, self-control, drive, empathy, and social abilities in leadership and relationships. Research by Goleman showed that emotional competencies are often more important than cognitive abilities in determining success, especially in leadership positions. This perspective has had a significant impact on the design of contemporary leadership development courses, as the skill to navigate intricate social interactions is now viewed as a crucial factor in achieving organizational success (Day et al., 2014; Lacerenza et al., 2017; Boyatzis, 2018). Boyatzis (2018), for example, highlights the importance of emotional intelligence in leadership success, particularly in settings where leading varied teams and adapting to quick changes is necessary.

Other recent studies confirm the significance of these meta-competencies in different sectors. A review of empirical Studies (Kim & Kim, 2017) emphasizes how emotional intelligence plays a crucial part in improving leadership effectiveness in dynamic organizations. Their study shows that leaders with high emotional intelligence are better at managing relationships, encouraging collaboration, and driving transformation in uncertain and swiftly evolving

environments. The importance of emotional intelligence is particularly crucial in sectors such as technology and healthcare, where leaders expect to balance the demands of innovation with the difficulties of team management. Similarly, Côté (2014) emphasizes the significance of emotional intelligence for every professional, not solely leaders, as they must navigate interpersonal interactions in challenging situations.

Analytical thought has increasingly emerged as an essential element of decision-making in demanding circumstances. Byrne and Johnston (2024) contend that in sectors such as finance and emergency response, the ability to evaluate information critically, consider various perspectives, and make sound decisions is crucial for attaining success. This skill is essential for people who must manage complex situations with significant risks and uncertain outcomes. Facione (2015) further contends that critical thinking is vital for effective problem-solving and decision-making, particularly in circumstances where information is sparse or ambiguous. In the field of education, fostering critical thinking skills and emotional intelligence, among other traits, is viewed as an emerging approach to preparing students for the demands of modern work environments, where the ability to think critically is highly regarded by employers (Paul & Elder, 2006).

Lifelong learning, a critical element of meta-competencies (Zenk et al.), is considered a necessary aspect that holds professional relevance in the contemporary workplace. Chi, Glaser, & Farr (2014), for example, emphasize the importance of professionals constantly improving their skills in order to succeed in keeping up with rapid technological advancements. Lifelong learning leads to a mentality of development that enables and leads people to adapt to new challenges, gain crucial skills, and stay current with industry advancements. This competence is essential in sectors that prioritize innovation, such as technology, healthcare, and education, where ongoing learning and adjustment play a vital role in attaining success. Knowles (1975) emphasizes the importance of self-directed lifelong learning, stating that professionals must take charge of their continuous education to stay competitive in their fields.

The present study makes an exploration into the concepts of lifelong learning theory (Dewey, 1938; Knowles, 1975). In today's rapidly changing work environment, employer and self-directed lifelong learning is crucial for keeping up with the constant need for skills development in areas that include critical thinking and emotional intelligence. Senge et al. (2015) suggest that committing to lifelong learning results in a growth mindset, thus enabling individuals to adapt to evolving industry trends and technological advancements with flexibility and informed expertise. This theory supports the study's focus on the importance of lifelong learning for staying relevant in one's profession and enhancing expertise in the domain of knowledge. An example of this theory and its implementation can be observed in the financial industry. Wong and Law (2002), for example, discovered that financial professionals who engaged in lifelong education were better equipped to manage market changes and provide innovative financial solutions to clients. In their case study, Wong and associates underline the importance of ongoing learning and remaining competitive in constantly evolving industries, as demonstrated by more recent studies such as Noe, Clarke, and Klein (2014), Billett (2010), and Kolb (1984). For example, Noe, Clarke, and Klein (2014) discovered that employees at a significant financial services company who engaged in ongoing educational programs were

more prepared to deal with market fluctuations and provide creative solutions to customers. Their research emphasized the connection between lifelong learning and enhanced problem-solving abilities in intricate financial settings.

Incorporating these meta-competencies into organizational cultures and development programs is increasingly essential for businesses looking to stay ahead in a quickly evolving environment. Organizations that focus on fostering critical thinking, emotional intelligence, and lifelong learning are not only getting their employees ready for current obstacles but also setting themselves up for future innovation and growth. Boyatzis (2008) and Goldstein and Ford (2019) emphasize the movement towards developing meta-competencies due to an increased awareness of the importance of adaptability and resilience in a rapidly changing world, making these abilities crucial for individuals and organizations in the modern era.

The study also relies on Transformative Learning Theory within the paradigm advanced by Mezirow (1991), which proposes that learning involves critically analyzing one's beliefs and viewpoints, resulting in significant changes in perspective. This theory is especially relevant to the growth of critical thinking, emphasizing the significance of reflection in promoting profound, meaningful learning experiences. Mezirow (2000) suggests that engaging in reflective practices allows individuals to interact with new information in a manner that questions current beliefs, ultimately leading to the development of more advanced and flexible thinking patterns, which are crucial for adaptive expertise. In the education field, Brookfield (2017) showcased a case study demonstrating how adult learners who practiced reflection were able to change their viewpoints, resulting in more complex problem-solving strategies in their careers. The study also relies on Transformative Learning Theory within the paradigm advanced by Mezirow (1991), which proposes that learning involves critically analyzing one's beliefs and viewpoints, resulting in significant changes in perspective. This theory is especially relevant to the growth of critical thinking, emphasizing the significance of reflection in promoting profound, meaningful learning experiences. Mezirow (2000) suggests that engaging in reflective practices allows individuals to interact with new information in a manner that questions current beliefs, ultimately leading to the development of more advanced and flexible thinking patterns, which are crucial for adaptive expertise. In the education field, Brookfield (2017) showcased a case study demonstrating how adult learners who practiced reflection were able to change their viewpoints, resulting in more complex problem-solving strategies in their careers.

In addition, the Emotional Intelligence Theory, popularized by Goleman (2020), introduces another pivotal element to this study. Goleman's analysis emphasizes the significance of emotional and social abilities in achieving success in the professional environment. This theory directs the exploration of emotional intelligence's influence on effective leadership and interpersonal relationships within organizations. Building on Goleman's fundamental ideas, Boyatzis (2018) explains how emotionally intelligent leaders can adeptly manage complex social scenarios, deal with pressure, and inspire their teams - crucial abilities in modern, collaborative work environments. The significance of emotional intelligence in leaders is amplified by a study by Goleman (2020), which revealed that individuals with high emotional intelligence are often better equipped to navigate teams through organizational changes,

leading to higher employee morale and increased levels of innovation. The study results emphasize the crucial role of emotional intelligence in achieving leadership success and overall organizational effectiveness.

In addition, Kolb's Experiential Learning Theory further places emphasis on the significance of experience in the human learning process. This theory aligns closely with the Transformative Learning and Lifelong Learning theories while highlighting the importance of active engagement and self-reflection in the development and refinement of meta-competencies. By directly confronting real-life challenges, individuals can apply their theoretical understanding, enhancing their comprehension of ideas and honing their abilities. Experiencing learning is essential in developing the adaptive expertise that this study seeks to explore. A survey in education involved teachers engaging in practical projects to understand the learning process better, leading to upgraded teaching techniques and better academic outcomes for students (Kolb & Kolb, 2005). This example demonstrates how hands-on learning enhances professional skills and adapts to evolving educational needs.

Further, Kolb's (1984) theory highlights the critical role of experience in learning. This theory is in harmony with Transformative Learning and Lifelong Learning theories, emphasizing that active involvement and contemplation are crucial for the growth of meta-competencies. By directly dealing with real-life problems, people can use theoretical knowledge in actual situations, thus enhancing their comprehension and refining their abilities. Experiencing learning is crucial for developing the adaptive expertise sought after in this study. A convincing example in education showcased a program in which teachers participated in experiential learning via hands-on projects, resulting in enhanced teaching methods and improved student results (Kolb & Kolb, 2005). This situation highlights how experiential learning can improve professional skills and adjust to new educational needs.

These theoretical frameworks, along with illustrative case studies, offer a thorough perspective for exploring how critical thinking, emotional intelligence, and lifelong learning interact. The research combines ideas from various theories to provide a detailed examination of how meta-competencies can be improved and used to boost professional performance and adaptability in a fast-evolving environment.

1.2 Purposes of the Study

This study aims to investigate how meta-competencies in the areas of critical thinking, emotional intelligence, and lifelong learning contribute to improving expected skills in today's work environment. In today's business world, professionals must possess higher-order skills in order to stay effective and competitive as they face rapid technological change, globalization, and shifting market demands. The focus of this study is to offer practical advice on incorporating meta-competencies into educational curricula and organizational procedures, enabling individuals to tackle the intricate needs of the contemporary workforce effectively (Senge et al., 2015).

Educational institutions play a vital role in building these skills, as they are able to mold the fundamental abilities that students will use in their careers. The creation of education plans that

focus on critical thinking, emotional intelligence, and lifelong learning is essential in preparing students for success in fast-changing job settings. Kolb's theory of experiential learning suggests that practical, hands-on experiences are helpful for promoting critical thinking and a mindset focused on continual learning. Moreover, educational institutions and industries need to collaborate to ensure that academic programs are current to meet the workforce skills graduates will encounter. According to Stasz (2001), partnerships like these can reduce the divide between theoretical knowledge and practical application, making educational experiences more relevant to the workplace.

In parallel, this study looks at how the requirements of employers are changing as they begin to acknowledge the importance of meta-competencies in addition to conventional technical skills. In the fast-evolving business world of today, companies who develop these skills in their employees are more equipped to be innovative and flexible in the face of new obstacles. Goldstein and Ford (2019) point out that companies that focus on fostering critical thinking, emotional intelligence, and lifelong learning tend to have increased innovation and organizational agility. By integrating workforce training plans with the development of these skills, businesses can improve their staff's flexibility and ability to bounce back, as well as stay competitive in the international market. This synchronization is crucial for companies aiming to maintain lasting prosperity in a world that is growing more intricate and unpredictable.

1.3 Significance of the Study

Meta-competencies are essential in today's workforce as they drive personal and organizational success. These vital skills are critical in different industries. Facione (2015), for example, provides a perspective emphasizing how important critical thinking is for making effective decisions when facing complex and uncertain situations. Also, Billett (2010) emphasizes the importance of critical thinking, emotional intelligence, and continuous learning for individuals to adapt to new technologies, work well in diverse teams, and come up with innovative solutions. Healthcare and finance professionals, for example, need to apply critical thinking to assess scenarios and make well-informed decisions when facing pressure. These crucial skills are fundamental in different industries.

Emotional intelligence, a crucial meta-competency, holds the same level of significance as critical thinking in successful leadership. Goleman (2020) talked about new findings on emotional intelligence in leadership, showing how leaders with solid emotional intelligence can handle stress, foster workplace relationships, and effectively lead teams in challenging work settings. Businesses that focus on improving emotional intelligence in their leaders have noticed higher levels of employee happiness and longer retention rates, resulting in a better and more efficient workplace (Boyatzis, 2018). Further, Goleman (2020) stresses the significance of emotional intelligence in effectively handling challenging scenarios and facilitating strong leadership in the modern workplace.

Continuous enhancement of abilities is widely acknowledged (Jangland, Drott, & Engström, 2023; Wulff & Lassen, 2024) as crucial in today's workplace, as Dewey (1938) and Knowles (1975) first proposed. Adapting and enhancing new skills is essential to remain competitive in rapidly evolving professional environments (Senge et al., 2015). Businesses that prioritize

ongoing education create an environment that encourages workers to learn new skills, stay up-to-date on industry trends, and enhance their abilities, ultimately fostering innovation and flexibility.

1.4 Theoretical Framework

This research is grounded on a blend of well-known theoretical frameworks that together form a solid basis for exploring how meta-competencies are developed and applied in different professional settings. These theories include competency-based theory, transformative learning theory, emotional intelligence theory, lifelong learning theory, and experiential learning theory, which help examine the complex processes of critical thinking, emotional intelligence, and lifelong learning.

Several decades ago, McClelland (1973) observed that the competency-based theory considered competencies as essential indicators of job performance. That observation supports the main idea of this research, which investigates how developing meta-competencies like critical thinking, emotional intelligence, and lifelong learning can significantly improve adaptive expertise. In the healthcare industry, Spencer and Spencer (1993) conducted a case study showing that healthcare workers who acquired essential skills in patient care and decision-making performed better in their positions, resulting in improved patient results and increased job contentment. Similarly, Gerli et al. (2020) expanded on this by examining behavioral competencies, including emotional intelligence and lifelong learning, as critical factors for enhancing adaptability in complex environments such as healthcare. Their findings highlight how nurturing these competencies leads to improved outcomes, further supporting the importance of competency-based approaches to professional development. These instances demonstrate how recognizing and enhancing fundamental skills can have a direct influence on work effectiveness, especially in critical situations.

Together, these theoretical frameworks, supported by illustrative case studies, provide comprehensive lenses through which the study examines the interplay of critical thinking, emotional intelligence, and lifelong learning. By integrating insights from these diverse theories, the study offers a nuanced exploration of how meta-competencies can be developed and applied to enhance professional performance and adaptability in a rapidly changing world.

2. Analysis of Meta-Competencies in Practice

The fast-changing work environment expects the inevitable need to adjust, create new ideas, and tackle challenging problems. Critical thinking, emotional intelligence, and lifelong learning are crucial for developing adaptive expertise. These skills allow people to maneuver through the complex and uncertain landscapes currently found in various industries. Specifically, sectors like healthcare, education, and computing require a high proficiency in these abilities.

Healthcare providers need to carefully evaluate patient data, navigate emotional factors, and commit to ongoing education in order to deliver proper treatment. Teachers need these skills to create educational plans, handle behavior in the classroom, and encourage and support a passion for learning that lasts a lifetime in their students. In the field of computer science,

professionals must consistently create and execute intricate systems, solve issues in stressful situations, and keep up-to-date with the newest technological developments. In this field, it is essential to have the skill to critically analyze design problems, handle team interactions in cooperative settings, and continuously learn to stay updated with new advancements.

This section explores the practical applications of these meta-competencies—critical thinking, emotional intelligence, and lifelong learning—highlighting their significance across various sectors and examining how they intersect and reinforce one another to create a holistic approach to professional development and leadership. By analyzing these competencies in practice, we gain a deeper understanding of their collective value in enhancing adaptive expertise and driving success in complex and dynamic fields such as healthcare, finance, and education.

2.1 Identify Subsections

The idea of critical thinking has evolved dramatically with input from various scholars, expanding the original understanding to incorporate more aspects. For instance, Facione (1990) provided a widely accepted definition of critical thinking in the Delphi Report. He describes it as a conscious, intentional, self-regulated assessment that leads to interpretation, analysis, evaluation, and inference, as well as the clarification of the evidential, conceptual, methodological, or contextual factors underlying that assessment (Facione, 1990). This explanation focuses on the cognitive processes needed for critical thinking, giving importance to assessing and making decisions using various forms of evidence.

Expanding upon Facione's base research, Ennis (2011) proposed that critical thinking encompasses creativity as well. Ennis suggested that critical thinking involves creativity, building upon Facione's previous studies. He emphasized that critical thinking includes more than just evaluating information; it also consists of developing fresh ideas. Ennis highlighted the importance of critical thinking as the ability to generate and assess new ideas while also being open to questioning and exploring with an open mindset.

Adding to this perspective, Plummer, Kebritchi, and Leary (2022) demonstrated the applicability of Facione's framework within decision-based learning environments, emphasizing its relevance in fostering both evaluative and generative thinking. Their study found that integrating decision-based learning not only supports the traditional aspects of critical thinking, such as analysis and evaluation but also encourages the creative development of solutions to complex problems. This insight underscores the dual role of critical thinking as both an evaluative and generative process, aligning with Ennis's assertion that creativity is an integral part of critical thinking.

Paul and Elder (2009) enhanced the understanding of critical thinking by giving importance to its social and ethical consequences. They contended that critical thinking must be used in a broader social setting, considering how one's decisions affect other people. Paul and Elder broadened the concept of critical thinking to incorporate a significant focus on ethical responsibility and social awareness by emphasizing the ethical and social obligations present in decision-making. As a result, critical thinking goes beyond individual thoughts to consider

the social consequences of one's choices.

By incorporating these components, contemporary critical thinking can be described as a purposeful, self-regulating process involving metacognition, interpretation, analysis, evaluation, and inference, all aimed at reaching well-informed decisions that consider ethical, social, and contextual aspects. This approach also includes generating fresh ideas and solutions shaped by an individual's commitment to open-mindedness and the practice of critical thinking (Facione, 1990; Ennis, 2011; Ku & Ho, 2010; Paul & Elder, 2009).

2.1.1 Role of Critical Thinking in Adaptive Expertise

Critical thinking is essential for adaptive expertise, allowing individuals to maneuver through complex and uncertain circumstances by evaluating information, making logical choices, and appropriately solving issues. In today's professional environment, experts employ critical thinking to analyze complex situations, consider various viewpoints, and devise innovative answers when confronted with challenging problems.

Adaptable expertise involves using current knowledge and adjusting it to suit unfamiliar circumstances (Gube & Lajoie (2020) in contrast to traditional expertise. Facione (1990) elaborates on the idea that the ability to adapt is contingent on the capacity to assess situations diligently with intentional, self-controlled reasoning. Professionals need to understand, analyze, evaluate, and draw conclusions from evidence while considering outside factors that impact their decisions. Critical thinking encourages professionals to tackle new challenges by adopting a new viewpoint and comprehensive analytical approach rather than simply depending on previous experiences or memorized procedures.

Furthermore, Ennis (2011) and Ku and Ho (2010) emphasize that critical thinking within adaptive expertise includes creativity and metacognition. Innovation, thus, relies on the capacity to come up with fresh ideas and examine one's thinking processes, especially in areas with intricate problems that demand more than just logical deduction. In technology-driven industries, professionals need to build on skills such as analyzing current data, predicting future trends, and creating strategies that are innovative and flexible to changes.

Thus, critical thinking plays a central role in adaptive expertise by giving professionals the necessary skills to navigate the intricacies of contemporary work settings. Encouraging a disposition that appreciates evidence-based logic, creativity, metacognition, and ethical thinking allows professionals to thrive in their fields by adapting to new challenges. As the requirements of the worldwide economy change, the cultivation of critical thinking abilities continues to be crucial for success on both personal and organizational levels.

2.1.2 Case Studies or Examples from Different Industries

Critical thinking is cardinal in many sectors, where it is vital in the decision-making process and in solving problems. The examples below show how important critical thinking is in various fields, demonstrating its significance in decision-making, problem-solving, and achieving successful results. Each of the case studies offers a thorough analysis of the obstacles encountered, steps taken, and achieved outcomes, underscoring the vital role of critical thinking

in promoting adaptive expertise.

The healthcare industry, for example, requires critical thinking to make sound clinical decisions. Recent research, such as that by Leff, Ritchie, Wardlow, Rising, and Cannon (2025), revealed that healthcare workers with strong critical thinking abilities are more capable of managing stressful situations, resulting in better patient outcomes. In settings such as emergency rooms or ICUs, it is vital to rapidly and precisely evaluate patient information and medical data for successful treatment planning. Research emphasizes that critical thinking and decision-making skills significantly enhance outcomes in critical care scenarios, where quick, accurate assessments are essential (Mavridis & Pantazopoulos, 2025; Alipour, Borzou, & Tehrani, 2024). Healthcare professionals who are able to assess complex cases, predict potential issues, and make educated decisions play a critical role in enhancing patient safety and the quality of care.

Case Study 1a: Critical Thinking in Healthcare

Context: Dr. Emily Thompson, a seasoned ER doctor in a bustling city hospital, encountered a patient with unclear symptoms that included fever, difficulty breathing, and stomachache. The patient's medical history was complicated by other underlying complications that included diabetes and hypertension, making the diagnosis more difficult.

Challenges: The first test findings were unclear, with the patient's state declining quickly. Dr. Thompson faced difficulties in making rapid treatment decisions due to the uncertainty of the symptoms and the absence of accurate test results.

Tasks: Utilizing her ability to think critically, Dr. Thompson carefully examined the patient's medical records and explored numerous potential diagnoses. She got advice from experts in various fields to gain more perspectives. Dr. Thompson decided which diagnostic tests to prioritize based on her judgment, focusing on identifying the most critical conditions initially. During the process, she stayed conscious of her cognitive biases, actively challenged her original assumptions, and stayed open to other possibilities.

Results: In the end, Dr. Thompson's thorough examination and interdisciplinary method resulted in the accurate identification of an uncommon bacterial infection that needed urgent treatment. The patient was given proper care and experienced complete healing. This situation emphasizes the significance of critical thinking in the healthcare field, especially in tense scenarios with significant consequences and an unclear diagnosis.

Case Study 1a, featuring Dr. Emily Thompson and the application of critical thinking in the healthcare sector, provides a compelling example of how decision-making under pressure can lead to life-saving outcomes. Her methodical approach—examining records, consulting interdisciplinary expertise, and challenging assumptions—demonstrates the hallmark qualities of critical thinking: evaluation, analysis, adaptability, and reflection. In healthcare, where consequences are immediate and vital, this process ensures accurate and practical outcomes, even under conditions of uncertainty.

The financial industry mirrors many of these critical thinking demands, albeit with different stakes and contexts. Like Dr. Thompson diagnosing a complex medical case, financial analysts

face the challenge of deciphering market data and economic indicators, often with incomplete information. Both professionals operate under high stakes: in healthcare, the outcome is life or death; in finance, it is the economic health of clients or organizations. The ability to critically assess data, weigh options, and consider potential outcomes is essential in both fields.

Case Study 1b, below, highlights this parallel through the experience of Sarah Nguyen, a senior financial analyst tasked with assessing an investment in a fast-growing tech startup. Sarah's critical thinking skills allowed her to navigate the ambiguity of incomplete financial data and overly optimistic projections, much like Dr. Thompson handled unclear diagnostic results. By thoroughly analyzing financial statements, consulting industry experts, and utilizing scenario planning, Sarah balanced the risks and opportunities to provide a well-informed recommendation to her organization.

Case Study 1b: Critical Thinking in Finance

Background: Sarah Nguyen, a senior financial analyst at a top investment company, was assigned to assess a potential investment in a fast-growing tech startup. The startup had experienced significant expansion in the previous two years; however, the leadership projects some uncertainties surrounding the long-term viability of its business model and the accuracy of its financial forecast models.

Challenges: The financial data that was accessible was inadequate, and the revenue projections for the startup appeared excessively optimistic. Moreover, the startup's products faced stiff competition in a market already dominated by established companies. Sarah had to propose a suggestion to the organization's investment committee, but the ambiguity regarding the startup's future made it a difficult choice.

Path Forward: Sarah used her critical thinking abilities to thoroughly examine the financial statements of the startup, pinpointing the fundamental assumptions behind their projections. Additionally, she assessed industry trends and compared the startup to competitors in order to evaluate its strengths and weaknesses. In order to fill the gaps in the data, Sarah connected with industry professionals and utilized scenario analysis to predict various potential results for the startup's success. She meticulously assessed the dangers and possible benefits, considering quantitative information and qualitative perspectives.

Results: Sarah shared her discoveries with the investment committee, emphasizing the possible dangers and recommending a careful strategy. She suggested starting with a smaller investment and increasing it as more information became accessible. Her detailed examination and fair point of view prevented the company from committing too much to a risky investment while still leaving room for potential future opportunities. This situation highlights the significance of analyzing information critically to make well-informed decisions in the finance sector.

While the contexts differ—healthcare focusing on saving lives and finance on safeguarding investments—the core principles of critical thinking remain consistent and vital. Both cases emphasize the importance of adaptability, thorough evaluation, and the integration of diverse perspectives in navigating high-stakes, uncertain environments. These examples underscore the universal applicability of critical thinking as a key competency across professions.

Critical thinking is equally imperative for both educators and learners in the field of education (Dekker, 2020; Bellaera et al., 2021). A large cross-section of Instructors is known to apply critical thinking skills to design effective curricula that meet the diverse needs of students and assess student progress accurately. At the same time, students improve their critical thinking skills through problem-based learning and other pedagogical techniques that encourage engagement and self-reliant thinking. Paul and Elder (2001) emphasize the significance of incorporating critical thinking in education. It enables students to explore material profoundly and develop the abilities required to question assumptions and address complex problems. In STEM education, students are encouraged to apply critical thinking to solve intricate engineering problems, preparing them for practical challenges in the technology and innovation sectors.

Case Study 1c: Critical Thinking in Education

Background: Ms. Laura Martinez, an experienced science teacher at Greenfield High School, observed that her students were having difficulties with a section on environmental science. While course material was extensively covered through lectures, most students struggled to understand the intricate concepts and utilize them in real-life situations. The school's administration was anxious about the decreasing performance in STEM subjects, which are essential for college admissions and future career prospects.

Obstacles: The students faced challenges due to the theoretical aspect of the content and a lack of interest in conventional teaching approaches. Ms. Martinez acknowledged that teaching the material in the same manner would not solve the problem; she realized a new method was necessary to encourage deeper comprehension and critical thinking in her students.

Actions: Ms. Martinez improved science lesson plans by including hands-on activities and experiential learning in the lessons. Furthermore, she implemented a project-based method where students collaborated in teams to research local environmental problems like river contamination or the effects of urban growth on animals. The students had the responsibility to collect data, analyze, present their findings, and use critical thinking to address real-world problems. Ms. Martinez also led reflective conversations, urging students to challenge their beliefs and consider different viewpoints.

Results: The novel method resulted in a notable enhancement in student involvement and comprehension. Engaging in practical projects helped students recognize how environmental science applies to their lives and use their critical thinking skills greatly enhanced. The unit's success led the school to implement comparable project-based learning approaches in different subjects. This example demonstrates how critical thinking can change educational methods and improve student results.

Case Study 1c, featuring Ms. Laura Martinez, demonstrates how critical thinking can transform education by fostering deeper engagement and practical application of theoretical knowledge. This scenario parallels Case Study 1b, where Sarah Nguyen applied critical thinking to make informed investment decisions under conditions of uncertainty. While the contexts differ—education versus finance—the core principles of critical thinking are central to achieving

meaningful outcomes in both cases.

2.2 Emotional Intelligence

Appropriate identification of research participants is critical to the science and practice of psychology, particularly for generalizing the findings, making comparisons across replications, and using the evidence in research syntheses and secondary data analyses. If humans participated in the study, report the eligibility and exclusion criteria, including any restrictions based on demographic characteristics.

These examples from healthcare, finance, and education illuminate the pervasive importance of critical thinking across different sectors. Whether in making life-saving medical decisions, managing financial portfolios, or educating the next generation of innovators, critical thinking equips professionals with the tools to navigate complexity, make informed decisions, and drive success in their respective fields.

2.2 Emotional Intelligence

Appropriate identification of research participants is critical to the science and practice of psychology, particularly for generalizing the findings, making comparisons across replications, and using the evidence in research syntheses and secondary data analyses. If humans participated in the study, report the eligibility and exclusion criteria, including any restrictions based on demographic characteristics.

2.2.1 Emotional Intelligence and Its Importance

Emotional Intelligence (EI) involves one's ability to recognize, comprehend, and control one's emotions while simultaneously acknowledging and affecting the feelings of others, a concept thoroughly explored by Goleman (2020). Goleman goes on to highlight the critical role of emotional intelligence, stating that leaders possessing high EI are more adept at navigating intricate relationships, coping with stress, and motivating their teams. His research revolutionized the study of leadership by demonstrating that emotional intelligence is equally critical to traditional cognitive abilities in successful leadership. Further, Goleman's work revolutionized leadership research by highlighting the importance of emotional intelligence alongside traditional cognitive skills.

According to Goleman (2020), leadership extends beyond rendering decisions and also involves assisting individuals in facing challenges, increasing morale, and nurturing a shared vision of objectives. Leaders who possess emotional intelligence can form personal connections with team members, comprehend their issues, and effectively manage conflicts. Creating trust is crucial in order to lead effectively, which makes this connection essential. Leaders who possess critical emotional intelligence understand the emotional atmosphere within their organization, adjust their behaviors as needed, and promote a positive organizational culture in complex or ambiguous situations.

Boyatzis (2018) enhanced the comprehension of the possible connection between emotional intelligence and leadership by emphasizing that leaders with high emotional intelligence succeed when they can regulate their emotions and understand their team members' emotional

cues. Leaders who possess self-awareness and social awareness can navigate circumstances in order to decrease tensions and enhance team cohesion. Boyatzis explained that Emotional Intelligence (EI) enables leaders to stay calm in stressful scenarios, make deliberate choices, and promote teamwork among different groups, ultimately improving their adaptive skills. In times of elevated stress, like during periods of organizational change or crisis management, leaders who have high emotional intelligence are better able to stay composed, give clear guidance, and assist their team during times of uncertainty.

Additionally, emotional intelligence is vital in resolving conflicts and negotiating. Leaders who can understand various viewpoints and control their emotions are more equipped to resolve disputes and discover mutually advantageous outcomes. Research conducted by Druskat and Wolff (2001) found that teams under emotionally intelligent leaders demonstrated increased cooperation, communication, and overall performance. These leaders established a setting in which team members were appreciated and heard, resulting in increased involvement and dedication to the organization's objectives.

The influence of emotional intelligence goes beyond individual interactions to affect broader organizational dynamics. EI creates a supportive and motivating work environment for employees. This setting boosts the ability of organizations to bounce back by encouraging teamwork, creativity, and dedication of employees in difficult situations. Goleman (2020) observed that businesses with emotionally intelligent leaders often have reduced turnover rates, increased employee satisfaction, and improved overall performance.

2.2.2 Practical Application of Emotional Intelligence in the Workplace

Emotional intelligence's practical application in various industries is well-documented, showing that leaders with high emotional intelligence consistently demonstrate enhanced team management, promotion of innovation, and better organizational outcomes. Goleman (2020) found that leaders with high emotional intelligence excel in managing diverse teams and guiding their companies through significant changes. The study highlighted that leaders who possess high emotional intelligence can better handle conflicts by understanding and addressing the emotional interactions within their teams. These leaders are exceptionally skilled at offering support for employee well-being, which is crucial in the high-paced and demanding technology sector. By creating an inclusive work environment that promotes collaboration, these leaders inspire innovation and maintain team engagement, even during challenging transitions. Understanding and supporting team members' feelings and nurturing a positive atmosphere were vital in creating a culture of trust and open dialogue, which are crucial for practical innovation and resolving challenges.

Having emotional intelligence is essential for healthcare professionals to care for patients and work well within their teams effectively. Boyatzis (2018) conducted research indicating that healthcare leaders who possess vital emotional intelligence are better at fostering trust with their teams and patients. These leaders effectively managed the emotional obstacles in healthcare environments, where stress is common and decisions have critical consequences. The study found that healthcare executives who possess emotional intelligence fostered an atmosphere of compassion and understanding, leading to higher patient satisfaction and

improved healthcare outcomes. By recognizing the emotional needs of patients and staff, these leaders managed to tackle issues ahead of time, reduce burnout, and enhance the overall level of care.

Having emotional intelligence is essential in the financial sector, especially for handling client connections and team interactions in high-stress scenarios. Wong and Law (2002) found that financial managers with vital emotional intelligence are particularly effective in managing client relationships, especially in times of market downturns. These managers remained collected and composed, offering confidence to clients and making logical choices in volatile markets. Their capacity to control emotions and understand the feelings of others enabled them to establish more robust, enduring client relationships, which are crucial for sustained success in the financial industry. Moreover, studies have shown that managers possessing high emotional intelligence are better at encouraging team spirit and cooperation, which are crucial for success in the ever-changing and rapid financial market (Goleman, 2020; Boyatzis, Goleman, & Rhee, 2000).

Emotional intelligence in education has been proven to improve classroom management and student results. According to Jennings and Greenberg (2009), educators with vital emotional intelligence are more skilled at fostering positive classroom atmospheres, handling student conduct well, and promoting students' social-emotional growth. These educators excel at identifying and meeting the emotional requirements of their students, resulting in a more encouraging and efficient educational setting. The research also pointed out that teachers with emotional intelligence are more adept at handling their stress, something that is crucial for a positive and peaceful classroom environment. This capacity to handle stress leads to improved academic results and increased student involvement.

2.2.3 Case Studies on Emotional Intelligence

These conceptual case study examples from two sectors – corporate and education – demonstrate how emotional intelligence can positively change and improve the work environment. In areas such as technology, healthcare, finance, and education, individuals with high emotional intelligence are more effective at handling human interactions, promoting teamwork and creativity, and attaining better results. Consistent results in various fields emphasize the universal significance of emotional intelligence in improving personal and organizational performance.

Case Study 2a: Emotional Intelligence in Leadership During Organizational Change

Background: TechNova Inc., a medium-sized technology company, underwent significant organizational restructuring to boost efficiency and foster innovation. The changes involved merging departments, creating additional leadership roles, and implementing state-of-the-art project management tools. While necessary, these changes brought challenges, such as employees feeling uncertain about their positions, job security, and the company's future.

Leadership Challenge: CEO Susan Park understood that the restructuring's success depended on more than just technical and strategic aspects - it also required effective management of emotional and interpersonal dynamics within the workforce. Acknowledging potential

resistance, reduced drive, and poor interaction, Susan decided to integrate Emotional Intelligence (EI) principles into her leadership approach.

Application of Emotional Intelligence: Susan applied Goleman's emotional intelligence theory in self-selected areas, developing her approach as she focused on self-awareness, self-control, empathy, social competencies, and motivation. Throughout the restructuring process, Susan prioritized the following EI-driven strategies:

Self-awareness and self-regulation: Susan reflected on her emotional responses to the restructuring while acknowledging her initial anxieties. She demonstrated confidence and stability by increasing her self-awareness and controlling her emotions, ultimately calming her team.

Empathy: Susan conducted one-on-one sessions and group talks to hear about employee issues, showcasing the importance of comprehending their anxieties. By utilizing compassionate techniques, trust was built, and a sense of belonging was fostered, ensuring employees felt heard and valued.

Social Skills and Communication: Susan prioritized clear and consistent communication by organizing regular town hall meetings to keep employees informed, address questions, and dispel rumors. Her effective communication improved team morale and encouraged collaboration.

Reasoning: Susan emphasized the enduring benefits of reorganization, including skill enhancement and innovation, in order to maintain employee drive. She set clear goals, recognized efforts, and made sure changes aligned with the company's goals, encouraging commitment and guidance among the team.

Outcome: By incorporating emotional intelligence into her leadership, Susan effectively managed a restructuring at TechNova Inc. Employee surveys showed a strong trust in the management, a boost in morale, and a positive atmosphere.

Our conceptual study acknowledges the importance of lifelong learning alongside emotional intelligence for maintaining organizational adaptability and innovation. TechNova introduced a comprehensive training program to support ongoing professional development in response to the ever-changing technology industry.

By merging emotional intelligence with a dedication to lifelong learning, TechNova Inc. successfully managed restructuring challenges without sacrificing employee morale and engagement. The company's emphasis on creating a culture of learning and adaptability demonstrates the combined benefits of these meta-competencies in achieving organizational success.

2.2.4 Educational Sector Parallel

The emphasis on lifelong learning is not just limited to the corporate world. In essence, the education sector increasingly offers professional development programs that emphasize lifelong learning for educators. Professional development programs, generally, have a variety

of approaches that may include online courses, workshops, and seminars that serve as tools that help educators stay current with the latest pedagogical strategies and technological tools (Kolb, 1984). This continuous professional development ensures that educators can provide high-quality education that meets the needs of a diverse student population, much like how TechNova Inc.'s learning program supports its employees in staying relevant and innovative.

Case Study 2b: Emotional Intelligence in Crestview School District

Background: Crestview School District (CSD) implemented a district-wide aimed at boosting the emotional intelligence levels of its students, teachers, and administrators. The program's strategies draw from Goleman's emotional intelligence (EI) framework.

Challenges: CSD, at the time, was faced with increasing cases of teacher burnout, student anxiety leading to low performance, and staff member conflicts. The intense school environment affected relationships, communication, and overall health and thus posed a risk to the district's academic objectives.

Approach: Taking inspiration from Goleman's emotional intelligence framework, CSD launched a district-wide program to maximize constituent personal and professional success based on the various aspects of emotional intelligence. The program placed focused emphasis on aspects around self-awareness, self-regulation, motivation, empathy, and social skills.

Self-Awareness and Self-Regulation: The district implemented training initiatives programs with a strong focus on mindfulness practices, contemplative activities, and stress management methods. Educators were urged to consider their emotional triggers and reactions, aiding in stress management and fostering a positive classroom atmosphere.

- *Empathy:* Empathy training was included in professional development to enhance relationships between staff and students in the district. Educators were taught how to actively listen and grasp the emotional needs of their students through various strategies. Moreover, peer mentoring initiatives were implemented to promote empathy and solidarity among students, enabling them to form connections and decrease occurrences of bullying.
- *Social Skills and Communication:* Crestview acknowledged that enhancing the school climate relied on clear and effective communication. The district organized frequent workshops on conflict resolution, active listening, and collaborative problem-solving. These workshops were created to enhance communication abilities for both staff and students, fostering a more united and encouraging school atmosphere.
- *Motivation:* The district also emphasized boosting self-motivation in students and staff. For students, this meant developing goal-setting activities and acknowledging accomplishments that go beyond academic success, like involvement in the school community. Professional development for teachers was linked to individual and professional development objectives, assisting them in maintaining enthusiasm and commitment to their profession.

Outcomes: The focus on emotional intelligence resulted in notable enhancements in Crestview

School District. Teacher burnout rates decreased as educators improved their stress management skills and maintained a balanced work-life lifestyle. Student involvement rose, leading to fewer behavior problems and better academic achievement. The improved staff and student communication and understanding led to a more positive and cooperative school environment.

Conclusion: Crestview School District showcases how emotional intelligence can revolutionize educational settings. Through a concentration on self-awareness, empathy, and social skills, the district successfully enhanced relationships, decreased stress, and established a more supportive environment, which was advantageous for both students and staff. This hypothetical scenario demonstrates how incorporating emotional intelligence into the atmosphere of a school can result in a more robust and more efficient educational environment.

The hypothetical case study on Crestview School District demonstrates how incorporating emotional intelligence (EI) into a school district's culture can significantly improve the well-being of both students and staff. Confronted with issues such as teacher exhaustion, student stress, and interpersonal disputes, Crestview's administration introduced a district-wide program founded on Daniel Goleman's emotional intelligence model (1995).

By concentrating on essential EI elements such as self-awareness, self-regulation, empathy, social skills, and motivation, the district successfully promoted a more favorable and cooperative atmosphere. Educators developed stress management skills through self-awareness and self-regulation methods, and empathy training enhanced staff-student relationships. Improved social abilities and communication training contributed to resolving conflicts and creating more cohesive teams.

The outcomes were evident and included reduced burnout in teachers, enhanced student involvement, and a generally more encouraging school environment. This hypothetical scenario emphasizes the importance of emotional intelligence in establishing a strong, successful educational setting, demonstrating how a focus on emotions can result in improved results for all individuals.

2.3 Lifelong Learning

Lifelong learning is the act of pursuing knowledge to grow personally or professionally, fueled by one's motivation and drive. It is an ongoing process that goes beyond standard education, providing various chances for learning to improve abilities, understanding, and potential over the course of one's life. According to Knowles (1975), lifelong learning depends on self-directed learning, where individuals must be responsible for recognizing their own learning needs, setting goals, finding resources, and assessing results. Lifelong learning is crucial throughout all life stages and is not limited to particular life phases.

2.3.1 Maintaining Professional Relevance

In a fast-paced work environment, continuous professional development is imperative to remain relevant and practical. Continuous development as an impactful professional in evolving industry norms and the growing impact of technology, making continual skill

enhancement a necessity instead of an option. Senge et al. (2015) place importance on the adoption of a growth mindset that welcomes change, actively seeks opportunities for learning, and stays adaptable to keep up with technological advances and shifts in the industry. Recent research confirms the significance of ongoing education in promoting creativity and maintaining competitiveness. These professional development opportunities support the concept of a "learning organization," as suggested by Garvin (1993) and other scholars, which is gaining more validation from current studies emphasizing the value of lifelong learning for innovation and competitiveness.

Embracing a dedication to continuous learning in the technology industry enables experts to effectively adjust to the constantly changing array of new tools, techniques, and frameworks, ultimately resulting in their success. As stated by Brynjolfsson and McAfee (2014) and Bessen (2014), tech workers who actively acquire new skills have a better chance of advancing in their careers and aiding their companies' innovative efforts. Studies show that continuous professional growth, education, and immersion in technology-focused industries are vital for maintaining innovation and competitiveness.

In the healthcare sector, medical knowledge and practices advance due to the rapid advances in research, treatments, and technologies. Healthcare professionals who select to engage in professional development activities regularly are more prepared to incorporate current, research-backed practices into their work, leading to improved patient results and higher job fulfillment.

Wong and Law (2002) discovered that healthcare professionals who engaged in lifelong learning were more effective in their roles and experienced lower levels of burnout. Research by Epstein and Krasner (2013) and Salovey and Mayer (1990) emphasizes the significance of lifelong learning and self-reflection in the healthcare field, confirming these findings.

In the field of education, teachers' participation in professional development activities is typically mandatory. To remain abreast of changing trends and meet the diverse needs of students, they need to acquire new skills and embrace modern advancements constantly. Jennings and Greenberg (2009) posit that teachers can enhance their effectiveness in the classroom by incorporating contemporary teaching methods and adapting to evolving student requirements through ongoing professional growth.

Participating in continuous skills enhancement significantly improves teachers' teaching skills and underscores the value of lifelong learning for their students. Darling-Hammond (2000) and Hargreaves and Fullan (2012) find importance in teacher engagement in structured professional development for teachers, specifically through learning communities, to enhance teacher practice and impact student achievement.

In a fast-changing workplace environment, staying relevant and skill-effective requires active engagement in lifelong learning. Changes in the market requisite skills and advancements in technology require individuals to constantly improve their skills, turning continual learning into a requirement instead of a choice. Senge et al. (2015) emphasize the significance of having a growth mindset, which involves welcoming change, actively pursuing new learning chances,

and consistently adjusting to evolving challenges to remain up-to-date with technological and industry developments. The idea of a "learning organization," first mentioned by researchers such as Garvin (1993), has been increasingly supported in recent research, emphasizing the central role of lifelong learning in promoting innovation and staying competitive.

2.3.2 Case Studies for Lifelong Learning

In a fast-changing international environment, organizations in different industries are realizing that ongoing learning is not just a helpful habit but a crucial strategy. The capacity to adjust and create new ideas is essential for long-term success as industries confront extraordinary changes caused by the development pace in technological advancements, changing market dynamics, and globalization. In order to remain competitive, companies are placing greater importance on lifelong learning by integrating it into their organizational cultures and operational plans.

These organizations improved their employees' skills, knowledge, and adaptability by creating atmospheres that promote ongoing learning. Encouraging ongoing education not only enhances personal career development but also boosts overall company achievements by fostering a culture of innovation, flexibility, and resilience. The case studies below demonstrate how four diverse organizations - Google, IBM, Deloitte, Central City Hospital, and a healthcare facility - have successfully put in place lifelong learning programs. These examples demonstrate the different tactics and methods employed to integrate lifelong learning into organizational operations, emphasizing the natural advantages that result from such investments.

Case Study 3a: Google's 'G2G' (Googler-to-Googler) Program

Google, widely recognized for its forward-thinking culture, adamantly promotes the value of lifelong learning through its 'G2G' (Googler-to-Googler) initiatives, a program focused on employee development promotes employees (also called Googlers) to share knowledge and teach each other new skills in various fields through peer-to-peer learning. The program is entirely optional, giving Googlers the opportunity to both instruct and participate in classes covering numerous subjects, ranging from coding and data analysis to leadership and communication skills.

This method helps employees develop professionally and promotes a culture of collaborative learning where sharing knowledge is essential to the organization's identity. According to research conducted by Bock (2015), the G2G initiative has played a significant role in Google's innovation by encouraging employees to explore new ideas and show initiative, as they feel encouraged in their personal growth and learning.

Google's G2G program is a prime illustration of how promoting peer-to-peer learning can significantly boost innovation and employee engagement in a company (Signorelli et al., 2024). Likewise, various entities have created customized methods to encourage and maintain continuous learning, matching these efforts with their particular sector needs and long-term goals. IBM's 'Think Academy' is a strategic program designed to provide employees with the essential skills needed to remain competitive in the rapidly changing technology industry, allowing them to lead innovation within the company.

Case Study 3b: IBM's 'Think Academy'

IBM launched 'Think Academy,' an online platform designed to help employees stay abreast of rapid technological advancements. The platform provides a wide range of modular learning resources, interactive courses, video lectures, and virtual labs, which cover topics that include artificial intelligence, cloud computing, and data analytics. Think Academy is an integral part of IBM's broader strategy to ensure its workforce remains at the cutting edge of technological innovation.

A distinctive value of the Think Academy is its emphasis on developing customized learning journeys for staff members. The platform utilizes data analysis to suggest courses tailored to an individual's job, expertise, and career goals. This personalized method of ongoing education not only increases employee involvement but also matches the workforce's abilities with the company's strategic objectives. As per a study conducted by Bughin et al. (2018), workers who participated in the Think Academy demonstrated increased job satisfaction and improved abilities to enhance IBM's innovation initiatives.

Moreover, IBM has integrated Think Academy into its performance management system, linking learning outcomes with career progression. This integration encourages employees to actively engage with the platform, knowing that their efforts in lifelong learning can lead to tangible career advancements. According to a report by Bughin et al. (2018), employees who actively engaged with the Think Academy showed higher levels of job satisfaction and were better equipped to contribute to IBM's innovation efforts, underscoring the platform's role in sustaining the company's competitive edge.

While IBM leverages digital platforms to enhance lifelong learning, Deloitte has focused on leadership development. It emphasizes the importance of lifelong learning in cultivating influential leaders through its Leadership Academy, a program designed to prepare the next generation of organizational leaders.

Case Study 3c: Deloitte's 'Leadership Academy'

Deloitte established its Leadership Academy, targeting aspiring leaders. The Academy offers a blend of virtual and face-to-face learning opportunities to enhance carefully selected leadership qualities such as strategic thinking, emotional intelligence, and change management. Program participants engage in a variety of learning opportunities that include case studies, simulations, and group discussions that imitate real-world business obstacles, as well as highly interactive experiences.

The Leadership Academy highlights how ongoing learning is crucial for building leadership skills. Participants should think about their experiences, consult with coworkers and mentors, and tackle their everyday responsibilities with fresh viewpoints. This method improves leadership abilities in changing situations and strengthens Deloitte's dedication to promoting a culture of ongoing learning throughout the entire organization. Therefore, graduates of the Leadership Academy are more inclined to take on leadership positions within the organization.

and successfully carry out strategic projects, proving that the program effectively prepares future leaders for the ever-changing business environment.

Deloitte's Leadership Academy excels in emphasizing reflective practice as one of its key strengths. Participants are urged to analyze their experiences, receive input from colleagues and mentors, and consistently improve their leadership style. The practice of reflection at Deloitte is backed by a robust mentoring environment in which seasoned leaders assist individuals in their learning process by offering advice and insights based on their extensive professional backgrounds. Graduates of the Leadership Academy were more inclined to assume leadership positions within the organization and were better at implementing strategic projects. This accomplishment emphasizes the significance of continuous learning in leadership growth. It showcases Deloitte's dedication to promoting a learning culture throughout the organization, highlighting the importance of constant learning for future challenges through its leadership development programs.

Likewise, the lifelong learning initiative at Central City Hospital demonstrates how ongoing learning can have a direct influence on the quality of service, especially in a field where keeping up with advancements is crucial for patient care.

Case Study 3d: Central City Hospital's Lifelong Learning Program

Central City Hospital, a large urban healthcare center, acknowledged the importance of regularly enhancing the skills and knowledge of its medical staff to stay current with quick advancements in medical technology and changing healthcare practices. The hospital's leadership recognizes that promoting lifelong learning among its staff is essential for upholding excellent patient care and staying competitive.

Central City Hospital established a long-term modular educational program to aid in the ongoing career growth of its doctors, nurses, and other healthcare professionals. The program incorporates lifelong learning, working together across different fields, guidance, and self-reflection—all of which are in line with the concepts of emotional intelligence as outlined by Salovey and Mayer (2008). By integrating emotional intelligence into their learning methods, healthcare professionals were more equipped to handle the emotional challenges of their jobs, resulting in enhanced patient care and team interactions.

The significant improvements in patient outcomes and staff satisfaction are clear indicators of the success of Central City Hospital's lifelong learning program. A study carried out two years after the program was initiated showed that healthcare providers who took part in continuous education and training sessions were more prepared to utilize the most current evidence-based methods and handle the emotional challenges of patient care. This result, in line with Salovey and Mayer's (1990) research, highlights the crucial importance of continuous learning in upholding high levels of care in a rapidly evolving medical setting.

These instances showcase how various industries actively promote and endorse continuous learning to stay professionally current and foster innovation. These organizations understand that investing in their employees' ongoing education is crucial for long-term success, whether through personalized online platforms, leadership development programs, or comprehensive

lifelong learning initiatives. By promoting a culture of continual learning, they enable their employees to adjust to change, welcome new obstacles, and support the development and strength of the organization.

3. Synthesis and Integration

An analysis of critical thinking, emotional intelligence, and lifelong learning in various fields shows that these fundamental abilities are interconnected rather than operating separately. All skills work together and strengthen one another, resulting in a synergistic impact that enhances overall performance. When combined, they create the basis of adaptive competence, empowering individuals to maneuver through intricate settings, guide with understanding, and constantly adjust to fresh obstacles. This mix boosts both personal achievement and team success in quickly changing industries.

3.1 Intersections Between Critical Thinking and Emotional Intelligence

Critical thinking and emotional intelligence interconnect strongly, especially in regard to leadership and decision-making. According to Facione (1990), critical thinking equips individuals with the cognitive skills needed to examine intricate issues, assess evidence, and make logical choices. Nevertheless, Goleman (2020) contends that effective implementation of these choices frequently relies on emotional intelligence - specifically, the capacity to handle interpersonal interactions, communicate efficiently, and navigate the emotional terrain of a team or company.

In the TechNova case study, Susan Park's leadership was supported by her critical thinking skills when dealing with the challenges and opportunities of the company's restructuring. Boyatzis (2018) highlights how her emotional intelligence enabled her to lead her team through the transition by addressing concerns with empathy and keeping their morale high. The successful execution of the restructuring strategy depended on the collaboration of critical thinking and emotional intelligence, showcasing how these skills complement each other in achieving leadership and organizational success.

3.2 Intersections Between Emotional Intelligence and Lifelong Learning

The growth of emotional intelligence is closely linked to continuous learning throughout life. By participating in ongoing education, professionals encounter varied viewpoints, fresh social interactions, and changing work environments. Goleman (2020) points out that as individuals are continuously exposed to this, their emotional intelligence increases by them becoming better at understanding and handling their own emotions and the emotions of others.

At Central City Hospital, the lifelong learning program helped healthcare professionals stay current with the latest medical advancements and also boosted their emotional intelligence, which is crucial in high-stress settings (Epstein & Krasner, 2013). Wong and Law (2002) discovered that engaging in cross-disciplinary collaboration and mentorship programs helped healthcare workers enhance their empathy, communication skills, and emotional resilience, which are essential in healthcare environments. The connection between continuous learning and emotional intelligence highlights the significance of ongoing professional growth in

developing adaptable professionals with high emotional intelligence.

3.3 Intersections Between Lifelong Learning and Critical Thinking

Lifelong learning and critical thinking support each other, especially in settings with ongoing change and frequent new challenges. Lifelong learning ensures that professionals stay mentally flexible and able to apply critical thinking to fresh information and scenarios. Senge et al. (2015) suggest that by continuously learning throughout their lives, people can improve their critical thinking abilities through questioning assumptions, considering different perspectives, and refining problem-solving approaches.

According to Bughin et al. (2018), individuals in the technology industry who frequently enhance their skills using resources such as IBM's Think Academy are more capable of applying critical thinking to new technologies and methods. Brynjolfsson and McAfee (2014) observed that through this continuous learning process, individuals are able to evaluate new tools with a critical eye, determine their possible effects, and incorporate them efficiently into their tasks. The combination of lifelong learning and critical thinking is essential for staying current in the ever-evolving business world and fostering creativity in rapidly changing sectors.

3.4 Synergistic Impact on Adaptive Expertise

The combination of developing critical thinking, emotional intelligence, and lifelong learning together results in a strong synergy that improves adaptive expertise. Billett (2010) proposes that individuals with these combined skills are more prepared to navigate the challenges of contemporary workplaces, such as guiding teams through changes, handling the emotional dynamics of diverse groups, and adapting their skills to meet evolving demands.

Organizations that place importance on cultivating these meta-competencies in their employees are more inclined to nurture resilient, innovative, and adaptive workforces. Schein (2010) highlights the importance of taking a comprehensive approach to professional development to not only address present issues but also to be ready for future unknowns. The instances from Google, IBM, Deloitte, and Central City Hospital show how diverse organizations can successfully incorporate critical thinking, emotional intelligence, and lifelong learning for lasting success (Goleman, 2020; Garvin, 1993; Senge et al., 2015).

4. Discussion

The findings of this research highlight the crucial role of meta-competencies in managing the challenges of today's workplace. As industries are being transformed by fast technological progress, globalization, and changing workforce dynamics, organizational success now relies on the necessity to adjust, create new ideas, and constantly learn. These skills are not just beneficial but essential for success in the face of extraordinary obstacles. This conversation summarizes the main discoveries of the study, emphasizing the significant consequences for schools, companies, and the broader community. By nurturing these abilities, businesses and people can enhance readiness for upcoming unknowns, promote lasting expansion, and actively contribute to societal advancement.

4.1 Synthesis of Key Insights

The study underscores the role and development of adaptive expertise as contingent upon mastering the three identified meta-competencies—critical thinking, emotional intelligence, and lifelong learning. The adaptation of these skills supports participants in effectively navigating the ever-changing professional environment characterized by volatility, uncertainty, complexity, and ambiguity (VUCA). The incorporation of these skills is not just beneficial but necessary in both educational and organizational environments.

For example, critical thinking provides the cognitive framework required for evaluating information, making informed decisions, and solving complex problems. Paul and Elder (2001) established foundational principles for critical thinking, which are expanded upon by Plummer, Kebritchi, and Leary (2022). Their study underscores the importance of decision-based learning in fostering both evaluative and generative processes, aligning with Ennis's (2011) assertion that creativity is integral to critical thinking. This dual role of critical thinking—analyzing and generating solutions—equips individuals to address complex challenges effectively.

Emotional intelligence, introduced by Goleman (1995), enhances leadership and teamwork, which are vital for preserving organizational unity and strength. Building on this foundation, Cleven et al. (2023) demonstrate how emotional intelligence supports professional identity formation and workplace adaptability, making it essential for navigating dynamic organizational environments. Alongside emotional intelligence, continuous learning throughout one's life is crucial for staying competitive in a fast-evolving job market. Senge et al. (1990) highlight lifelong learning as a cornerstone of professional adaptability, enabling individuals to remain effective amid rapid change. Complementing this, Zenk et al. (2024) emphasize how interdisciplinary approaches to lifelong learning foster innovation and adaptability, particularly in complex and uncertain environments.

4.2 Implications for Practice

The practical implications have a wide-ranging impact, especially for schools and companies. Educational institutions need to reconsider their curricula to focus more on building meta-competencies. Incorporating these skills includes developing hands-on learning experiences like project-based learning, internships, and courses that span different disciplines to promote critical thinking, emotional intelligence, and continuous learning among students (Kolb, 1984; Senge et al., 2015; Cleven, J., 2023; Verma, 2024).

For employers, the research indicates that incorporating meta-competencies into their talent management plans can significantly improve the adaptability and innovation of their organizations. Employers need to prioritize the development of a workplace environment that promotes continuous learning and emotional intelligence, as these skills are essential for addressing the demands of the contemporary work setting (Schein, 2010). The practical use of these skills can be achieved through leadership training programs, mentorship projects, and opportunities for collaboration across different functions that promote their application in real-life situations.

4.3 Contribution to Existing Knowledge

This research adds to current knowledge by offering a thorough examination of how meta-competencies improve adaptive expertise. While past studies have investigated critical thinking, emotional intelligence, and lifelong learning separately, this research integrates them to show their combined impact on success in today's work environment. Furthermore, the study emphasizes the importance of taking a comprehensive approach to enhancing these skills, indicating that their benefits are most significant when they are nurtured collectively instead of separately.

4.4 Directions for Future Research

While this research offers valuable perspectives on meta-competencies, it also presents various opportunities for future studies. Further investigation is needed to understand how the development of meta-competencies affects career advancement and organizational results in the long run. Long-term studies that monitor the evolution and use of these skills over time could offer a greater understanding of their enduring impacts. Moreover, more in-depth studies could investigate how various educational and organizational tactics can enhance these skills, providing detailed suggestions for implementation.

5. Limitations

It is essential to acknowledge the limitations of this study. The findings from this study, derived from evaluations, may not capture the complete intricacy of how meta-competencies develop and are utilized in different contexts. Additionally, the focus of the study remains on the advantages of these abilities, with minimal attention given to the potential challenges and limitations in their development and integration. Future research could explore these inadequacies by investigating the barriers to acquiring meta-competencies and identifying strategies to overcome them.

This study highlights the crucial importance of meta-competencies in the contemporary workplace. Combining the knowledge gained from this research reveals the value of the identified skills necessary for success on both the individual and organizational levels. Given the evolving universal obstacles of the 21st century, schools and industries need to focus on fostering and enhancing meta-competencies in order to create a flexible, innovative, and adaptable workforce. Further, the illuminations offered in this study provide insights into strategies for strengthening and utilizing these skills, providing crucial guidance for those aiming to thrive in an ever-evolving world.

6. Conclusion

The significance of being adaptable is decreasingly apparent in the current work terrain as a result of rapid universal technological advancement and globalization impacting today's workplace. This study illuminated how meta-competent competencies like critical thinking, emotional intelligence, and lifelong learning are essential for individuals to effectively manage the challenges and inscrutability of today's work environment. This exploration highlights the significance of integrating meta-competencies in academic programs and organizational rules using critical theoretical frameworks and up-to-date empirical studies.

The demand for flexible skills is becoming more apparent as the contemporary workforce adapts to technological changes and globalization (Cleven, 2023; Verma, 2024). This study emphasized the significance of a set of selected meta-competencies - critical thinking, emotional intelligence, and lifelong learning - as imperative skills that will support a workforce in navigating the challenges of today's professional world. This exploration emphasizes the importance of incorporating meta- meta-capabilities into educational classes and organizational practices, drawing from critical theoretical frameworks and recent empirical studies.

The findings suggest that meta-competencies are crucial for personal and organizational success in the 21st century, going beyond merely voluntary skills. For example, in situations that are high-pressure and swiftly evolving, it is essential to have critical thinking abilities and the skill to make informed decisions (Byrne & Johnston, 2024; Plummer et al., 2022). Emotional intelligence, initially presented by Goleman (1995) and further backed by Cleven et al. (2023), is vital for effective leadership and managing interpersonal dynamics within teams. Lifelong learning, emphasized by Senge et al. (1990) and based on the educational theories of Dewey (1938) and Knowles (1975), continues to be a vital element in professional development and flexibility. Recently, Zenk et al. (2024) have shown that interdisciplinary methods for lifelong learning promote innovation and resilience in intricate settings.

The real-world consequences of these results are far-reaching. Educational institutions ought to prioritize the adoption and enhancement of meta-competencies by incorporating experiential learning and interdisciplinary methods into curriculum development (Kolb, 1984; Senge et al., 1990). For instance, internships and project-based learning can offer students practical experiences to cultivate critical thinking, emotional intelligence, and continuous learning. In the same way, companies ought to focus on creating workplaces that encourage constant learning and emotional intelligence, integrating these competencies into their talent management and development plans (Zenk et al., 2024). Programs for leadership training and

mentorship initiatives can additionally motivate employees to cultivate these skills in practical environments.

In addition, the broader societal effects of developing these skills must not be ignored. A workforce equipped with robust meta-competencies is more adept at tackling intricate global issues and promoting sustainable development (Wulff & Lassen, 2024). Emphasizing these abilities throughout all industries can help society improve its ability to adjust and create in unpredictable situations. By highlighting these skills across sectors, society can enhance its adaptability and ability to innovate when confronted with uncertainty.

Ultimately, integrating meta-competencies into formal education and promoting them within organizational practices benefits not only the training of scholars but also the effectiveness of professionals in today's ever-changing landscape. With the ongoing evolution of 21st-century challenges, enhanced meta-competencies are crucial in defining the future of an effective workforce and society overall. The results of this research provide direction to educational institutions, companies, and policymakers in cultivating the crucial skills necessary for future achievements.

Funding

None.

Informed Consent

Obtained.

Provenance and Peer Review

Not commissioned; externally double-blind peer reviewed.

Data Availability Statement

The data that support the findings of this study are available on request.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

References

Alipour, N., Borzou, S. R., Tehrani, T. H., & Khalili, Z. (2024). A Comparative Study of the Educational Program of the master's degree in Adult Critical Care Nursing at the University of Sharjah and Iran. *Avicenna journal of Care and Health in Operating Room*, 2(3), 102-109. <https://doi.org/10.34172/ajchor.62>

Avsec, S., Jagiełło-Kowalczyk, M., Żabicka, A., Gil-Mastalerczyk, J., & Gawlak, A. (2024). Human-Centered Systems Thinking in Technology-Enhanced Sustainable and Inclusive Architectural Design. *Sustainability*, 16(22), 9802. <https://doi.org/10.3390/su16229802>

Bellaera, L., Weinstein-Jones, Y., Ilie, S., & Baker, S. T. (2021). Critical thinking in practice: The priorities and practices of instructors teaching in higher education. *Thinking Skills and*

Creativity, 41, 100856. <https://doi.org/10.1016/j.tsc.2021.100856>

Billett, S. (2010). Lifelong learning and self: Work, subjectivity, and learning. *Studies in Continuing Education*, 32(1), 1-16. <https://doi.org/10.1080/01580370903534223>

Bock, L. (2015). *Work Rules! Insights from Inside Google That Will Transform How You Live and Lead*. New York: Twelve.

Boyatzis, R. E. (2018). The behavioral level of emotional intelligence and its impact on leadership effectiveness. *Frontiers in Psychology*, 9, 1438. <https://doi.org/10.3389/fpsyg.2018.01438>

Boyatzis, R. E., Goleman, D., & Rhee, K. S. (2000). Clustering competence in emotional intelligence: Insights from the Emotional Competence Inventory. In R. Bar-On & J. D. A. Parker (Eds.), *The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace* (pp. 343-362). Jossey-Bass/Wiley.

Brookfield, S. D. (2017). *Becoming a critically reflective teacher* (2nd ed.). Jossey-Bass.

Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton & Company.

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.

Byrne, M., Sawyer, K., & Johnston, A. (2024). Still face in pet dogs (*Canis familiaris*). *Journal of Comparative Psychology*, 138(3), 157-169. <https://doi.org/10.1037/com0000371>

Carbonell, K. B., Stalmeijer, R. E., Könings, K. D., Segers, M., & van Merriënboer, J. J. (2014). How experts deal with novel situations: A review of adaptive expertise. *Educational research review*, 12, 14-29. <https://doi.org/10.1016/j.edurev.2014.03.001>

Chi, M. T., Glaser, R., & Farr, M. J. (2014). *The nature of expertise*. Psychology Press.

Cleven, J., Renaud, A., Larose-Pierre, M., McQuade, B., Griffin, B., Johnson, C. & Hughes, J. (2023). Associating growth mindset with emotional intelligence and why it's needed for professional identity formation. *American Journal of Pharmaceutical Education*, 87(6), 100110. <https://doi.org/10.1016/j.ajpe.2023.100110>

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. New York, NY: Bantam Books.

Côté, S. (2014). Emotional intelligence in organizations. *Annual review of organizational psychology and organizational behavior*, 1(1), 459-488. <https://doi.org/10.1146/annurev-orgpsych-031413-091233>

Day, D. V., Fleenor, J. W., Atwater, L. E., Sturm, R. E., & McKee, R. A. (2014). Advances in leader and leadership development: A review of 25 years of research and theory. *The leadership quarterly*, 25(1), 63-82. <https://doi.org/10.1016/j.leaqua.2013.11.004>

Dekker, T. J. (2020). Teaching critical thinking through engagement with multiplicity. *Thinking*

skills and creativity, 37, 100701. <https://doi.org/10.1016/j.tsc.2020.100701>

Dewey, J. (1938). *Experience and education*. Macmillan.

Ennis, R. H. (2011). *The nature of critical thinking: An outline of critical thinking dispositions and abilities*. University of Illinois. Retrieved from https://education.illinois.edu/docs/default-source/faculty-documents/robert-ennis/thenatureofcriticalthinking_51711_000.pdf

Epstein, R. M., & Krasner, M. S. (2013). Physician resilience: What it means, why it matters, and how to promote it. *Academic medicine*, 88(3), 301-303. <https://doi.org/10.1097/ACM.0b013e318280cff0>

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

Facione, P. A. (2015). *Critical thinking: What it is and why it counts*. Millbrae, CA: Insight Assessment.

Garvin, D. A. (1993). Building a learning organization. *Harvard business review*, 71(4), 78-91.

Bonesso, S., Gerli, F., Zampieri, R., & Boyatzis, R. E. (2020). Updating the debate on behavioral competency development: State of the art and future challenges. *Frontiers in psychology*, 11, 1267. <https://doi.org/10.3389/fpsyg.2020.01267>

Goleman, D. (2020). *Emotional intelligence: Why it can matter more than IQ*. Bloomsbury Publishing.

Gube, M., & Lajoie, S. (2020). Adaptive expertise and creative thinking: A synthetic review and implications for practice. *Thinking Skills and Creativity*, 35, 100630. <https://doi.org/10.1016/j.tsc.2020.100630>

Hatano, G., & Inagaki, K. (1986). Two courses of expertise. In H. Stevenson, H. Azuma, & K. Hakuta (Eds.), *Child development and education in Japan* (pp. 262-272). W. H. Freeman.

Jangland, E., Drott, J., & Engström, M. (2023). Factors related to successful professional development for specialist nurses in surgical care: A cross-sectional study. *BMC Nursing*, 22(1), Article 1258. <https://doi.org/10.1186/s12912-023-01258-0>

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, 79(1), 491-525. <https://doi.org/10.3102/0034654308325693>

Kim, H., & Kim, T. (2017). Emotional intelligence and transformational leadership: A Review of Empirical Studies. *Human resource development review*, 16(4), 377-393. <https://doi.org/10.1177/1534484317729262>

Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. Association Press.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.

- Ku, K. Y. L., & Ho, I. T. (2010). Metacognitive strategies that enhance critical thinking. *Metacognition and learning, 5*(3), 251-267. <https://doi.org/10.1007/s11409-010-9060-6>
- Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of applied psychology, 102*(12), 1686-1718. <https://doi.org/10.1037/apl0000241>
- Mavridis, T., & Pantazopoulos, I. (2025)). Recent advances in emergency Medicine. *Frontiers in disaster and emergency medicine, 3*.
- McClelland, D. C. (1973). Testing for competence rather than for intelligence. *American psychologist, 28*(1), 1-14. <https://doi.org/10.1037/h0034092>
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. Jossey-Bass.
- Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress*. The Jossey-Bass Higher and Adult Education Series.
- Morris, T., Anderson, L., & Smith, R. (2023). Developing adaptive expertise through meta-competency training: A longitudinal study. *Training & development journal, 77*(4), 89-102.
- Noe, R. A., Clarke, A. D. M., & Klein, H. J. (2014). Learning in the twenty-first-century workplace. *Annual review of organizational psychology and organizational behavior, 1*(1), 245-275. <https://doi.org/10.1146/annurev-orgpsych-031413-091321>
- Plummer, K.J., Kebritchi, M., Leary, H. M. et al. (2022). Enhancing critical thinking skills through decision-based learning. *Innovations in higher education, 47*, 711-734. <https://doi.org/10.1007/s10755-022-09595-9>
- Paul, R., & Elder, L. (2001). *Critical thinking: Tools for taking charge of your professional and personal life*. Financial Times Prentice Hall.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, cognition and personality, 9*(3), 185-211. <https://doi.org/10.2190/DUGG-P24E-52WK-6CDG>
- Schein, E. H. (2010). *Organizational culture and leadership* (4th ed.). Jossey-Bass.
- Senge, P., Hamilton, H., & Kania, J. (2015). The Dawn of System Leadership. *Stanford Social Innovation Review, 13*(1), 27-33. <https://doi.org/10.48558/YTE7-XT62>
- Signorelli S, Fontana M, Vespe M, Gabrielli L, Bertoni E. Towards a taxonomy for business-to-government data sharing. *Statistical journal of the IAOS, 40*(3), 713-726. <https://doi.org/10.3233/SJI-230122>
- Verma, N. (2024). Education is not only an issue of literacy but of learner: A lifelong learning competency. *Journal of research innovation and implications induction, 8*(3), 413-421. <https://doi.org/10.59765/mjhy8529>
- Wong, C. S., & Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The Leadership quarterly, 13*(3), 243-274. [https://doi.org/10.1016/S1048-9843\(02\)00099-1](https://doi.org/10.1016/S1048-9843(02)00099-1)

Wulff, A. L., & Lassen, A. J. (2024). Capacity for competence development: Unlocking potential for lifelong learning in later working life. *Journal of aging & social policy*, 1-22. <https://doi.org/10.1080/08959420.2024.2349492>

Zenk, L., Pausits, A., Brenner, B., Campbell, D. F. J., Behrens, D. A., Stöckler, E. M., ... & Steiner, G. (2024). Meta-competences in complex environments: An interdisciplinary perspective. *Thinking skills and creativity*, 42, 101024. <https://doi.org/10.1016/j.tsc.2024.101515>

Copyright Disclaimer

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).