



## **A VUCA- Ready Workforce: Exploring Employee Competencies and Learning and Development Implications**

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## A VUCA-Ready Workforce: Exploring Employee Competencies and Learning and Development Implications

### Abstract

**Purpose.** I aim to develop an employee competency framework for a VUCA (volatility, uncertainty, complexity, ambiguity) environment, and propose learning and development (L&D) interventions for organisations and employees to develop competencies for thriving in a VUCA environment.

**Design/methodology/approach.** The framework synthesis method was used to determine employee competencies that are essential in a VUCA world.

**Findings.** I identified 10 competencies that are essential for employee development in a VUCA world. I categorised these employee competencies as cognitive (cognitive flexibility, agility mindset and personal ambidexterity), cross-cultural (cross-cultural intelligence and cross-cultural collaboration), analytical (creativity and complex problem solving), and personal effectiveness competencies (personal resilience, continuous learning, and adaptive mindset).

**Research implications.** The proposed competencies could be used for the personal development of employees and organisations. The VUCA competency framework developed in this study includes behavioural dimensions for each competency, which could be used in self-assessment, recruitment and selection, and talent and performance management. Furthermore, I propose L&D interventions required for developing these competencies. Overall, this study contributes to human resources development in the VUCA era by proposing the development of specific individual competencies as necessary conditions for survival and growth.

**Originality/Value.** VUCA competencies empower employees to not only survive but also thrive in an unpredictable and rapidly changing world. By incorporating these competencies in L&D interventions, organisations can help employees develop the necessary competencies to thrive in a VUCA environment, thus contributing to their personal and organisational success.

**Keywords:** VUCA, Competencies, Learning, Development, Training, Framework Synthesis

## Introduction

In recent years, organisations have been confronted with significant and unforeseen events such as financial crises, the COVID-19 pandemic, geopolitics, and trade conflicts, all of which have had profound impacts on the global economy and society as a whole (Baran and Woznyj, 2021; Bennett and Lemoine, 2014; El Hathat *et al.*, 2023). Scholars and practitioners are increasingly using the acronym VUCA (volatility, uncertainty, complexity, and ambiguity) to refer to these dynamic environmental changes (Bennett and Lemoine, 2014). The term VUCA is now frequently used to describe the ever-shifting external landscape that directly or indirectly affects business operations.

In a VUCA world, it is imperative for individual employees to learn and develop new competencies (Nowacka and Rzemieniak, 2021). Failing to do so can lead to a range of challenges, from career stagnation and obsolescence to a diminished ability to thrive in rapidly changing environments (Kim *et al.*, 2023). Conversely, the active pursuit of competency development offers numerous benefits such as enhanced adaptability, problem-solving capabilities, competitiveness in the job market, and a broader skill set (Bourne, 2021). It also contributes to personal and professional growth, innovation, and resilience. Ultimately, both individual employees and organisations stand to gain significantly from a commitment to continuous learning and skill development in a VUCA world.

In today's VUCA environment, individuals face considerable pressure to adapt to various scenarios and secure their own survival and growth. In this dynamic world, individuals must continuously confront innovation, complexity, and change to achieve personal goals and maintain their own relevance in challenging conditions (Dima *et al.*, 2021). Therefore, to ensure personal success and resilience, individuals must proactively develop a new set of competencies that align with the rapid pace of change and complexity in their surroundings. Traditional competency frameworks do not include competencies that help individuals navigate unpredictable and ambiguous environments. The literature on competencies is dispersed and originates from different fields such as organisational psychology, strategy, and general management; competencies may be technical, trade-specific, job-specific, or industry-specific (Shet *et al.*, 2017). In the VUCA world, employees need to navigate not only organisational challenges but also the personal challenge of staying relevant. Consequently, there is a pressing need for individuals to cultivate these competencies in order to thrive in such an environment (Nowacka and Rzemieniak, 2021).

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3 VUCA serves as a framework to describe the demanding conditions and circumstances within  
4 which organisations function (Bennett and Lemoine, 2014). Volatility refers to the  
5 unpredictability and instability of change, uncertainty pertains to the lack of foresight on future  
6 events and their consequences, complexity corresponds to the intricate interconnections that  
7 form a complex web of information and procedures, and ambiguity signifies the absence of  
8 historical precedent for predicting outcomes because of limited knowledge and understanding  
9 of the causes and effects of events and their interrelationships (Bennett and Lemoine, 2014).

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16 Organisations are affected by a multitude of factors such as technological advancements,  
17 societal shifts, and geopolitical changes. Literature discussions tend to focus on the broader  
18 context rather than the specific employee capabilities necessary in the evolving VUCA  
19 landscape. Consequently, there is a noticeable gap in the understanding of the competencies  
20 that employees need for effective operation in the VUCA world (Taskan *et al.*, 2022). Although  
21 scholars have acknowledged the absence of discourse on functional capabilities, a  
22 comprehensive perspective from stakeholders is not yet available. As a first step towards filling  
23 these research gaps, I attempt to find answers to the following research questions:

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31 *RQ1: What are the critical competencies that employees must possess in a VUCA world?*

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*RQ2: What are the implications of VUCA competencies for employee Learning and  
Development (L&D) in organisations?*

Through this study, I emphasise the significant value of establishing a VUCA competency framework as a roadmap for the development of individual employees in a VUCA world. I create a comprehensive framework of VUCA competencies for employees, which is essential in the current landscape, thus making a significant contribution to both theory and practical applications. The primary focus of this study is on the crucial realm of employee development for these competencies through an L&D agenda. I extend the proposed competency framework by including behavioural dimensions of competencies, which are necessary for acquiring and nurturing managerial talent in human resource development. The outcome of this study will help academia, consulting, industry, and society to create human capital that is relevant to the VUCA world. I use human capital as the theoretical underpinning and framework synthesis as the methodological approach to develop the framework, thus laying the foundation for future research in this area from the employee, L&D, and organisational perspective.

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3 In the VUCA era, the nature of employment has undergone a profound transformation. Industry  
4 is witnessing the emergence of a gig economy and freelancing. Automation and technology  
5 have redefined the job market and displaced routine tasks, thus highlighting the need for  
6 specialised skills in fields such as data analytics and artificial intelligence (AI). The COVID-  
7 19 pandemic accelerated the shift towards remote and flexible work arrangements, enabling  
8 employees to work from anywhere. These trends in human capital reflect the changing nature  
9 of work, education, and skills required in different eras. In future, human capital will continue  
10 to evolve in response to technological, economic, and societal changes.  
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18 Human capital theory as an economic and sociological concept emphasises the importance of  
19 human resources, skills, knowledge, and abilities in driving economic growth and productivity  
20 (Becker, 1964). Human capital refers to the collective knowledge, skills, experience, and  
21 abilities possessed by the workforce within an organisation. It is often considered an intangible  
22 asset that can be developed, improved, and invested in to yield long-term benefits. The  
23 discussion of human capital theory in the context of employee competencies involves  
24 examining how the skills and capabilities of individual employees contribute to the overall  
25 success and competitiveness of organisations. Competencies encompass a combination of  
26 behaviours that are crucial for achieving desired results and outcomes (Bartram, 2005). These  
27 behaviours are observable and result from a blend of knowledge, skills, and attitudes (KSAs),  
28 ultimately contributing to superior job performance (Allen *et al.*, 2018; Boyatzis, 2008;  
29 Campion *et al.*, 2020; Shet *et al.*, 2019; Spencer and Spencer, 1993). In today's rapidly  
30 changing business environment, the competencies of employees play a crucial role in an  
31 organisation's ability to adapt and stay competitive. Human capital theory suggests that  
32 employees with valuable competencies are more marketable and can command higher wages  
33 and better benefits (Mincer, 1974). When individuals possess the necessary competencies for  
34 their roles, they are more likely to excel in their tasks, meet objectives, and contribute to their  
35 organisation's success (Campion *et al.*, 2011). The cultivation of a diverse set of competencies  
36 is an investment in one's future and can lead to greater opportunities and personal fulfilment  
37 as these competencies become a crucial asset for individuals navigating VUCA challenges  
38 (Wolanin, 2022). Competent employees who possess the right skills and capabilities are well  
39 equipped to navigate these challenges, ultimately contributing to an organisation's resilience  
40 and success in such environments.  
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## Research Design: Framework Synthesis Approach

As employee competencies in the context of VUCA is a new topic of interest, the literature on the topic is scarce. I used the integrative review method to understand the challenges in a VUCA world and to identify emerging employee competencies in this context. Within this method, I adopted the framework synthesis approach to uncover these challenges and propose a framework for VUCA competencies. Given that VUCA competencies is a relatively novel topic that has not undergone comprehensive review, the integrative review was likely to result in an initial or preliminary conceptualisation of the subject, including the development of a new model or framework, rather than a reconfiguration of existing models (Brunton *et al.*, 2020; Shet *et al.*, 2021; Torraco, 2005). The synthesis process involves blending existing ideas with fresh insights to present the topic or issue in a novel and clearer manner.

<Insert Figure 1: Framework Synthesis Method>

Framework synthesis as a method is used to perform integrative reviews that delve into the complexities associated with employee competencies in VUCA environments. It is derived from framework analysis, a technique that was developed by Ritchie and Spencer (1993) for analysing primary research data and was originally designed to address policy-related concerns. Framework analysis provides a structure that can be used to collate and organise different components of an assessment, a process called “framework synthesis” (Carroll *et al.*, 2011). The stages of framework synthesis align with the systematic review process, although the steps and processes may overlap to some extent. I chose framework synthesis due to its distinct advantages over traditional systematic review methods, which tend to be inflexible. Framework synthesis offered me the flexibility to focus on the research questions through an iterative process until the review was complete. The method comprises five stages: familiarisation, framework selection, indexing, charting, and mapping and interpretation (Fig1) (Shet *et al.*, 2021).

During the familiarisation phase, reviewers first acquaint themselves with current discussions and concepts related to the subject by drawing from various sources. They identify an appropriate framework—a conceptual framework, a policy framework, a logic model, a causal chain, or an established theory—that could potentially elucidate the challenges at hand. In the context of this study, after gaining a comprehensive understanding of VUCA and its scope, the reviewer had to comprehend the challenges of VUCA in organisations. Due to the multifaceted nature of these challenges, it may not be feasible to find all the answers solely within the human

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3 resource management (HRM) domain. Therefore, I expanded the familiarisation stage to  
4 encompass not only HRM but also other domains so as to obtain evidence that highlighted the  
5 significance of addressing VUCA-related challenges in organisations.  
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9 In the framework selection phase, I conducted a review of the literature to identify a suitable  
10 conceptual framework that could apply to the studies within the scope of my research. A  
11 purposive search strategy was used to identify studies that could address the research questions  
12 and the corresponding scope. **A systematic search of the keyword “VUCA” in the Web of  
13 Science (WoS) and Scopus databases yielded 368 and 244 papers, respectively.** To ensure  
14 consistency and transparency in evaluating all the retrieved results, I screened each of these  
15 research papers on the basis of predefined eligibility criteria (inclusion and exclusion) aligned  
16 with the research questions. **These criteria determined the relevance of a paper to human capital  
17 or human resources. After screening, 110 papers were obtained.** The full-text versions of these  
18 papers were subsequently retrieved and screened again to confirm that they met the predefined  
19 criteria.  
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29 In the indexing phase, I meticulously reviewed the selected papers and extracted data using the  
30 initially identified conceptual framework to ascertain the relevance of the papers to the review  
31 questions and to identify the principal characteristics of the papers. In the data extraction  
32 process, I first identified organisational challenges within a VUCA environment and then  
33 examined the associated people challenges. The coders aimed to find responses to questions  
34 such as “Considering the characteristics of VUCA that pose both organisational and human  
35 resources (HR) challenges, which competencies should employees prioritise to navigate the  
36 VUCA landscape?” From the papers, I compiled a list of all the challenges posed by the VUCA  
37 environment, thereby preparing for the next stage of charting, in which I sought to derive  
38 meaning from the collected data.  
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47 During the charting phase, I analysed the challenges identified in the previous stage and divided  
48 them into four categories depending on the reason for the challenge: volatility, uncertainty,  
49 complexity, and ambiguity. I performed this process manually and discussed the significance  
50 of each challenge in detail before including it in the study. I then synthesised the findings on  
51 the basis of the categories.  
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56 <Insert Table I: Examples of VUCA Challenges and associated competencies>  
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3 Finally, in the mapping and interpretation phases, I contextualised the identified themes within  
4 the context of the original research questions. The findings of the review are shown in Table I  
5 to facilitate interpretation. Through this coding endeavour, overarching coding patterns were  
6 identified, leading to the emergence of key employee competencies pertinent to a VUCA world.  
7 This process was far from straightforward, as it necessitated extensive deliberations that gave  
8 rise to deep questions such as “Does this qualify as a competency?”, “Is it an essential  
9 competency?”, and “Is it too broad, or is it a critical competency?” Qualitative discussions  
10 between the two coders during this rigorous process also contributed to inter-rate reliability.  
11 To further enhance reliability, the data were cross-verified using both a simple percentage  
12 agreement (Hayes and Hatch, 1999) and Cohen’s kappa coefficient (Landis and Koch, 1977).  
13 During this phase, the coders categorised competencies based on their association with the  
14 employee's mind (cognitive competency), the employee's surroundings (cross-cultural  
15 competency), the employee's abilities (analytical competency), or the employee's self-  
16 effectiveness (personal effectiveness competency) in navigating VUCA challenges.  
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## 28 **Findings**

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30 In this study, the identified VUCA competencies are categorised as cognitive, analytical, cross-  
31 cultural and personal effectiveness competencies (Fig. 2).  
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34 <Insert Figure 2: Categorisation of VUCA Competencies>  
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### 37 ***Cognitive Competencies***

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40 Cognitive competencies refer to a person’s abilities and skills that are associated with mental  
41 processes and intellectual functions. Cognitive competencies are fundamental to how people  
42 perceive and interact with the world, and they play a crucial role in overall cognitive  
43 functioning and intelligence (Anzengruber and Goetz, 2018). Cognitive competencies provide  
44 individuals with the mental tools and abilities needed to make sense of and adapt to the  
45 complexities of a VUCA world. They enhance an individual’s capacity to process information,  
46 make decisions, and respond to changing circumstances with agility and resilience. Cognitive  
47 competencies contribute to an individual’s capabilities and play a vital role in shaping an  
48 individual’s economic and personal prospects. Investments in cognitive competencies through  
49 means such as education and training are essential for realising the potential benefits of human  
50 capital. The findings of this study revealed that cognitive flexibility, agility mindset, and  
51 personal ambidexterity are important for effective navigation of the VUCA world.  
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### *Cognitive Flexibility*

Cognitive flexibility is an individual's capability to adapt their behaviour and thought process while responding to a turbulent environment (Nowacka and Reginia, 2021). **Cognitive flexibility involves switching attention between different topics, generating diverse ideas, and adjusting strategies based on new information.** In a VUCA world, employees with cognitive flexibility can address various challenges more effectively. Individuals with high cognitive flexibility are better equipped to embrace change through experimentation with new ideas (Laureiro-Martínez and Brusoni, 2018). Such employees explore various solutions to a problem and quickly switch to another strategy if one does not work. Furthermore, such employees can adapt their plans and actions in response to volatile circumstances (Bywater and Lewis, 2019). They are more effective in dealing with uncertainty and making decisions when information is incomplete or contradictory. Cognitive flexibility enables individuals to see connections between seemingly unrelated information in ambiguous situations and to think of novel solutions. Cognitive flexibility is crucial because it helps people adapt to changing systems and determine the steps and tools needed to achieve employee L&D goals. In uncertain situations such as complex negotiations, employees with higher cognitive flexibility ensure success for their organisation. Higher cognitive capability facilitates instant realisation of failure or changing of a strategy. Employees require a higher level of flexibility for not only generating new strategies but also handling resource allotment, day-to-day execution, and simultaneous demands of various types of stakeholders.

### *Agility Mindset*

Agility is a set of skills and attributes that enable individuals and teams to swiftly and effectively adapt to changing circumstances, respond to challenges, and seize opportunities (Eilers *et al.*, 2022). Agility is characterised by the ability to be flexible, responsive, and resilient in the face of uncertainty, complexity, and rapid change. The competency of agility is highly valued in today's dynamic and competitive business environment, as it helps individuals stay relevant, thrive in changing markets, and seize emerging opportunities while effectively managing risks and challenges. In VUCA situations, which are characterised by sudden and unpredictable changes, agility enables individuals to quickly adapt to new circumstances and pivot when necessary to respond to emerging challenges and opportunities (Baran and Woznyj, 2020). Agility ensures that individuals and teams can work together effectively, leveraging diverse perspectives and skills to address complex issues. It enables organisations to swiftly

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3 adapt their products and services to changing customer preferences and market dynamics.  
4 Leaders with the agility competency are better equipped to guide organisations through change,  
5 inspire their teams, and foster a culture of adaptability and continuous improvement. The agility  
6 mindset can help employees to quickly adapt to sudden transitions in the organisational  
7 environment, thrive in complicated situations, and smoothly navigate ambiguity (Troise *et al.*,  
8 2021). This characteristic not only enables employees to excel individually but also cultivates  
9 a more adaptable and flexible organisational environment. Moreover, agile learners have a  
10 broad mindset and consistently challenge the status quo. They are not scared to step outside  
11 their comfort zone (Baran and Woznyj, 2020; Worley and Jules, 2020). Information technology  
12 (IT) organisations have embraced an agile way of working by using Scrum frameworks for  
13 project management.

### 23 *Personal Ambidexterity*

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25 Personal ambidexterity is an individual's ability to balance and integrate two seemingly  
26 opposing cognitive approaches or mental orientations: exploration and exploitation (Kim *et al.*,  
27 2022). The competency of ambidexterity refers to the ability to seamlessly navigate between  
28 these two orientations. Exploration represents the willingness and capability to seek out and  
29 experiment with new ideas, technologies, and approaches. It involves a focus on novelty,  
30 creativity, and risk-taking. People with an exploratory mindset are open to change and  
31 continuously look for innovative solutions, even if the solutions involve uncertainty and  
32 experimentation. Exploitation signifies the ability to efficiently use existing knowledge,  
33 resources, and established processes to maximise current opportunities. It involves optimising  
34 and refining existing systems, products, or services. People with an exploitative mindset are  
35 efficient, focused on refinement, and often risk-averse. An ambidextrous mindset enables  
36 individuals and teams to adapt to changing circumstances and effectively address both short-  
37 term and long-term goals. VUCA situations often require employees to quickly pivot and adapt  
38 to new circumstances. Ambidexterity helps employees determine when they should explore  
39 new solutions and when they should leverage existing knowledge and resources to address  
40 evolving challenges. The competency also helps employees maximise the efficiency and  
41 effectiveness of existing processes and operations, which is vital for maintaining productivity  
42 and delivering consistent results (Srinivasan and Makhecha, 2019). In a VUCA world,  
43 employees need to balance the pursuit of new opportunities (exploration) with the efficient use  
44 of existing resources (exploitation). Ambidexterity enables individuals to maintain this  
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3 balance, ensuring that they can adapt to change and uncertainty while maintaining operational  
4 stability (Liu *et al.*, 2022).  
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### 7 *Analytical Competencies*

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10 Analytical competencies refer to an individual's capacity to gather, evaluate, interpret, and  
11 draw meaningful insights from data and information. Analytical competencies are closely  
12 related to innovation and problem-solving abilities. Individuals with strong analytical skills are  
13 better equipped to identify and address problems, develop creative solutions, and contribute to  
14 innovation in their respective fields. These competencies contribute to an individual's overall  
15 development by enhancing their productivity, earning potential, adaptability, problem-solving  
16 skills, and capacity for innovation. The findings of this study indicated that in a VUCA  
17 environment, complex problem solving and creativity are the analytical competencies essential  
18 for success (Wolanin, 2022).  
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### 26 *Creativity*

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29 Creativity is the ability to generate novel and valuable ideas, solutions, or expressions by  
30 thinking innovatively and imaginatively. It involves the capacity to approach problems and  
31 challenges in unconventional ways, make new connections between ideas, and produce original  
32 outcomes (Milne, 2020). Creativity goes beyond artistic expression and is a vital skill in various  
33 aspects of life, such as problem solving, innovation, and personal development. Creativity  
34 includes both divergent thinking (the capability to explore multiple ideas and perspectives,  
35 even when they may seem unrelated, and to consider a wide range of possibilities) and  
36 convergent thinking (the skill to consider diverse ideas and distil them into practical, workable  
37 solutions or expressions). The competency of creativity is highly valued in a wide range of  
38 professions and industries, as it contributes to innovation, competitiveness, and the ability to  
39 adapt to change. In VUCA scenarios, hidden opportunities exist amid the chaos (Millar *et al.*,  
40 2018). Creative employees can identify and leverage these opportunities, contributing to the  
41 organisation's growth and success. VUCA environments often present complex and novel  
42 problems that require creative solutions (Horstmeyer, 2020). Employees with a high creativity  
43 competency can generate innovative ideas to address these challenges; thus, they are effective  
44 problem-solvers.  
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### *Complex Problem Solving*

The competency of complex problem solving refers to an individual's ability to effectively address intricate, multifaceted issues or challenges that do not have straightforward or readily available solutions (Wüstenberg *et al.*, 2012). Complex problem solving involves a structured and systematic approach to understanding, analysing, and solving problems that may involve numerous variables, interdependencies, and uncertainties. This competency is crucial in a wide range of contexts, from business and engineering to science and everyday life. It enables individuals to tackle VUCA challenges that do not have clear-cut answers and to effectively navigate uncertain and dynamic environments. VUCA scenarios often involve complex, multifaceted problems that lack straightforward solutions (Hongchai and Weber, 2023). Competence in complex problem solving enables employees to break down these challenges into manageable components and develop comprehensive solutions. VUCA environments are characterised by frequent and unpredictable changes. Employees whose complex problem solving skills are strong can adapt quickly and effectively to new and unexpected challenges. They can better assess, manage, and mitigate risks because of their deeper understanding of the various factors at play in complex situations. Developing the competency of complex problem solving is personally enriching and can lead to career advancement, enhancing an employee's value at the workplace. Individual employees whose complex problem solving skills are strong contribute to the organisation's overall ability to thrive in a VUCA environment by addressing challenges and seizing opportunities effectively (Stein, 2021).

### *Cross-cultural Competencies*

Cross-cultural competencies refer to a set of knowledge, skills, attitudes, and behaviours that enable individuals to effectively interact, communicate, and work with people from different cultural backgrounds. These competencies are essential for building positive relationships, collaborating with colleagues, and navigating the social aspects of the workplace. Cross-cultural competencies are valuable assets for employees in VUCA environments because they enable individuals to navigate the interpersonal and social aspects of complex and rapidly changing situations. Human capital theory recognises that individuals with cross-cultural competencies can help organisations seize international opportunities, expand their customer base, and increase their revenue and profits. In this study, cross-cultural intelligence and cross-cultural collaboration were identified as essential competencies for effectively navigating VUCA challenges.

### *Cross-cultural Intelligence*

Cross-cultural intelligence is the ability to effectively navigate and interact within diverse cultural and social contexts (Setti *et al.*, 2020). It involves having the understanding, awareness, and adaptability necessary to relate to individuals and groups from different cultural backgrounds, and respecting and valuing their customs, norms, beliefs, and values. The competency of cross-cultural intelligence is highly valuable in today's interconnected and diverse world, as it facilitates effective communication, collaboration, and relationship-building with individuals from various cultural backgrounds. It is essential in personal and professional settings, as it promotes inclusivity, reduces misunderstandings, and enhances the ability to work harmoniously in multicultural environments. In a VUCA environment, individuals often interact with colleagues, partners, and customers from diverse cultural backgrounds. Cross-cultural intelligence enables the individuals to communicate effectively and respectfully, reducing the likelihood of misunderstandings and conflicts. A cross-culturally intelligent individual fosters a culture of diversity and inclusion (Shliakhovchuk, 2021), which is vital in VUCA environments, as diverse perspectives can lead to more creative problem-solving and a broader range of solutions. In VUCA markets, understanding the socio-cultural aspects of customer behaviour and preferences is essential. Cross-cultural intelligence helps employees tailor products, services, and marketing strategies to meet diverse customer needs. Cross-cultural intelligence enables employees to work effectively with individuals from diverse backgrounds and fosters productive cross-cultural collaboration (Allen *et al.*, 2018).

### *Cross-cultural Collaboration*

The competency of cross-cultural collaboration is the ability of individuals to work together effectively with people from diverse cultural backgrounds, often in multicultural or global settings (Tarba *et al.*, 2021). It involves collaborating and communicating across cultural boundaries, respecting and appreciating differences, and leveraging the strengths of a culturally diverse team to achieve common goals and objectives. A VUCA environment often involves interactions with a wide range of stakeholders, such as customers, partners, and colleagues, from different cultural backgrounds (Shliakhovchuk, 2021). The competency of cross-cultural collaboration is essential for effective communication and relationship-building. VUCA environments demand a culture of diversity and inclusion. Employees with this competency can work effectively with colleagues from diverse backgrounds, fostering a more inclusive and harmonious work environment. Teams with a collaborative mindset tend to be more resilient

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3 in the face of adversity. They support each other emotionally and professionally, making it  
4 easier to bounce back from setbacks and to cope with stress and pressure. VUCA situations  
5 demand access to relevant and timely information. A collaborative mindset fosters open  
6 communication and knowledge sharing among team members, which can improve decision-  
7 making and problem solving (Allen *et al.*, 2018). In VUCA situations, conflicts can arise due  
8 to stress and uncertainty. Collaborative employees excel in constructive conflict resolution,  
9 helping maintain a positive team atmosphere.

### 16 ***Personal Effectiveness Competencies***

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19 Personal effectiveness competencies, also known as personal skills or self-management skills,  
20 encompass a set of abilities that enable individuals to efficiently manage themselves, their time,  
21 and their resources. These competencies are essential for personal development, productivity,  
22 and achievement of individual and organisational goals. Human capital theory acknowledges  
23 that individuals with higher resilience can manage stress, build strong relationships, and handle  
24 interpersonal situations effectively, making them valuable assets in the workplace. In this  
25 study, personal resilience, adaptive mindset, and continuous learning were identified as the  
26 personal effectiveness competencies required for navigating a VUCA world.

### 33 ***Personal Resilience***

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36 Resilience is the ability of individuals and teams to withstand and recover from adversity,  
37 setbacks, and stress, while adapting and growing stronger in the face of challenges (Labrague  
38 and Santos, 2020). It involves the capacity to effectively cope with difficulties, maintain mental  
39 and emotional well-being, and bounce back from setbacks. The competency of resilience is  
40 essential in personal and professional life, as it helps individuals and organisations navigate the  
41 uncertainties and challenges that arise in a complex and rapidly changing VUCA world (Gao  
42 *et al.*, 2021). Resilience includes persistence, optimism, and emotional regulation at the  
43 cognitive level to cope with VUCA-related challenges. In a VUCA world, change is constant  
44 and often unexpected. Resilience helps employees adapt to these changes by reducing the  
45 negative impact of stress and anxiety, making it easier to embrace new circumstances and  
46 challenges. VUCA environments are characterised by high levels of uncertainty (Breen, 2017).  
47 The competency of resilience equips employees with the emotional tools to handle ambiguity,  
48 make decisions in the face of incomplete information, and manage the anxiety associated with  
49 unpredictability. Resilient individuals are more likely to maintain their productivity and  
50 performance even in challenging and demanding circumstances, which is crucial in a VUCA  
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3 environment. Resilience is significant in VUCA scenarios because it enables individual  
4 employees to not only survive but also thrive in the face of volatility, uncertainty, complexity,  
5 and ambiguity. It equips them with the emotional and psychological tools needed to withstand  
6 the pressures of such an environment while maintaining their well-being and productivity.  
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8 Individuals with this competency excel at recognising patterns and relationships in information,  
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10 and can, therefore, make connections between seemingly unrelated ideas.  
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### 14 *Adaptive Mindset*

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17 Adaptive mindset is an individual's ability to approach challenges, change, and uncertainty  
18 with flexibility, resilience, and a willingness to learn and grow (Ey *et al.*, 2021). It involves a  
19 mindset that embraces change as an opportunity for personal and professional development,  
20 rather than as a threat or obstacle. Individuals with an adaptive mindset are open to new  
21 experiences, receptive to feedback, and able to adjust their perspectives and behaviours to  
22 effectively navigate evolving circumstances. An adaptive mindset is highly valuable in  
23 personal and professional life, as it enables individuals to thrive in uncertain and dynamic  
24 environments, seize new opportunities, and overcome obstacles with a sense of optimism and  
25 a commitment to personal growth (McCausland, 2022). It is a key competency in an ever-  
26 changing world. VUCA environments often present challenges, setbacks, and stressors. An  
27 adaptive mindset equips employees with the resilience needed to bounce back from adversity,  
28 cope with change, and maintain their motivation and productivity. Employees with an adaptive  
29 mindset are highly adaptable. They can adjust to new situations, learn quickly, and pivot when  
30 necessary, and are thus highly capable of addressing the ever-evolving demands of a VUCA  
31 environment (Porkodi, 2022). In a VUCA environment, change is constant. Employees with  
32 an adaptive mindset not only accept change but also view it as an opportunity for growth,  
33 innovation, and improvement rather than as a threat.  
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### 47 *Continuous Learning*

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49 Continuous learning is the ability and commitment of an individual to acquire new knowledge,  
50 skills, and insights on an ongoing basis (Rowold and Kauffeld, 2008). It involves an  
51 individual's proactive and self-directed approach to personal and professional development,  
52 with the goal of staying current, adapting to change, and improving their capabilities over time.  
53 Continuous learners recognise that learning is not limited to formal education but is a lifelong  
54 journey that extends into all aspects of life. Continuous learning is a critical competency in  
55 today's fast-paced, knowledge-driven world. It ensures that individuals remain adaptable,  
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3 competitive, and prepared to embrace change and innovation in their personal and professional  
4 lives. It is particularly relevant in environments in which staying current and being open to new  
5 ideas and approaches are essential for success. In a VUCA environment, skills can quickly  
6 become outdated. Continuous learning ensures that employees remain competent and relevant  
7 in their roles, even as job requirements evolve (Guo and Cheng, 2019). Continuous learning  
8 enhances an individual's career prospects by expanding their knowledge and skills. It can lead  
9 to promotions, new opportunities, and a more fulfilling career. Continuous learners future-  
10 proof themselves by staying ahead of emerging trends, technologies, and industry shifts, which  
11 is vital in VUCA environments (Cantarino and de Araujo, 2022). Employees who continuously  
12 learn and adapt have a competitive advantage. They are more likely to excel in dynamic  
13 markets and seize opportunities that others may miss.

## 23 Discussion

24  
25 In a VUCA world, organisations face rapid and unpredictable changes (volatility), a lack of  
26 clarity about the future (uncertainty), increasing intricacy in operations (complexity), and  
27 incomplete or contradictory information (ambiguity). In such scenarios, employees with certain  
28 competencies sail through VUCA challenges. Using human capital theory and the framework  
29 synthesis review as a methodology, I identified 10 key competencies—categorised as  
30 cognitive, analytical, cross-cultural and personal effectiveness competencies—that are  
31 essential for an employee to effectively navigate VUCA challenges. I extended the  
32 understanding of these competencies with sample behavioural indicators for better  
33 understanding on how these competencies can be demonstrated in employees' professional  
34 careers (Table II). I also present an overview of how employees can develop these  
35 competencies through an L&D agenda (shown in Table III). In the VUCA context, this study  
36 draws attention to three crucial aspects of industry and the workforce: a workforce structure  
37 characterised by new behaviours, a terminology that reflects the requirements of human capital  
38 in the future, and a classification system for the competencies required to navigate VUCA  
39 challenges. Given the disruptive nature of VUCA across various dimensions and levels (such  
40 as business models, manufacturing processes, and the economy), the capabilities of the  
41 workforce must be equally enhanced in different aspects, such as technical, psychological, and  
42 social domains (Millar *et al.*, 2018). **As the VUCA world is characterised by rapid changes in  
43 technology, markets, and industries, the importance of acquiring new skills and adopting new  
44 approaches increases. Therefore, employees who lack adaptability and an agility mindset risk  
45 falling behind in such an environment; without the ability to swiftly pivot, they may struggle**



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3 to remain relevant in their careers or industries. VUCA environments are rife with complex  
4 challenges and require innovative solutions. The 10 key competencies identified in this study  
5 are crucial for driving growth and competitive advantage. Thus, it is critical for both the  
6 employee and the employer to develop these competencies in order to remain relevant in the  
7 VUCA world. Consequently, I advocate for the development of a comprehensive set of  
8 employee competencies tailored for the VUCA era.  
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14 <Table II: Employee Competency Framework for VUCA>

### 15 16 *L&D Implications for Employees*

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18 VUCA competencies foster adaptability, resilience, and a commitment to continuous learning,  
19 thus contributing to a positive learning attitude. Individuals with these competencies are more  
20 likely to embrace change, remain motivated despite difficulties, and approach learning as an  
21 ongoing journey of growth. These competencies promote collaboration by making individuals  
22 more proactive and effective learners. Additionally, VUCA competencies boost self-  
23 confidence in learning by promoting cognitive flexibility, agility, and a positive approach to  
24 change. Overall, these competencies help individuals become more adaptable, resilient, and  
25 proactive learners with a growth mindset and a strong belief in their capacity to learn effectively  
26 in complex and unpredictable environments.  
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35 <Table III: Learning and Development (L&D) Interventions for Developing VUCA  
36 Competencies in Employees>

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39 Individual employees should assess their current proficiency in VUCA competencies by  
40 identifying their strengths and areas for improvement in this context. They need to believe that  
41 they can develop and achieve improvement in these competencies over time; however, the  
42 learning must be continuous and focused (Nowacka and Rzemieniak, 2021; Rowold and  
43 Kauffeld, 2008). Continuing Professional Development programmes may be helpful for  
44 pursuing relevant degrees or certifications to deepen knowledge and skills in specific areas.  
45 Classroom training provides a structured environment in which employees can gain  
46 foundational knowledge and skills on emerging competencies such as cognitive flexibility and  
47 cross-cultural intelligence. Experiencing and addressing complex challenges at work is a  
48 natural way to build such competencies in a real setting and obtain related on-the-job  
49 experience. Employees need to seek out opportunities within their organisation to work on  
50 projects that require complex problem solving or adaptability (Moura *et al.*, 2023). They need  
51 to connect with colleagues, mentors, and experts from different backgrounds to ensure  
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3 continuous learning in informal ways. Informal learning encourages employees to stay updated,  
4 explore new ideas, and adapt to evolving information and technologies.  
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### 8 *Implications for L&D Function*

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10 The development of VUCA competencies in employees is crucial for organisations to excel in  
11 dynamic environments. Organisations could incorporate these competencies into their L&D  
12 agenda (Edeb *et al.*, 2021). The L&D professional should first assess employees' current  
13 competencies and identify areas for improvement with regard to VUCA challenges by  
14 customising the learning path; a mix of formal training, self-directed learning, and experiential  
15 opportunities can be offered for skill enhancement. Organisations should enable active learning  
16 by creating opportunities for employees to gain first-hand experience in VUCA situations  
17 through simulations, scenario-based exercises, and immersive learning experiences.  
18 Organisations could provide employees the opportunity to work on cross-functional projects  
19 that promote collaboration, expose them to different aspects of the business, and require  
20 problem solving and adaptability. **The establishment of peer coaching and peer learning**  
21 **communities or networks within the organisation will enable employees to share insights and**  
22 **best practices related to VUCA competencies, thereby fostering knowledge exchange.** Going  
23 beyond the L&D function, organisations could use formal processes such as performance  
24 reviews and 360-degree feedback to assess the employee's capability with regard to these  
25 competencies. Forward-looking organisations could hold innovation labs and hackathons for  
26 employees to work on creative projects and disruptive ideas, and could reward innovative  
27 solutions for real business challenges. At the leadership level, organisations should ensure that  
28 their leadership demonstrates commitment to VUCA competencies and serves as a role model  
29 by participating in development programmes alongside their organisation's teams (Elkington,  
30 2018; Sarkar, 2016).  
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47 Modern L&D tools encompassing a wide range of technologies and platforms have  
48 revolutionised education and training. Virtual Reality (VR) and Augmented Reality (AR) can  
49 be used to build competencies that are difficult to acquire in the classroom and on the job; these  
50 technologies enhance engagement through immersive experiences. **VR and AR can replicate**  
51 **high-stress or complex scenarios in a controlled setting, enabling learners to experience and**  
52 **navigate VUCA situations without real-world consequences. The technologies facilitate**  
53 **collaboration among learners, regardless of physical location, and can be used to provide**  
54 **tailored learning experiences. VR and AR can provide instantaneous feedback, enabling**  
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3 learners to adjust their approaches in real time. Such constant evaluation helps learners develop  
4 agility and the ability to pivot strategies in uncertain situations. Video-based learning,  
5 gamification, and microlearning promote learner interaction and retention. AI and machine  
6 learning can be used to personalise the content on VUCA capabilities for each competency.  
7 Learning chatbots and virtual assistants provide instant support to learners, thus enabling  
8 continuous learning. Social platforms and collaboration tools facilitate knowledge sharing, and  
9 analytics- and data-driven insights can be used to optimise training strategies. By incorporating  
10 these tools and technologies in the VUCA context, the L&D function in organisations could  
11 demonstrate their commitment to preparing employees for the challenges of a VUCA world  
12 and building a workforce that is agile, resilient, innovative, and capable of thriving in complex  
13 and uncertain environments. When designing L&D interventions, L&D professionals should  
14 customise interventions for the unique needs and challenges of their organisations and  
15 employees. One-size-fits-all training programmes may not be effective for developing VUCA  
16 competencies. In the digital age, employees may suffer from information overload; therefore,  
17 interventions that provide focused, manageable learning experiences would create value for the  
18 employees.  
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### 31 **Directions for Future Research**

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34 Research on the topic of developing VUCA competencies in employees is dynamic and  
35 continually evolving (Ungureanu *et al.*, 2018). While this study has discussed an L&D agenda  
36 on VUCA competencies for employees, future research could explore connections between  
37 VUCA competencies and neuroscience, leadership development, mental health and well-being,  
38 agile learning, and organisational performance. Future studies could focus on three areas for  
39 the development of human capital in the VUCA era: the employee, L&D, and the organisation.  
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45 In the context of the employee, practitioners could focus on developing more precise and  
46 reliable measures for assessing VUCA competencies in employees. The influence of VUCA  
47 competencies on employee job performance, well-being, mental health, and stress levels  
48 (Holley *et al.*, 2022; Luthans and Broad, 2022) could be explored. Does a strong set of VUCA  
49 competencies lead to improved resilience and reduced burnout? Future studies could also  
50 examine the relationship between an employee's VUCA competencies and their career  
51 progression, job satisfaction, and overall success. From the cross-cultural perspective (Rath *et*  
52 *al.*, 2021), studies could explore how VUCA competencies manifest in different cultural and  
53 regional contexts. Researchers could investigate whether certain competencies are more critical  
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3 in specific locations or industries. Another potential area of study is the examination of how  
4 different generations (e.g., Gen Z, Millennials, Baby Boomers) develop and apply VUCA  
5 competencies, and whether generational differences (Kornelsen, 2019) impact organisational  
6 dynamics. From the leadership perspective, studies could investigate the influence of leaders  
7 with strong VUCA competencies on their teams and organisations, and the relationship  
8 between leadership development in VUCA skills and organisational performance (Khan *et al.*,  
9 2021).

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11 In the context of L&D, studies could analyse the cognitive mechanisms involved in VUCA  
12 competency development and how the brain adapts to VUCA environments. Studies on VUCA  
13 competencies could investigate the most effective training and development methods for  
14 enhancing the competencies. Researchers could examine the effects of using experiential  
15 learning, gamification, and immersive training environments. Another potential area of future  
16 research is the study of the role of technology, such as VR, AI, and data analytics (Lee and  
17 Moon, 2022; Manimuthu *et al.*, 2021), in the delivery of personalised and adaptive training  
18 programmes for VUCA competencies. The findings of these studies could help in designing  
19 suitable curriculum for schools, universities, and corporate training programmes with the goal  
20 of ensuring that VUCA competencies are effectively integrated into educational and  
21 professional development pathways.

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23 In the context of the organisation, future studies could explore the relationship between  
24 employees' VUCA competencies and organisational performance indicators, such as  
25 innovation and productivity, and between employees' VUCA competencies and an  
26 organisation's competitive advantage in rapidly changing markets (Bourne, 2021). Researchers  
27 could examine the return on investment for organisations that invest in VUCA competency  
28 development for their employees. With reference to developing these competency frameworks  
29 within an organisation, researchers could explore and identify the most effective strategies and  
30 interventions for developing these competencies in employees, and comprehensive frameworks  
31 or modes for cultivating VUCA competencies within organisations. Studies could examine  
32 how VUCA competencies vary across different cultural contexts, how multinational companies  
33 (MNCs) could promote the competencies in a global workforce, and whether there are culture-  
34 specific approaches to developing the competencies. The findings of these studies could  
35 provide valuable insights into the development, impact, and practical applications of VUCA  
36 competencies at the organisational level, ultimately helping organisations and individuals  
37 thrive in an ever-changing world.

## Conclusion

In summary, the findings of this study underscore the significance of specific employee competencies required for navigating VUCA challenges and the development of these competencies in employees with a focus on an L&D agenda. Using the framework synthesis as a methodological approach, I developed a competency framework that is specifically tailored to the VUCA environment. These competencies are cognitive competencies (cognitive flexibility, agility mindset, and personal ambidexterity), cross-cultural competencies (cross-cultural intelligence and cross-cultural collaboration), analytical competencies (creativity and complex problem solving), and personal effectiveness competencies (personal resilience, continuous learning, and an adaptive mindset). In light of ongoing discussions on ways in which employees can adapt to the VUCA landscape and the associated HR challenges, this study provides valuable insights for industry professionals, academics, and policymakers to develop the required human capital in all spheres of society. Furthermore, I propose an L&D agenda for developing these competencies among employees to enable them to effectively adapt to the VUCA world and to create the human capital required in the VUCA context.

## References

- Aftab, S., Khalid, K., Waheed, A., Aftab, A., & Adnan, A. (2022). Role of Agile leadership in managing inter-role conflicts for a satisfying job and life during COVID-19 in a VUCA world. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.979792>
- Allen, S., Williams, P., & Allen, D. (2018). Human resource professional's competencies for pluralistic workplaces. *International Journal of Management Education*, 16(2), 309-320. <https://doi.org/10.1016/j.ijme.2018.04.001>
- Anzengruber, J., & Goetz, M. A. (2018). The cognitive and the action-oriented elements of competence along the innovation process – evidence from R&D teams in the medical equipment sector. *The International Journal of Human Resource Management*, 31(15), 1891-1912. <https://doi.org/10.1080/09585192.2018.1424013>
- Baran, B. E., & Woznyj, H. M. (2020). Managing VUCA: The human dynamics of agility. *Organizational dynamics*, 50(2), 1-11. <https://doi.org/10.1016/j.orgdyn.2020.100787>
- Bartram, D. (2005). The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology*, 90(6), 1185-1203. <https://doi.org/10.1037/0021-9010.90.6.1185>

1  
2  
3 Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to*  
4 *Education*. University of Chicago Press.

5  
6  
7 Bennett, N., & Lemoine, G. J. (2014). What a difference a word makes: Understanding threats to  
8 performance in a VUCA world. *Business Horizons*, 57(3), 311-317.  
9 <https://doi.org/10.1016/j.bushor.2014.01.001>

10  
11  
12 Bernstein, E & Euchner, J (2023) 2022 IRI CTO Forum Summary, *Research-Technology Management*,  
13 66:1, 26-29, DOI: 10.1080/08956308.2023.2142014

14  
15  
16 Bourne, M. (2021). Performance measurement and management in a VUCA world. *International*  
17 *Journal of Production Research*, 59(24), 7311-7316. <https://doi.org/10.1080/00207543.2021.2004042>

18  
19  
20 Boyatzis, R. E. (2008). Competencies in the 21st century. *Journal of Management Development*, 27(1),  
21 5-12. <https://doi.org/10.1108/02621710810840730>

22  
23  
24 Breen, J. M. (2017). Leadership resilience in a VUCA world. In *Visionary leadership in a turbulent*  
25 *world: Thriving in the new VUCA context* (pp. 39-58). Emerald Publishing Limited.

26  
27  
28 Brunton, G., Oliver, S., & Thomas, J. (2020). Innovations in framework synthesis as a systematic review  
29 method. *Research Synthesis Methods*, 11(3), 316-330. <https://doi.org/10.1002/jrsm.1399>

30  
31  
32 Bywater, J., & Lewis, J. (2019). Leadership: What competencies does it take to remain engaged as a  
33 leader in a VUCA world? *Assessment and Development Matters*, 11(3), 2-9.  
34 <https://doi.org/10.53841/bpsadm.2019.11.3.2>

35  
36  
37  
38  
39  
40  
41  
42  
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45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
Campion, M. A., Fink, A. A., Ruggeberg, B. J., Carr, L., Phillips, G. M., & Odman, R. B. (2011). Doing  
competencies well: Best practices in competency modeling. *Personnel Psychology*, 64(1), 225–262.  
<https://doi.org/10.1111/j.1744-6570.2010.01207.x>

Campion, M. C., Schepker, D. J., Campion, M. A., & Sanchez, J. I. (2019). Competency modeling: A  
theoretical and empirical examination of the strategy dissemination process. *Human Resource*  
*Management*, 59(3), 291-306. <https://doi.org/10.1002/hrm.21994>

Caniëls, M. C., & Veld, M. (2016). Employee ambidexterity, high performance work systems and  
innovative work behaviour: How much balance do we need? *The International Journal of Human*  
*Resource Management*, 30(4), 565-585. <https://doi.org/10.1080/09585192.2016.1216881>

Cantarino, G. P. R., & de Araujo, F. O. (2022). Technical, behavioral and attitudinal competences of  
leaders/managers: practical applications based on literature exploratory study. *Brazilian Journal of*  
*Operations & Production Management*, 19(4), 1-8. <https://doi.org/10.14488/BJOPM.2022.1558>

1  
2  
3 Carroll, C., Booth, A., & Cooper, K. (2011). A worked example of “best fit” framework  
4 chemopreventive agents. *BioMed Central Medical Research Methodology*, 11, 29. combining and  
5 configuring textual or mixed methods data.  
6  
7

8  
9 Chandrasekaran, A, Linderman,K and Schroeder,R(2012). "Antecedents to Ambidexterity Competency  
10 in High Technology Organizations." *Journal of Operations Management* 30.1-2.  
11

12  
13 Dima, G., Meseşan Schmitz, L., & Şimon, M. (2021). Job stress and burnout among social workers in  
14 the VUCA world of COVID-19 pandemic. *Sustainability*, 13(13), 7109.  
15 <https://doi.org/10.3390/su13137109>  
16

17  
18 Du, J., & Chen, Z. (2018). Applying organizational ambidexterity in strategic management under a  
19 “VUCA” environment: Evidence from high tech companies in China. *International Journal of*  
20 *Innovation Studies*, 2(1), 42-52. <https://doi.org/10.1016/j.ijis.2018.03.003>  
21

22  
23 Edeb, E., Herman, C., & Miller, S. (2021). Evidence-based policymaking in a VUCA world.  
24 *Transnational Corporations*, 28(3), 159-182. <https://doi.org/10.18356/2076099x-28-3-8>  
25

26  
27 Eilers, K., Peters, C., & Leimeister, J. M. (2022). Why the agile mindset matters. *Technological*  
28 *Forecasting and Social Change*, 179, 121650. <https://doi.org/10.1016/j.techfore.2022.121650>  
29

30  
31 El Hatham, Z., Venkatesh, V. G., Zouadi, T., Sreedharan, V. R., Manimuthu, A., & Shi, Y. (2023).  
32 Analyzing the greenhouse gas emissions in the palm oil supply chain in the VUCA world: A blockchain  
33 initiative. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.3436>  
34

35  
36 Elkington, R. (2018). Leadership decision-making leveraging big data in Vuca contexts. *Journal of*  
37 *Leadership Studies*, 12(3), 66-70. <https://doi.org/10.1002/jls.21599>  
38

39  
40 Ey, P. E., Berka, G. C., & Doyle, L. (2021). Adaptive Critical Thinking for a VUCA World.  
41 *Organization Development Review*, 53(2). [https://pesquisa.bvsalud.org/global-literature-on-novel-](https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/en/covidwho-1200556)  
42 [coronavirus-2019-ncov/resource/en/covidwho-1200556](https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/en/covidwho-1200556)  
43

44  
45 Gao, Y., Feng, Z., & Zhang, S. (2021). Managing supply chain resilience in the era of VUCA. *Frontiers*  
46 *of Engineering Management*, 8(3), 465. <https://doi.org/10.1007/s42524-021-0164-2>  
47

48  
49 Hayes J. R. & Hatch J. A. (1999). Issues in measuring reliability: Correlation versus percentage of  
50 agreement. *Writt. Commun.* 16 354–367. 10.1177/0741088399016003004  
51

52  
53 Hofstede, G. H., & Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors,*  
54 *institutions and organizations across nations.* SAGE.  
55  
56  
57  
58  
59  
60

1  
2  
3 Holley, D., Coulson, K., Buckley, C., & Corradini, E. (2022). Wellbeing in the workplace: exploring  
4 the VUCA approach. *Journal of Learning Development in Higher Education*, 25(2022), 13.  
5 10.47408/jldhe.vi25.954  
6  
7

8  
9 Hongchai, D. M., & Weber, C. M. (2023). Leadership for Technology Management in a Volatile,  
10 Uncertain, Complex, and Ambiguous (VUCA) World: A Review of the Literature and a Research  
11 Agenda. In *2023 Portland International Conference on Management of Engineering and Technology*  
12 (PICMET) (pp. 1-23). IEEE.  
13  
14

15  
16 Horstmeyer, A. (2020). The generative role of curiosity in soft skills development for contemporary  
17 VUCA environments. *Journal of Organizational Change Management*, 33(5), 737-751.  
18 <https://doi.org/10.1108/jocm-08-2019-0250>  
19  
20

21  
22 Khan, M. M., Ahmed, S. S., & Khan, E. (2021). The emerging paradigm of leadership for future: The  
23 use of authentic leadership to lead innovation in VUCA environment. *Frontiers in Psychology*, 12.  
24 <https://doi.org/10.3389/fpsyg.2021.759241>  
25  
26

27  
28 Kim, G., Lee, W. J., & Shim, H. (2022). Managerial Dilemmas and Entrepreneurial Challenges in the  
29 Ambidexterity of SMEs: A Systematic Review for Execution System. *Sustainability*, 14(24), 16550.  
30 <https://doi.org/10.3390/su142416550>  
31  
32

33  
34 Kim, J., Kwon, K. and Choi, J. (2023), "Rethinking skill development in a VUCA world: firm-specific  
35 skills developed through training and development in South Korea", *Personnel Review*, Vol. ahead-of-  
36 print No. ahead-of-print. <https://doi.org/10.1108/PR-09-2022-0656>  
37  
38

39  
40 Kornelsen, J. (2019). The quest to lead (with) millennials in a VUCA-world: Bridging the gap between  
41 generations. *Leading in a VUCA world: Integrating leadership, discernment and spirituality*, 27-41.  
42 10.1007/978-3-319-98884-9\_2  
43

44  
45 Kurpis, L. H., & Hunter, J. (2016). Developing students' cultural intelligence through an experiential  
46 learning activity. *Journal of Marketing Education*, 39(1), 30-46.  
47 <https://doi.org/10.1177/0273475316653337>  
48  
49

50  
51 Labrague, L. J., & Santos, J. A. (2020). COVID-19 anxiety among front-line nurses: Predictive role of  
52 organisational support, personal resilience and social support. *Journal of Nursing Management*, 28(7),  
53 1653-1661. <https://doi.org/10.1111/jonm.13121>  
54

55  
56 Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data.  
57 *Biometrics*, 33(1), 159. <https://doi.org/10.2307/2529310z>  
58  
59  
60



- 1  
2  
3 Laureiro-Martínez, D., & Brusoni, S. (2018). Cognitive flexibility and adaptive decision-making:  
4 Evidence from a laboratory study of expert decision makers. *Strategic Management Journal*, 39(4),  
5 1031-1058. <https://doi.org/10.1002/smj.2774>  
6  
7  
8  
9 Lee, S., & Moon, M. J. (2022). Managing policy risks using big data analytics in the pandemic era:  
10 VUCA and wicked policy problems. *International Journal of Public Policy*, 16(5/6), 362.  
11 <https://doi.org/10.1504/ijpp.2022.127429>  
12  
13  
14 Lin, Chieh-Peng, and Yuen-Kwan Cheung(2023). "Developing Learning Ambidexterity and Job  
15 Performance: Training and Educational Implications across the Cultural Divide." *Review of Managerial*  
16 *Science* 17.5 1595-614  
17  
18  
19  
20 Liu, Y., Collinson, S., Cooper, C., & Baglieri, D. (2022). International business, innovation and  
21 ambidexterity: A micro-foundational perspective. *International Business Review*, 31(3), 101852.  
22 <https://doi.org/10.1016/j.ibusrev.2021.101852>  
23  
24  
25  
26 Lombardo, M. M., & Eichinger, R. W. (2010). *The career architect development planner : A systematic*  
27 *approach to development including 103 research-based and experience-tested development plans and*  
28 *coaching tips : for learners, managers, mentors, and feedback givers.*  
29  
30  
31  
32 Luthans, F., & Broad, J. D. (2022). Positive psychological capital to help combat the mental health  
33 fallout from the pandemic and VUCA environment. *Organizational Dynamics*, 51(2), 100817.  
34 <https://doi.org/10.1016/j.orgdyn.2020.100817>  
35  
36  
37  
38 Maidaniuc-Chirila, T(2015). "A Multi-mediation Model of the Relationship among Workplace  
39 Bullying, Coping Strategies, Resilience and Employees' Strain: Insights for a Training Programme."  
40 *Psychology of Human Resources Journal* 13.1. 63.  
41  
42  
43  
44 Malik, P., & Garg, P. (2017). Learning organization and work engagement: The mediating role of  
45 employee resilience. *The International Journal of Human Resource Management*, 31(8), 1071-1094.  
46 <https://doi.org/10.1080/09585192.2017.1396549>  
47  
48  
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2  
3 McRae, N., Church, D., Woodside, J., Drewery, D., Fannon, A., & Pretti, J. (2019). Toward a future-  
4 ready talent framework for co-operative and work-integrated learning. In HEAD'19. 5th International  
5 Conference on Higher Education Advances (pp. 1255-1262). Editorial Universitat Politècnica de  
6 València. 10.4995/HEAD19.2019.9319  
7  
8  
9  
10 Millar, C. C., Groth, O., & Mahon, J. F. (2018). Management innovation in a VUCA world: Challenges  
11 and recommendations. *California management review*, 61(1), 5-14.  
12  
13  
14 Milne, J. (2020). What is creativity? *British Journal of Nursing*, 29(12), S4-S4.  
15 <https://doi.org/10.12968/bjon.2020.29.12.s4>  
16  
17  
18 Mincer, J. (1974). *Schooling, Experience, and Earnings*. National Bureau of Economic Research.  
19  
20  
21 Moura, R., Carneiro, T., & Dias, T. (2023). VUCA environment on project success: The effect of project  
22 management methods. *Brazilian Business Review*, 20(3), 236-259.  
23 <https://doi.org/10.15728/bbr.2023.20.3.1.en>  
24  
25  
26 Nicolay, B., Krieger, F., Stadler, M., Gobert, J., & Greiff, S. (2021). Lost in transition – Learning  
27 analytics on the transfer from knowledge acquisition to knowledge application in complex problem  
28 solving. *Computers in Human Behavior*, 115, 106594. <https://doi.org/10.1016/j.chb.2020.106594>  
29  
30  
31  
32 Nowacka, A., & Rzemieniak, M. (2021). The impact of the VUCA environment on the digital  
33 competences of managers in the power industry. *Energies*, 15(1), 185.  
34 <https://doi.org/10.3390/en15010185>  
35  
36  
37 Porkodi, S. (2022). Imperative Strategic Enhancement on Human Resource Management Functions in  
38 VUCA Business Environment–HR Leader Perspective. *International Journal for Research in*  
39 *Engineering Application & Management (IJREAM)*, 8(6), 61-67. 10.35291/2454-9150.2022.0436  
40  
41  
42  
43 Rath, C. R., Grosskopf, S., & Barmeyer, C. (2021). Leadership in the VUCA world-a systematic  
44 literature review and its link to intercultural competencies. *European Journal of Cross-Cultural*  
45 *Competence and Management*, 5(3), 195-219. :10.1504/EJCCM.2021.116890  
46  
47  
48 Ritchie, J., Lewis, J., Professor of Social Policy Jane Lewis, Nicholls, C. M., & Ormston, R. (2013).  
49 *Qualitative research practice: A guide for social science students and researchers*. SAGE.  
50  
51  
52  
53 Rodriguez, A., & Rodriguez, Y. (2015). Metaphors for today's leadership: VUCA world, millennial  
54 and "Cloud leaders". *Journal of Management Development*, 34(7), 854-866.  
55 <https://doi.org/10.1108/jmd-09-2013-0110>  
56  
57  
58 Rowold, J., & Kauffeld, S. (2008). Effects of career-related continuous learning on competencies.  
59 *Personnel Review*, 38(1), 90-101. <https://doi.org/10.1108/00483480910920732>  
60

1  
2  
3 Sanghi, S. (2016). *The handbook of competency mapping: Understanding, designing and implementing*  
4 *competency models in organizations*. SAGE Publishing India.

5  
6  
7 Sarkar, A. (2016). We live in a VUCA world: The importance of responsible leadership. *Development*  
8 *and Learning in Organizations: An International Journal*, 30(3), 9-12. [https://doi.org/10.1108/dlo-07-](https://doi.org/10.1108/dlo-07-2015-0062)  
9 [2015-0062](https://doi.org/10.1108/dlo-07-2015-0062)

10  
11  
12 Setti, I., Sommovigo, V., & Argentero, P. (2020). Enhancing expatriates' assignments success: The  
13 *relationships between cultural intelligence, cross-cultural adaptation and performance*. *Current*  
14 *Psychology*, 41(7), 4291-4311. <https://doi.org/10.1007/s12144-020-00931-w>

15  
16  
17 Shet, S. V., & Pereira, V. (2021). Proposed managerial competencies for industry 4.0 – Implications for  
18 *social sustainability*. *Technological Forecasting and Social Change*, 173, 121080.  
19 <https://doi.org/10.1016/j.techfore.2021.121080>

20  
21  
22 Shet, S. V., Patil, S., & Chandawarkar, M. R. (2019). Competency based superior performance and  
23 *organizational effectiveness*. *International Journal of Productivity and Performance Management*,  
24 68(4), 753-773. <https://doi.org/10.1108/ijppm-03-2018-0128>

25  
26  
27 Shet, S., Poddar, T., Wamba Samuel, F., & Dwivedi, Y. K. (2021). Examining the determinants of  
28 *successful adoption of data analytics in human resource management – A framework for implications*.  
29 *Journal of Business Research*, 131, 311-326.

30  
31  
32 Shliakhovchuk, E. (2021). After cultural literacy: New models of intercultural competency for life and  
33 *work in a VUCA world*. *Educational Review*, 73(2), 229-250.  
34 <https://doi.org/10.1080/00131911.2019.1566211>

35  
36  
37 Spencer, L.M J., & Spencer, S. M. (1993). *Competence at work: Models for superior performance*. John  
38 *Wiley & Sons*.

39  
40  
41 Srinivasan, V., & Makhecha, U. P. (2019). Ambidexterity in CHRO roles: Balancing exploitative with  
42 *explorative roles*. *NHRD Network Journal*, 12(2), 174-185. <https://doi.org/10.1177/2631454119842387>

43  
44  
45 Srivastava, P. (2016). Flexible HR to cater to VUCA times. *Global Journal of Flexible Systems*  
46 *Management*, 17(1), 105-108. <https://doi.org/10.1007/s40171-016-0124-6>

47  
48  
49 Stein, S. (2021). Reimagining global citizenship education for a volatile, uncertain, complex, and  
50 *ambiguous (VUCA) world*. *Globalisation, Societies and Education*, 19(4), 482-495.  
51 <https://doi.org/10.1080/14767724.2021.1904212>

1  
2  
3 Tarba, S. Y., Cooper, S. C., Sarala, R. M., & Junni, P. (2021). HRM challenges in cross-cultural  
4 collaborations: Editorial. *Human Resource Management Review*, 31(3), 100834.  
5 <https://doi.org/10.1016/j.hrmr.2021.100834>  
6  
7

8  
9 Taskan, B., Junça-Silva, A., & Caetano, A. (2022). Clarifying the conceptual map of VUCA: A  
10 systematic review. *International Journal of Organizational Analysis*, 30(7), 196-217.  
11 <https://doi.org/10.1108/ijoa-02-2022-3136>  
12  
13

14  
15 Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource*  
16 *Development Review*, 4(3), 356-367. <https://doi.org/10.1177/1534484305278283>  
17

18  
19 Troise, C., Corvello, V., Ghobadian, A., & O'Regan, N. (2022). How can SMEs successfully navigate  
20 VUCA environment: The role of agility in the digital transformation era. *Technological Forecasting*  
21 *and Social Change*, 174, 121227. <https://doi.org/10.1016/j.techfore.2021.121227>  
22  
23

24  
25 Ungureanu, P., Bertolotti, F., & Macri, D. (2018). Brokers or platforms? A longitudinal study of how  
26 hybrid interorganizational partnerships for regional innovation deal with VUCA environments.  
27 *European Journal of Innovation Management*, 21(4), 636-671. [https://doi.org/10.1108/ejim-01-2018-](https://doi.org/10.1108/ejim-01-2018-0015)  
28 0015  
29

30  
31 Valgeirsdottir, D., & Onarheim, B. (2017). Studying creativity training programs: A methodological  
32 analysis. *Creativity and Innovation Management*, 26(4), 430-439. <https://doi.org/10.1111/caim.12245>  
33  
34

35  
36 Wolanin, M. (2022). Competencies of top management, and the needs of 21st century enterprises in a  
37 VUCA world. *VUZF Review*, 7(2), 170. 10.38188/2534-9228.22.2.18  
38

39  
40 Worley, C. G., & Jules, C. (2020). COVID-19's uncomfortable revelations about agile and sustainable  
41 organizations in a VUCA world. *The Journal of Applied Behavioral Science*, 56(3), 279-283.  
42 <https://doi.org/10.1177/00218863209362>  
43  
44

45  
46 Wüstenberg, S., Greiff, S., & Funke, J. (2012). Complex problem solving — More than reasoning?  
47 *Intelligence*, 40(1), 1-14. <https://doi.org/10.1016/j.intell.2011.11.003>  
48

49  
50 Zhang-Zhang, Y., Rohlfer, S., & Varma, A. (2022). Strategic people management in contemporary  
51 highly dynamic VUCA contexts: A knowledge worker perspective. *Journal of Business Research*, 144,  
52 587-598. <https://doi.org/10.1016/j.jbusres.2021>  
53

54  
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## Figures and Tables

Figure 1: Framework Synthesis Method

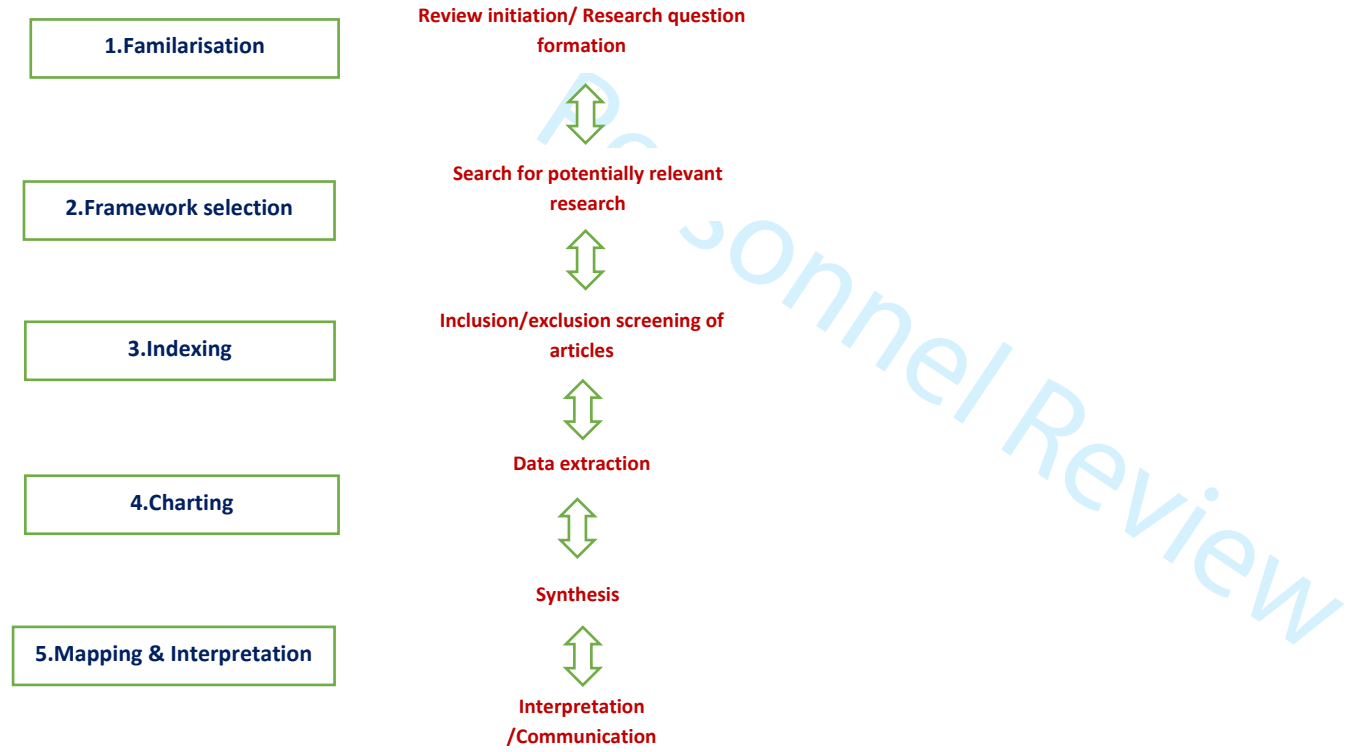
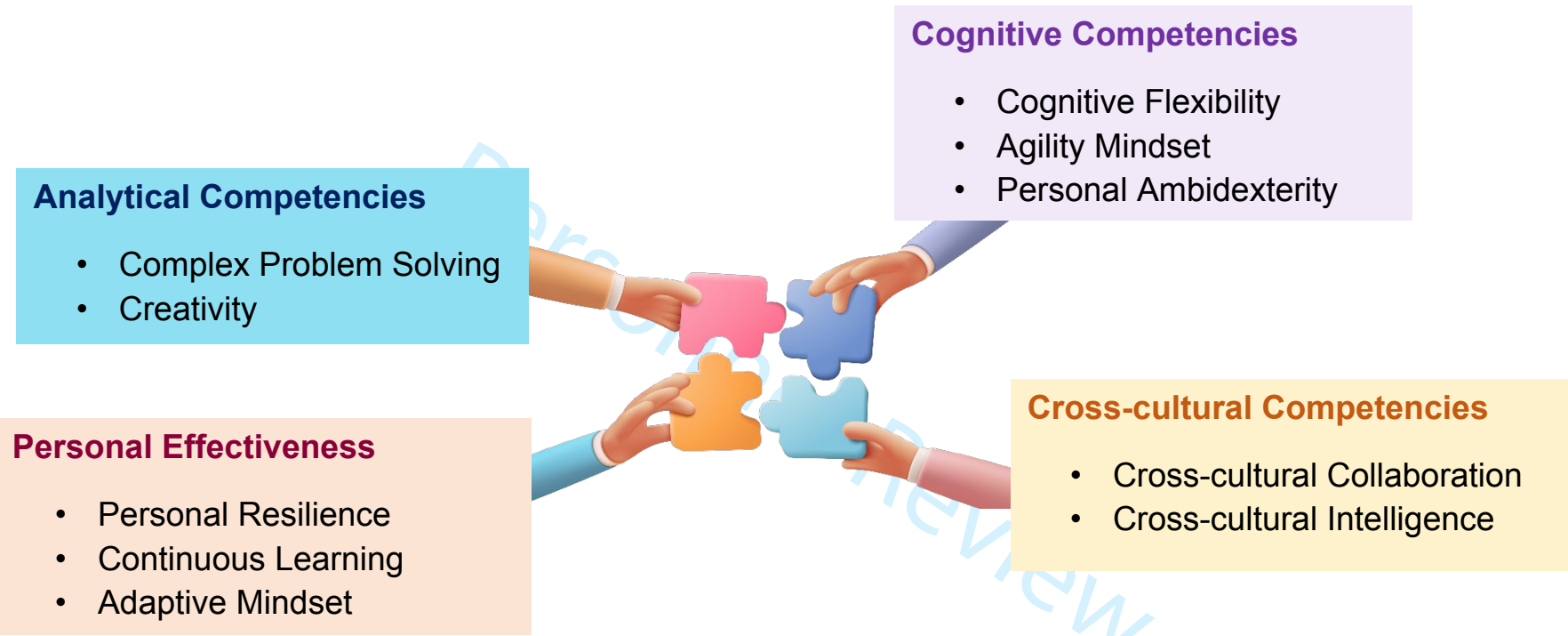


Figure 2: Categorisation of VUCA Competencies



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Table I: Examples of VUCA Challenges and associated competencies.

	Cognitive Flexibility	Agility Mindset	Personal Ambidexterity	Creativity	Complex Problem Solving	Cross Cultural Intelligence	Cross Cultural Collaboration	Continuous Learning	Adaptive Mindset	Personal Resilience
<b>Volatile</b>										
Rapid changes in job roles and responsibilities (Zhang-zhang et al.,2022)									√	
Frequent reorganizations or restructuring. (Bernstein & Euchner, 2003)		√	√						√	
The need to continually update digital skills. (Nowacka & Rzemieniak,2021)								√		
Coping with heavy workloads and tight deadlines. (Labrague, & Santos,2020)	√									√
Understanding global market dynamics and customer needs (Sarkar,2016)						√	√			
Disruption by competitors influencing one’s job (Kim et al.,2023)				√						
<b>Uncertain</b>										
Uncertainty about job security due to market fluctuations (Kim et al.,2023)		√								√
Frequent changes in project priorities and goals (Taskan et al.,2022)	√	√								
Lack of clear career paths or advancement opportunities (Kim et al.,2023)								√		
Adapting to frequent changes without sacrificing mental well-being (Luthans & Broad,2021)									√	√
<b>Complexity</b>										
Dealing with intricate and multifaceted projects (Moura et al.,2023)			√	√	√					
Navigating a complex web of organizational processes and procedures (Thorén, & Vendel, 2019)					√	√				
Managing diverse teams with varying backgrounds and skills (Rodriguez, & Rodriguez, 2015).		√								
Coping with automation and potential job displacement (Millar et al.,2018)								√		
Isolation and reduced face-to-face interaction										√
<b>Ambiguity</b>										
Ambiguity about the company's future direction. (Worley & Jules, 2020)				√						
Unclear expectations from leadership (Srivastava,2016)	√									
Lack of transparent communication about company strategies (Rath et al.,2021)							√			
Rapidly changing industry regulations or market conditions (Troise et al.,2018)					√					

**Table II: Employee Competency Framework for VUCA**

Competency	Definition	Examples of Behavioural Indicators
<b>Cognitive Competencies</b>		
Cognitive Flexibility	Ability to switch between different thoughts, adapt to changing circumstances, and generate new ideas or solutions when faced with novel situations or challenges	<ul style="list-style-type: none"> <li>• Quickly adjusting to changes in plans, priorities, or circumstances without becoming overly stressed or resistant</li> <li>• Actively seeking out and considering new ideas, suggestions, or alternative solutions, even when they differ from one’s initial perspective</li> <li>• Effectively and smoothly transitioning between tasks or projects when required, without losing focus or productivity</li> <li>• Demonstrating comfort with situations that lack clear answers or outcomes and taking action even when some uncertainty exists</li> <li>• Being willing to try new approaches, methods, or strategies to achieve goals, and learning from the results, irrespective of success or failure</li> </ul> <p>(Sanghi, 2016; Spencer and Spencer, 1993)</p>
Agility Mindset	Physical, organisational, and personal adaptability; and ability to act swiftly and effectively in diverse situations	<ul style="list-style-type: none"> <li>• Understanding personal strengths and weaknesses and using this awareness to adapt and improve</li> <li>• Reflecting on one’s actions and decisions, and then making any changes, as required</li> <li>• Bouncing back from setbacks and adversity with a positive attitude and determination</li> <li>• Embracing change as an opportunity for growth and improvement rather than resisting it</li> </ul> <p>(Shet and Pereira, 2021)</p>
Personal	Ability to effectively balance and	<ul style="list-style-type: none"> <li>• Demonstrating the ability to explore and identify new opportunities while efficiently managing and</li> </ul>



Ambidexterity	excel in both exploratory and exploitative activities	<p>optimising existing processes or tasks</p> <ul style="list-style-type: none"> <li>• Recognising the importance of both sets of activities (mentioned in the previous point) and actively seeking to maintain a balance between them</li> <li>• Demonstrating a focus on optimising and improving existing processes to increase efficiency and productivity</li> </ul> <p>(Chandrashekhra <i>et al.</i>, 2012)</p>
<b>Analytical Competencies</b>		
Creativity	Ability to generate original and valuable ideas, solutions, or products; capacity to think innovatively, solve problems in unconventional ways, and contribute to the development of new concepts, designs, or processes	<ul style="list-style-type: none"> <li>• Approaching problems with a fresh perspective and devising innovative strategies for their resolution</li> <li>• Contributing original and imaginative ideas during brainstorming sessions</li> <li>• Establishing connections between apparently unrelated ideas, events, and situations to devise comprehensive solutions for individual problems</li> <li>• Identifying opportunities for creative problem-solving while adhering to established best practices; generating distinctive, yet feasible and valuable solutions to complex problems</li> <li>• Focusing on achieving desired outcomes rather than relying on reactive or immediate fixes; exploring methods to transform ideals into reality and experimenting with novel concepts, techniques, and procedures</li> <li>• Envisioning potential problems and solutions without requiring tangible, real-world examples; proficiently discussing and forecasting facets and repercussions of issues and decisions</li> </ul> <p>(Shet and Pereira, 2021)</p>
Complex Problem Solving	Ability to understand, analyse, and effectively address intricate and multifaceted issues or challenges	<ul style="list-style-type: none"> <li>• Solving problems by first framing the problems, breaking them down into various components, and identifying even concealed or complex aspects</li> <li>• Demonstrating an understanding of the root causes of problems; generating a spectrum of solutions and potential courses of action after taking into consideration the associated benefits, costs, and risks</li> </ul>

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		<ul style="list-style-type: none"> <li>• Exploring a wide range of resources for answers and using creative thinking to discover alternative options; using others’ valuable ideas to aid in solution development and seeking guidance from those who have successfully resolved similar issues</li> <li>• Performing thorough testing of proposed solutions by evaluating their likely real-world effects before moving forward; actively seeking to go beyond the obvious; avoiding premature conclusions</li> <li>• Assessing the chosen course of action after implementation, determining its value and its consequences (Shet and Pereira, 2021)</li> </ul>
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**Cross-cultural Competencies**

Cross-cultural Intelligence	Capability to effectively understand, adapt to, and work with individuals from diverse cultural backgrounds; ability to navigate and communicate in multicultural settings, demonstrating respect and sensitivity to various cultural norms, values, behaviours, and communication styles	<ul style="list-style-type: none"> <li>• Demonstrating an awareness of cultural differences and an appreciation for the diversity of cultures</li> <li>• Being able to identify key cultural dimensions, such as values, customs, and communication styles</li> <li>• Seeking to learn about the cultures of colleagues, clients, or team members from diverse backgrounds</li> <li>• Adapting communication styles and language to suit the cultural preferences and norms of the individuals or groups being communicated with</li> <li>• Applying cultural intelligence to decision-making, leadership, and problem solving in cross-cultural contexts</li> <li>• Advocating for a culture of respect and equality for all individuals, regardless of their cultural background (Lombardo and Eichenger, 2010; Sanghi, 2016; Spencer and Spencer, 1993)</li> </ul>
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Cross-cultural Collaboration	Approach and attitude characterised by a strong belief in the value of working together with people from different backgrounds to achieve common goals, solve problems, and create shared outcomes	<ul style="list-style-type: none"> <li>• Using inclusive language and communication that respects diverse cultural norms, languages, and communication styles</li> <li>• Handling conflicts or misunderstandings in a constructive and respectful manner, promoting positive resolutions</li> <li>• Seeking win–win solutions when cultural differences or misunderstandings arise</li> <li>• Actively participating in collaborative efforts and contributing to the success of the team</li> </ul>
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		<ul style="list-style-type: none"> <li>Focusing on finding solutions to challenges and moving forward, rather than dwelling on problems or obstacles</li> </ul> <p>(Lombardo and Eichinger, 2010; Sanghi, 2016; Spencer and Spencer, 1993)</p>
<b>Personal Effectiveness Competencies</b>		
Continuous Learning	Ability and commitment to proactively seek fresh avenues for acquiring knowledge, consistently seize learning opportunities, and apply newly acquired knowledge and skills in one's work, thus facilitating learning through practical experience	<ul style="list-style-type: none"> <li>Actively seeking and incorporating feedback and various information sources to pinpoint suitable areas for personal development, with a focus on addressing specific learning needs</li> <li>Recognising and engaging in relevant educational activities such as courses, reading, self-directed learning, coaching, and hands-on experiences to fulfil identified learning requirements; actively pursuing learning opportunities</li> <li>Engaging in educational endeavours to extract the most from the learning experience, e.g., activities such as note-taking, asking questions, critically evaluating information, considering practical applications, and completing necessary tasks to optimise learning</li> <li>Applying newfound knowledge, insights, or skills in practical job settings; advancing learning through trial and error; actively using acquired knowledge and skills</li> <li>Embracing unfamiliar or challenging situations for the purpose of learning; willingly undertaking unfamiliar assignments; taking calculated risks to expand one's knowledge and skills</li> </ul> <p>(Lombardo and Eichinger, 2010; Sanghi, 2016; Spencer and Spencer, 1993)</p>
Adaptive Mindset	Capacity and willingness to effectively respond to changing circumstances, new challenges, and uncertain situations; ability to adjust one's thinking, behaviour, and approach to thrive in dynamic	<ul style="list-style-type: none"> <li>Displaying a willingness to adjust and adapt in the face of change; seamlessly integrating new methods</li> <li>Demonstrating the ability to adjust one's work style and approach to meet the specific requirements of a situation or respond effectively to emergencies</li> <li>Demonstrating the ability to maintain an open mind, actively incorporating new information, and deriving insights from it; effectively transitioning from a detailed focus to a broader perspective</li> <li>Actively seeking fresh approaches to problem solving and confidently engaging in improvisation and</li> </ul>

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	environments	experimentation (Lombardo and Eichinger, 2010; Sanghi, 2016; Spencer and Spencer, 1993)
Personal Resilience	Capacity to maintain a positive mindset, manage emotional responses, and continue functioning and growing despite difficult circumstances	<ul style="list-style-type: none"> <li>• Maintaining a positive outlook and focusing on possibilities and opportunities, even in the face of adversity</li> <li>• Managing and regulating emotions in response to difficult situations, demonstrating emotional balance and self-control</li> <li>• Believing in one’s competence and ability to handle adversity and achieve personal goals</li> <li>• Employing healthy and effective coping mechanisms to manage stress and emotional responses</li> <li>• Engaging in self-reflection and self-awareness to understand one’s emotional responses and behaviours</li> </ul> (Lombardo and Eichinger, 2010; Sanghi, 2016; Spencer and Spencer, 1993)

**Table III: Learning and Development (L&D) Interventions for Developing VUCA Competencies in Employees\***

<b>Competency</b>	<b>Classroom Training</b>	<b>On-job Experience and Projects</b>	<b>Informal Learning</b>
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**Cognitive Competencies**

<p>5 Cognitive 6 Flexibility 7 (Laureiro-Martínez 8 and Brusoni, 2018)</p>	<p>Incorporate training that encourages divergent thinking, such as brainstorming sessions or mind mapping.</p> <p>Encourage group members to challenge each other's ideas constructively and consider alternative approaches.</p> <p>Have learners engage in role-playing exercises in which they have to adapt to changing scenarios and react to unexpected developments, thereby helping them become more comfortable with uncertainty.</p>	<p>Give employees the opportunity to work on a variety of projects that require different skills and approaches. The diversity of tasks will force them to adapt to new challenges and think flexibly.</p> <p>Simulate decision-making scenarios that require employees to consider multiple variables and perspectives before arriving at a solution. Discuss the pros and cons of different decisions.</p>	<p>Promote peer-to-peer learning within the organisation. Encourage employees to exchange ideas, share their experiences, and provide feedback to each another. This collaborative approach can expose individuals to various viewpoints and ways of thinking.</p> <p>Encourage employees to seek mentors who could provide guidance, share experiences, and challenge their thinking. Mentors can help mentees navigate unfamiliar situations and offer different perspectives.</p>
<p>21 Agility Mindset 22 (Aftab <i>et al.</i>, 2022; 23 Eilers <i>et al.</i>, 2022)</p>	<p>Introduce learners to agile project management methodologies such as Scrum or Kanban; have them work on projects using these methods to experience first-hand the benefits of adaptability and continuous improvement.</p> <p>Use real-world case studies and scenarios to illustrate situations in which adaptability, quick thinking, and flexibility are crucial.</p> <p>Encourage employees to analyse these cases and discuss different approaches to solving problems.</p>	<p>Implement agile work methodologies such as Scrum, Kanban, and Lean in the workplace. These frameworks encourage adaptability, continuous improvement, and a focus on customer needs. Encourage employees to actively embrace and use these methodologies.</p> <p>Introduce job rotation programmes in which employees periodically switch roles or projects. This will help them develop a broader skill set, experience new challenges, and adapt to different contexts.</p>	<p>Encourage employees to shadow colleagues in different roles or departments. This hands-on experience exposes them to different perspectives and challenges, fostering adaptability.</p> <p>Create a culture of accepting and learning from failure. Encourage employees to openly discuss their setbacks and learnings from the setbacks. Sharing experiences of failure can promote adaptability.</p>
<p>38 Personal 39 Ambidexterity</p>	<p>Design a curriculum that balances exploration and exploitation, such as one that includes</p>	<p>Encourage employees to implement projects or initiatives that have both exploration and</p>	<p>Encourage regular personal reflection on work and personal activities. Ask employees to consider how they balance</p>

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<p>3 (Caniëls and Veld, 4 2016) 5 6 7 8 9 10 11 12 13 14 15 16</p>	<p>courses in intrapreneurship, in which employees learn to explore new business opportunities and simultaneously manage the execution of their ideas (Lin and Yuen-Kwan, 2023).</p> <p>Develop role-playing scenarios that require employees to take on roles involving exploration (e.g., research and development (R&amp;D)) and exploitation (e.g., marketing) within the same project.</p>	<p>exploitation components. Employees will have to switch between these mindsets as the project or initiative progresses.</p> <p>Encourage employees to rotate through different projects or roles. This exposes them to a variety of tasks and fosters adaptability.</p>	<p>exploration (trying new things, seeking opportunities) and exploitation (optimising existing skills or resources). Nudge them to identify areas in which they may need to improve this balance.</p> <p>Facilitate informal engagement of employees with mentors, colleagues, and friends who excel in both exploration and exploitation. Encourage employees to find out more about the experiences of mentors, colleagues, and friends, and to seek advice on balancing these mindsets.</p>
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**Analytical Competencies**

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<p>19 Creativity 20 Valgeirsdottir and 21 Onarheim, 2017) 22 23 24 25 26 27 28 29 30 31 32 33 34</p>	<p>Conduct design thinking workshops and activities that guide employees through the process of problem solving and innovation.</p> <p>Develop intrapreneurship programmes that enable employees to work on innovative projects within the organisation, thereby fostering creativity and entrepreneurial thinking.</p>	<p>Host regular idea-generation sessions or brainstorming meetings in which employees can come together to generate and discuss creative ideas.</p> <p>Encourage employees to prototype and test their ideas. This hands-on approach can lead to practical insights and adaptations.</p>	<p>Encourage employees to cultivate a curious mindset and explore various interests. Encourage them to follow their curiosity and engage in activities that challenge their thinking and stimulate their creativity.</p> <p>Nudge employees to set creative challenges or goals for themselves, such as to think of a new business idea, write a short story, or design a piece of art. The act of setting and meeting creative challenges can enhance fluid creativity.</p> <p>Nudge employees to pursue creative hobbies such as painting, writing, music, or crafting. Engaging in creative activities outside their usual domain can enhance their creative adaptability.</p>
<p>35 Complex Problem 36 Solving (Nicolay <i>et</i> 37 <i>al.</i>, 2021) 38 39</p>	<p>Introduce structured problem-solving models, such as 8D (Eight Disciplines) and the PDCA (Plan-Do-Check-Act) cycle.</p>	<p>Encourage employees to seek out and volunteer for challenging projects or assignments that require the tackling of</p>	<p>Promote employee discussions and knowledge sharing with peers who are also working on complex problems. Learning from others' experiences can be valuable.</p>

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<p>Incorporate problem-solving simulations that mirror complex, real-world scenarios.</p> <p>Use real-life case studies to expose employees to complex problems; discuss the situations, challenges, and potential solutions, encouraging employees to think critically.</p>	<p>complex problems. This practical experience is invaluable for skill development.</p> <p>Provide employees the opportunity to collaborate with colleagues from different departments or teams. Cross-functional teams often work on complex issues, exposing employees to diverse perspectives and approaches.</p>	<p>Encourage employees to take the initiative to learn about complex problem solving on their own. Ask them to use books, online resources, and articles that focus on problem-solving techniques.</p>
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**Cross-cultural Competencies**

<p>Cross-cultural Collaboration (Kurpis and Hunter, 2016)</p>	<p>Attend team-building workshops.</p>	<p>Have employees participate in cross-functional projects with both known and unknown peers.</p>	<p>Encourage employees to volunteer in community clubs and events.</p>
<p>Cross-cultural Intelligence (Kurpis and Hunter, 2016)</p>	<p>Provide foundational knowledge on different cultures, such as knowledge on their values, beliefs, customs, and communication styles; discuss the importance of cultural sensitivity; use models such as Hofstede’s Cultural Dimensions to help employees understand cultural variations (Hofstede and Hofstede, 2001).</p> <p>Teach effective cross-cultural communication strategies, such as active listening, non-verbal communication, and the adaptation of one’s communication style to different cultural norms.</p>	<p>Encourage employees to seek employment or projects in organisations or roles that expose them to diverse work environments. Working alongside individuals from various cultural backgrounds is an effective way to develop cross-cultural intelligence.</p> <p>Provide employees the opportunity to work on global assignments or projects that require them to work in different regions or with international teams. Such opportunities will expose them to diverse cultural contexts and challenges.</p>	<p>Ask employees to take advantage of opportunities to immerse themselves in different cultures in various ways—travel, expatriate assignments, or engagement in diverse cultural communities.</p> <p>Encourage employees to engage in conversations with people from diverse backgrounds, and to listen to others’ experiences, perspectives, and stories to gain insights into their culture and way of life.</p>

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**Personal Effectiveness Competencies**

<p>Personal Resilience (Maidaniuc-Chirila, 2015)</p> <p>Participate in mindfulness or stress management workshops, which could help employees develop emotional resilience by enabling them to stay calm and focused in the face of adversity.</p> <p>Train employees on cognitive behavioural strategies to reframe negative thoughts, manage stress, and build an optimistic mindset.</p>	<p>Encourage employees to view failures as learning opportunities. Promote a culture in which they can openly discuss setbacks, analyse the reasons, and apply the lessons to future challenges.</p>	<p>Encourage employees to engage in community service or volunteer work. Helping others can provide a sense of purpose and resilience because it involves focusing on something greater than oneself.</p> <p>Ask employees to develop self-awareness, understand their emotional reactions to stress and adversity, and identify their strengths and areas in which they may need to build resilience.</p>
<p>Continuous Learning</p> <p>Recommend courses or programmes that have a structured curriculum with a focus on continuous learning; ask employees to choose courses related to their field or interests.</p>	<p>Encourage employees to use their daily work experiences as opportunities for learning. Nudge them to analyse and reflect on their tasks to identify areas in which they can gain new insights or skills.</p> <p>Provide employees the opportunity to volunteer for challenging projects or assignments that require them to acquire new skills or knowledge. These assignments can push them out of their comfort zone and foster continuous learning.</p>	<p>Encourage employees to explore books, articles, and blogs related to their field, as well as topics beyond their expertise. Reading exposes them to new ideas and perspectives.</p> <p>Suggest the use of a journal or reflective diary in which employees could document their learning journey, insights, and key takeaways from their reading and experiences.</p> <p>Nudge employees to collaborate with colleagues and peers to share knowledge and insights. Peer learning can be a valuable source of information and support.</p>
<p>Adaptive Mindset</p> <p>Offer a foundational programme on psychological aspects of adaptation, growth mindset, and emotional intelligence.</p> <p>Encourage employees to analyse case studies and real-life examples of individuals or organisations that have demonstrated adaptive</p>	<p>Encourage employees to identify specific growth goals such as working on new projects, learning new skills, or seeking leadership opportunities in a long-term context.</p> <p>Nudge employees to request regular feedback from supervisors, colleagues, or mentors on</p>	<p>Encourage employees to regularly reflect on their experiences and reactions to change, and identify what went well and what could be improved. This self-reflection can lead to personal growth.</p>



	thinking by exploring how they navigated challenges and change.	their adaptability quotient and to use the feedback to make improvements.	Suggest the practice of mindfulness techniques and emotional regulation for employees to manage stress and maintain a clear mindset when facing challenges.
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\*Table created by the author

Personnel Review