



DESIRED COMPETENCES IN TECHNICAL UNIVERSITY STUDENT MARKETABILITY BASED ON SYSTEMATIC LITERATURE REVIEW (SLR)

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ABSTRACT

“Marketability” refers to securing career opportunities that align with one’s educational background. It highlights that job prospects are influenced by the knowledge, skills, and capabilities that graduates acquire during their university studies. Challenges may emerge when organizations impose competency constraints on their hiring criteria. Research has identified several critical competencies for job seekers, including intrapersonal skills, planning abilities, problem identification and problem-solving skills, effective communication, logical thinking, teamwork, and a proactive attitude. These competencies are grounded in prior research on marketability and supported by various theories, such as the McClelland Competency Theory, the Dunning-Kruger Competency Theory, and the Boyatzis Competency Theory. This study utilizes a comprehensive literature review to demonstrate how competencies impact graduates’ marketability. Therefore, graduates must remain aware of organizations’ specific skill requirements to capitalize on job opportunities that correspond with their educational qualifications. A lack of employability can result in inefficiencies in the job market and contribute to many unemployed graduates.

JEL Classification: D83, E24, O00, Z13

Keywords: Marketability, Competence, McClelland Competency Theory, Dunning-Kruger Competency Theory, Boyatzis Competency Theory

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1. INTRODUCTION

As modern education has progressed, human civilization has evolved by overcoming various challenges. Education plays a crucial role in the development of socioeconomic systems. Mohd Izwan et al. (2016) and Amiruddin et al. (2016) argue that higher education empowers individuals to cultivate human capital, preparing them to become professionals, influential figures, and leaders. Human capital is strengthened by developing initiatives in human capital education. To boost marketability, skills ought to be cultivated (Maclean and Pavlova, 2011). Nevertheless, various issues need to be tackled, primarily related to the significance of individual competence. Higher education's impact on human capital formation may aid in the future development of the national economy. The government's current education initiative is the Malaysia Education Blueprint 2013–2025. It aims to have Malaysia's educational system rank in the top third worldwide in the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS) assessments by 2025. Studies conducted abroad further illustrate how technical skill characteristics significantly impact graduate marketability. The expansion of organizations, people, and communities relies on technical abilities to generate and retain jobs (Abd Samad et al., 2018; Hilal, 2017). Therefore, all parties must collaborate with the government to implement this education policy and generate elevated human capital in all sectors.

Yusof and Jamaluddin (2017) highlight the vital role of education in cultivating intelligent human capital. Such education empowers individuals with the competencies to make informed decisions, engage in strategic planning, and generate meaningful opportunities for themselves, their families, society, and the global community. The benefits of early schooling demonstrate increased student development (Saleh et al., 2022). Higher education institutions (HEIs) are crucial in developing quality human capital to fulfill labor force demand. Involvement in industry through pragmatic or professional training can equip graduates with soft skills. Industry priorities are increasingly centered on technological capabilities, viewed as creating numerous opportunities for globalization, and are embraced by diverse nationalities (Wheeler, 2017). Communication skills have become a valuable asset and an essential component of marketability (Claire, 2020). Furthermore, families' life choices and attitudes toward education significantly influence children's

development.

While recruiting new staff today, businesses prioritize applicants who can apply the system, which is the basis of innovative trends. Data confirms that the Internet opens new business options (Omar, Abdul Rahim, and Othman, 2017). Soft skills, such as perseverance, impulse stability, sophistication in dealings, demonstrating superior etiquette and morality, and having an educated and spiritual outlook, are also required for graduates to establish themselves in the workplace, according to Md Sabil et al. (2021). Marketability is a critical element in securing employment. According to Judge et al. (2001), evaluating and articulating employability presents challenges for employers and organizations. Conversely, Van Ours and Ridder (1995) suggest that employability reflects graduates' capacity to secure and sustain employment. This notion is particularly significant in the digital sector, especially in the context of the COVID-19 pandemic.

1.1 PROBLEM STATEMENT

The most considerable difficulty most graduates encounter, not only in Malaysia but globally, is unemployment. Various efforts have been made to reduce unemployment, such as holding training programs to develop student skills. As a result, students improve their problem-solving, logical thinking, and intrapersonal skills when confronted with problems. According to Hasnan (2021), the work mismatch problem is caused by students' competence limitations. This is crucial because a January 11, 2021, report puts the number of unemployed Malaysians at approximately 705,000. Employment has risen over time because of an imbalanced supply and demand for labor. Because of cross-cultural concerns, multinational organizations face obstacles in staff selection, particularly regarding communication abilities (Saniuk, Caganova, and Saniuk, 2021; Kim, 2014). The mismatch of work in international corporations stems from graduates needing more communication skills. Hence, students must develop communication skills to compete for jobs and ensure marketability. Students must become acquainted with interpersonal communication by giving presentations on work assignments, participating in public speaking, and attending social activities.

Marketability necessitates a combination of theory and practice. The theoretical and practical disparity influences marketability (Artess, Hooley, and Mellors-Bourne, 2017). A good

theory must be followed by skillful actions relevant to today's industry (Norman et al., 2017). Che Alias and Radin A. Rahman (2019) state that students' talents contribute to their industrial marketability. As a result, cultural ties are critical for increasing student marketability. Syed Mohamed, Saptari, and Nor Ma'arof (2018) stated that a culture of collectivism and low power distance could result in long-term success. Furthermore, communication skills in a power-distance culture are interconnected to improve work quality (Chien Jie, Munshid Harun, and Djubair, 2020). Teamwork skills are also essential to creating a positive environment in a multinational corporation. Choo (2021) explained that regulatory control can reduce conflict and uncertainty in task performance. Hence, before entering the workforce, students must foster a culture of avoiding uncertainty by honing their problem-solving skills.

The government also intends to implement an HEI student marketability plan to reduce student unemployment. The purpose of the Higher Education Institute (HEI) Graduate Employability Strategic Plan 2021–2025, according to Parzi (2021), is to boost student employability to cope with challenges arising from the COVID-19 pandemic. Several initiatives were carried out, including a program with Shopee whereby 5,000 students were allowed to open shops and be guided by experts for free. Furthermore, the government will work with the Perodua company to provide 164 students with guaranteed job opportunities after training. Following that, Perbadanan Usahawan Nasional Bhd (PUNB) and Tekun Nasional will target 1,000 students in an entrepreneurship program.

1.2 RESEARCH GAPS

Based on the above justification, research focusing on competency still needs to be empirically understated. We concentrate on competency among technical university graduates in the framework of the study. This is because technical universities demand knowledge and skills that combine to increase competency. This research gap focuses on the study's relevance to students because students still need to be convinced about empowering their work culture and technical learning. Priority will encourage students to be aware of the latest industry sectors through this study to stay caught up in the current modernization. Furthermore, students can investigate the most recent marketability requirements of industry, which are heavily influenced by specific cultures because of the competitive job market. In the

context of Malaysian technical universities, the research gap also focuses on industrial needs. Zainal (2018) stated that the Department of Higher Education (JPT) had cancelled 38 academic programs in public universities because they are unrelated to future job growth. According to the Fourth Industrial Revolution, programs must be relevant and aligned with industry needs, particularly those at technical universities. Researchers consider this study essential, but it still needs to be more detailed because the factors and needs of a field still need to be thoroughly studied. Cost reduction also affects technical universities (Aziz, 2019).

Industry researchers highlight the importance of aligning human capital with the strategic objectives of the industry. Organizations need to attract skilled professionals to reduce employee training and development costs. The significance of this study lies in its potential to enhance organizational productivity and reputation by recruiting qualified individuals. This is particularly relevant given the rapid advancements in digital technology, data analytics, and manufacturing technologies that support national development (Schaffar et al., 2021). Furthermore, researchers can significantly contribute to establishing career programs in Malaysia, particularly about various initiatives to foster economic growth.

2. COMPETENCE

The ability of an individual to navigate workplace demands, including knowledge, skills, attitudes, and talents, is described as competence. Jaafar, Ab Halim and Junoh (2015) state that technical and vocational graduates must stand out in their competency skills to enhance relevant career opportunities. University education is a philosophical and intellectual endeavor. The capacity to accomplish a task with the practical information learned is alluded to as a skill. This describes how well the idea and method synthesize psychological-behavioral mechanisms that go through a synergistic phase to yield comprehensive and holistic competence qualities. According to previous studies, notably Boyatzis (1982), prospective graduates should exhibit seven main competencies: intrapersonal skills, planning skills, problem identification, and problem-solving skills, communication, logical thinking skills, teamwork, and a proactive attitude. These competencies and skills are essential, especially for technical graduates, as they enhance marketability and provide quality

(Hojeij and Al Marzouqi, 2022; Okolie et al., 2020; Lai, Hamisu and Mohd Salleh, 2019).

2.1 INTRAPERSONAL SKILLS

Individual ability to collaborate with others, formally or informally, belongs to the category of intrapersonal abilities. Rashidi (2018) contends that knowledge, talents, and distinctive personal characteristics -- three elements of intrapersonal intelligence -- are present in aspirational graduates. Madlan et al. (2015) assert that intrapersonal abilities influence organizational progress. Hence, prospective employers prioritize these skills to ensure that more efficient and superior work is produced. To effectively adapt and endure any friction or job pressure, graduates must learn to manage their intrapersonal talents (Mohd Zubir et al., 2021). In technical terms, intrapersonal talents refer to the aptitude, assurance, and dependability to structure what will be performed, according to Legusov et al. (2022). Through the project's consequences, it indirectly operates as an identified and managed risk.

2.1.1 IMPORTANCE OF INTRAPERSONAL SKILLS

Intrapersonal abilities are those associated with communication within oneself. According to Aizenkot and David (2022), intrapersonal skills are an individual's ability to accurately absorb and follow work instructions. Furthermore, intrapersonal skills allow a person to demonstrate self-sufficiency in achieving goals. Ali (2021) stated that intrapersonal abilities significantly impact success or failure. This skill is a process in which information, memory, and thinking are processed (Rahman, 2010). Intrapersonal talents enable a person to recognize good value and self-confidence. According to Abbas (2018), aspirational graduates possess knowledge, talents, and distinct personal characteristics, which are three elements that constitute intrapersonal intelligence. According to Madlan et al. (2015), intrapersonal qualities influence organizational growth. Aspirant graduates must learn to manage their intrapersonal abilities to effectively adapt in the workplace and embrace any challenges or job pressure (Mohd Zubir et al., 2021). Research by Legusov et al. (2022) shows that intrapersonal talents are aptitude, absolute certainty, and trustworthiness for organizing what would be accomplished.

2.2 PLANNING SKILLS

Planning ability is defined as managing, coordinating, and executing all organizational activities. According to Mansor et al. (2015), planning attributes are the ability to manage and recognize the actions the practitioner must follow to control things efficiently and minimize errors. A study by Osman, Mohd Nor, and Ujang (2020) shows that individuals lacking planning usually fail and perpetrate the same blunders. A sensible option can consider the likely aspects and mistakes when executing work and producing beneficial outcomes. A study by Legusov et al. (2022) at a technical institution highlighted the importance of construction as an essential soft skill for fostering skill development among technical students. It emphasized that effective planning is crucial for monitoring and enhancing safe work systems. When flaws are identified during the process, components can be modified and activities corrected, as Gambo et al. (2021) noted.

2.2.1 IMPORTANCE OF IMPLEMENTING PLANNING SKILLS

Planning abilities are organizing steps and actions to attain organizational goals. According to Mohd Azri, Sahid, and A. Hamid (2019), proper planning can help solve difficulties while ensuring the quality of work under regulated conditions within the given time frame. Planning abilities can prevent something undesirable from occurring (Arifin et al., 2021), leading to more effective and efficient work performance. Thus, this skill should be nurtured in elementary school to boost self-confidence in making sound decisions. According to Mansor et al. (2015), management traits are the ability to organize and recognize the steps professionals need to regulate things efficiently and reduce mishaps. According to Osman et al. (2020), individuals who fail to plan regularly tend to underperform by repeating the same mistakes. Legusov et al. (2022) discovered that construction skills are vital for fostering skill development among technical students at a college in Kenya. Practical planning abilities can help prevent undesirable outcomes. Musa et al. (2021) emphasize that project managers with solid planning skills can mitigate challenges that cause project delays, such as personnel shortages, delayed payments to suppliers, and holdups in obtaining raw materials. Thus, these skills are essential for achieving work objectives.

2.3 PROBLEM-IDENTIFYING AND PROBLEM-SOLVING SKILLS

According to Salim (2012), discovering and solving problems is an individual talent for leveraging common sense to critically and analytically resolve an emerging issue. Mohd Azri et al. (2019) interpret problem-solving abilities as the individual's capability to cope with the associated anxiety, search for solutions, and develop fresh alternative ideas. It is also possible to comprehend the mechanism of inventiveness in problem-solving and effectively select approaches (Kanwar, Balasubramaniam, and Alexis, 2019; Kiong et al., 2019). Moreover, as stated by Nor Wajihah (2018), these qualities are essential for bringing about shifts, innovations, and paradigms in the quality of work to be created following current developments more geared to the digital-based, online, and remote work paradigm.

2.3.1 IMPORTANCE OF PROBLEM-IDENTIFYING AND PROBLEM-SOLVING SKILLS

Salim (2012) states that a willingness to recognize and overcome challenges is a personality trait for using logic to think critically and analytically about problems. In contrast, Mohd Azri et al. (2019) define problem-solving as the individual's ability to search for solutions and generate inventive concepts for alternatives when encountering anxiety. It is also crucial to comprehend the mechanism of uniqueness in issue-solving and select techniques effectively (Kanwar et al., 2019; Kiong et al., 2019; Nor Wajihah, 2018). The ability to detect and solve problems is a skill that involves common sense to solve problems. The issue must be investigated, and its causes and factors must be determined. The research findings will then aid in the ideal deal completion of the problem-solving process. Furthermore, this skill must be applied creatively and critically to produce quality and effective problem-solving (Mohd Azri et al., 2019). Wahab and Saud (2021) state that employers value problem-solving abilities and technical skills when hiring. Mustapha (2012) stated that Malaysia has a robust workforce of technical graduates, but employers want skilled problem-solvers. This is because problem-solving abilities result in a high-quality workforce. These skills are essential for students when facing problem-solving (Hamdan et al., 2021). This will also occur in the workplace; a person must be intelligent at problem-solving to tackle workplace challenges.

2.4 COMMUNICATION SKILLS

Their communication skills can effectively highlight technical graduates' strengths (Ramamurthy, Alias, and DeWitt, 2020; Badenhorst and Radile, 2018). In essence, it is a leadership quality that can increase graduate marketability. Communication is the leading workplace activity; hence, Saleh (2021) contends that this ability merits priority. A person's capacity to effectively communicate with others is classified as having communication skills by Mahbob, Sulaiman, and Mahmud (2019). How much the presenter and recipient comprehend the information may also be used to determine communication success. Abd Samad et al. (2014) cite many verbal and nonverbal communication systems. The challenge with communication skills for ambitious graduates is that they need to be more proficient at achieving this goal. Future graduates adapt communication skills through conversations conducted to express ideas through communication better (Husain et al., 2015). Various communication skill challenges also crop up (Ibrahim and Mahbob, 2022). Prospective graduates struggle to control their nervousness, stress, and self-doubt while speaking in front of massive gatherings.

2.4.1 IMPORTANCE OF COMMUNICATION SKILLS

The ability to interact with others is referred to as communication skills. These abilities include writing, reading, arguing, listening, and providing instructions. These abilities are utilized to share opinions, ideas, or facts accurately and effectively. According to Mohd Ishar et al. (2020), practical communication skills might influence an individual's professionalism. Employees appear more mature and cleverer if they are wise to express thoughts and properly convey information. Furthermore, communication skills, according to Ibrahim and Mahbob (2021), are a two-way process in communicating information and influencing the understanding and actions of the other party, whether they agree or disagree with an issue presented. Since communication is the most significant workplace endeavor, Saleh (2021) believes this ability should be prioritized.

The communication capabilities of technical graduates can successfully highlight their unique abilities (Ramamurthy et al., 2020; Mahbob et al., 2019; Badenhorst and Radile, 2018). In addition, Abd Samad et al. (2014) mentions several verbal and nonverbal communication mechanisms. It is as if future graduates adapt communication skills through exchanges to express notions better

(Hussin et al., 2021; Husain et al., 2015). Mastering communication skills poses several difficulties (Ibrahim and Mahbob, 2022). Prospective graduates often struggle to regulate their apprehension, stress, and lack of self-assurance while speaking in front of people. Communication skills are essential for students to answer employer inquiries during the interview. Students must demonstrate their communication skills to gain employer trust. Mikkelson, Sloan, and Tietsort (2021) explained that good communication can achieve goals and targets besides reducing planning errors. Communication is critical in an organization to channel reliable information. Hussin et al. (2021) argue that strengthening communication skills through presentation, ethnography, written assignments, seminar preparation, and new platform use can assist learners to concentrate less on final examinations only.

2.5 LOGICAL THINKING SKILLS

Junoh and Mohamad (2019) affirm that individuals who have analytical reasoning can debate, assess factual reliability, generate assumptions, and complete tasks. This reveals how the development of logical thinking abilities results in improved professionalism. Boyatzis (1982) held that logical reasoning should be employed in responding to convictions. Evaluation and cognitive mobility are necessary for the scope, specification, and description of the job and obligations so that graduate students can react coherently and complete tasks consistent with their vocational appropriateness (Lamb, 2011).

2.5.1 IMPORTANCE OF LOGICAL THINKING SKILLS

Rationality is the ability to examine anything using the reality the human mind acknowledges. This talent is applied while doing something based on the reasoning process, as witnessed during the thinking phase. This thinking process will also evaluate feelings to analyze the mind and heart to generate thoughtful and quality responses (Awang et al., 2012). This talent is essential to company organizational practices to ensure employee creativity and critical thinking skills. According to Abu Bakar et al. (2020), creative, necessary, and inventive thinking skills are a degree of competency that involves the individual's mental abilities. According to Junoh and Mohamad (2019), individuals with analytical reasoning can participate in argumentation, assess the reliability of facts, generate assumptions, and complete a task. The evaluation and cognitive

mobility processes must describe employment and graduate duties following their occupational suitability (Lamb, 2011). This is significant because it reinforces the potential for nurturing technical skills to create a sustainable economic sector (Karim, 2019).

Hence, logical thinking skills must be honed in school. Mohamad Sulaiman et al. (2021) discussed the logical thinking skill development process essential for technical students. This is because individuals who fail to apply logical thinking skills when problem-solving expose themselves to significant risks. Determining the optimal course of action and company strategy requires rational thought. Graduates ought to consider decisions being made at work comprehensively. This is significant because it reinforces urban and rural area growth and the potential of technical skills to create a sustainable economic sector (Abbas, 2019).

2.6 TEAMWORK SKILLS

Nasrin and Morshidi (2015) mention the importance of cooperation abilities, particularly in work-related fields necessitating high levels of energy and technological needs. Halijah and Faizal (2019) regard cooperation as producing better work results than working individually since it involves merging individual efforts, knowledge, capabilities, and competencies with those of others. Synergy and collaboration refer to the process of working together effectively. Hamdan et al. (2021) assert that engaging industry and community is crucial for socioeconomic development. Collaborations and partnerships are essential for expanding opportunities, especially among international investors. Pavlova (2019) notes that for technical employees to build trust and collaborate effectively within their organization, the government and various educational sectors must be actively involved. Furthermore, Krijgsheld, Tummers, and Scheepers (2022) indicate that industrial and academic institutions should collaborate to implement technical initiatives. This underscores the importance of nurturing cooperation and collaboration to prepare for successful teamwork (Affandi et al., 2020).

2.6.1 IMPORTANCE OF TEAMWORK SKILLS

Teamwork abilities encompass mental, physical, and emotional collaboration, which is vital for achieving organizational goals. Each group member works together to complete tasks assigned to reach a specific objective. Ngadiman and Jamaludin (2019) state that

employers value cooperation skills when evaluating potential candidates. Employees are often assigned collaborative responsibilities when assessed using a team rubric. Okolie et al. (2020) explain that teamwork abilities represent a cognitive process in which group members combine their ideas to generate superior solutions for completing job assignments. Following that, Mohd Azlan, Hasnah, and Irdayanti (2021) defined team skills as a combination of individual ability with others regarding ability, knowledge, existing skills, and commitment to completing tasks. This talent emphasizes teamwork to attain team goals. The ability to collaborate, particularly at work, demands a high level of technological expertise and energy (Nasrin and Morshidi, 2015). Furthermore, Noorajamsha and Azizhan (2015) argue that collaboration produces more effective results than laboring alone since it involves integrating individual knowledge, skills, and other competencies (Halijah and Faizal, 2019). For example, Ibrahim and Mahbon (2021) emphasize the significance of socioeconomic growth, industry, and community engagement in their research. Pavlova (2019) contends that for technical professionals to collaborate effectively and value their organizations, it is crucial for both the government and various educational sectors to be involved. Consequently, a partnership between industry and academic institutions is essential to enhance job market stability and provide employment opportunities that meet industry demands (Krijgsheld et al., 2022; Affandi et al., 2020).

2.7 PROACTIVE ATTITUDE SKILLS

Ismail et al. (2018) state that a proactive mentality and social networks affect proactive attitude development. Prospective graduates must always be proactive to improve their competence and alleviate stress while completing projects. They must also be intelligent and capable of averting hazards and considering workplace health and safety concerns while on duty. Proactive individuals enjoy more excellent opportunities for both personal and professional growth. They always stay abreast of the latest news and any labor force adjustments. Digital requirements are one of the priorities and essential requirements, so this should be considered (Mohd Azri et al., 2019). To keep pace with technological advances, graduates must continuously develop their abilities. According to McGrath (2002), proactive personnel must be developed by creating new ideas and skills in parallel.

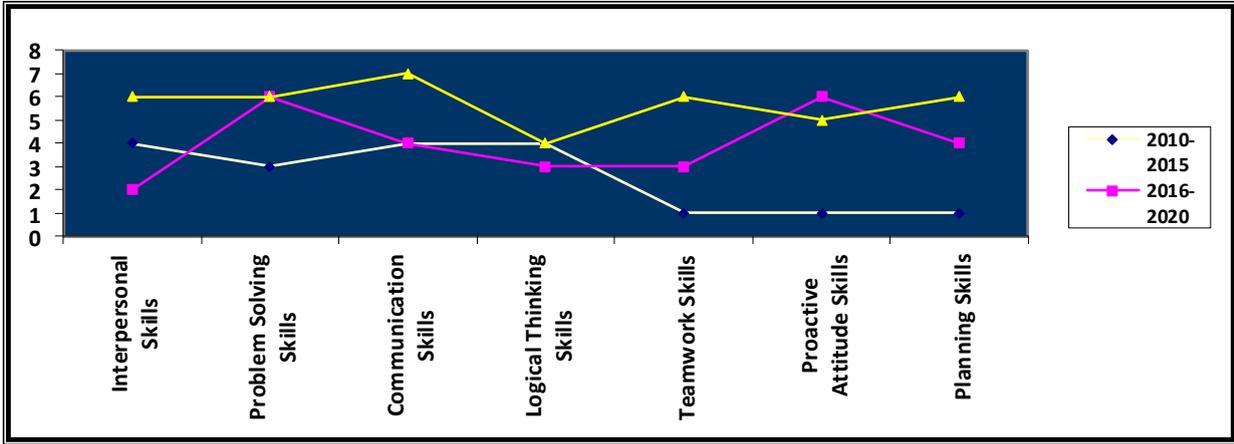
2.7.1 IMPORTANCE OF PROACTIVE ATTITUDE SKILLS

The ability to anticipate future events is known as a “proactive mindset.” Proactive employee behavior is a dynamic process that enhances the current situation in anticipation of something that may damage the career (Ismail et al., 2018). As one of the goals and critical requirements, digital standards should be considered (Mohd Azri et al., 2019). Graduates must continuously expand their abilities to keep up with technological advances implemented since the 1990s. According to McGrath (2002), developing enthusiastic staff members involves simultaneously cultivating innovative ideas and skills. Wan Abdullah et al. (2022) underscore that cognitive and attitudinal growth are the two most essential aspects of professional development, enhancing overall marketability. Ibrahim and Mahbob (2021) note that proactive individuals can generate creative and original ideas. Ismail et al. (2018) define proactive skills as an individual’s ability to prepare for potential future opportunities. Furthermore, Veronika, Veronika, and Beate (2016) emphasize that proactive abilities are vital for individuals and organizations seeking to adapt and successfully achieve their objectives.

3. RESEARCH METHODOLOGY: ANALYZING DISCUSSION OF SYSTEMATIC LITERATURE REVIEW (SLR) FOR PERSPECTIVE ON COMPETENCE

Table 1 in Section 3.4 displays the SLR analysis, which presents the perspectives of previous researchers scrutinized critically in the study. According to competence scholar Boyatzis, the discussion's findings demonstrate that the primary stance on competence is focused on aspects of ongoing development that need some essential abilities (Boyatzis, 1982). Completing competencies will summarise the requirements for taking advantage of marketability chances. Intrapersonal skills, planning skills, problem-solving skills, communication skills, logical thinking skills, teamwork skills, and proactive attitude skills are a selection of the competency qualities researchers have highlighted as fundamental to marketability. Table 1 lists each research resource. Figure 1 gives the overall distribution of this SLR approach; it depicts the continuity of all the skills discussed, which are still relevant today. The analysis is based on previous research and the study's theoretical foundation, spanning 2015 to 2022. This demonstrates that the study's identified competencies are still relevant and should be improved in the future following the opinions of previous researchers.

FIGURE 1
Based on Research Studies From 2015 to 2022, SLR Findings for Future Planning Competence of
Technical University Students



3.1 JOB-RELEVANT EDUCATION

According to 2021 higher education figures, 14,595 of Malaysia's 123,362 public university graduates are still unemployed. Out of 93,238 private university graduates, 18,391 are still unemployed. Private university graduate unemployment is rated at 19.7%, whereas public university graduate unemployment is 11.8%. Graduates still unemployed are seeking work; the work available is unsuitable, and they are awaiting offers to continue their studies. According to a study by Hanapia et al. (2014), most community college technical graduates need help finding jobs matching their acquired skills. Female technical graduates experience moderate employability levels, according to Judge et al. (2021). Yusuf and Umar (2018) observed that many graduates face unemployment primarily because they have unrealistic expectations regarding salaries and benefits. Many of these individuals enter the job market believing they should receive high compensation and extensive perks right out of university, which may not align with the typical entry-level positions. This disconnect between their expectations and the reality of the job market contributes to their prolonged unemployment, as they often need to pay more attention to suitable job opportunities that may not initially meet their financial expectations. This concern was echoed in a report by Zainal (2019), which pointed out that securing employment contributes to an employment mismatch. Consequently, some graduates with technical degrees are compelled to work as food deliverers to support their families while earning a reasonable income. Furthermore, Rene and Michael (2022) noted that shifts in job demand exert pressure on industrialized nations.

3.2 COMPETENCE ENCOMPASSES A VARIETY OF COMPREHENSIVE COMPETENCIES

Malaysia's employment scenario still needs to be improved. Job offers still need to be expanded, affecting student marketability. According to a report published in Berita Harian Online by Aziz (2021), Malaysia's unemployment rate is rising. Statistics from the Department of Statistics Malaysia show that unemployment in Malaysia grew to 772,900 individuals at a rate of 4.8% in December 2020. The global health crisis significantly contributed to the rise in the unemployment rate in 2020.

This illustrates why labor and economic growth are critical for a country or family. The economic growth rate is directly proportional to the employment rate. According to Abu Bakar et al. (2020), work-life balance is vital in reaching desired goals. The rising cost of living and the varied daily cost demands have caused many people to encounter job placement challenges, particularly when combined with their educational background. This conclusion is backed by Mohd Aqmin et al. (2018), who discovered that increased spending is the primary source of rising living costs. This influences job insecurity. This is because someone still not accepted for a job based on their qualifications will hunt for any job to meet their living expenses. Some people are eager to accept jobs even for lower pay. For example, starting pay in engineering can be as low as 2,000 ringgit per month (Muhammad Yusri, 2022). The consequences may discourage young people from pursuing the engineering profession and lower the trained workforce in future.

3.3 PERSISTENT COMPETENCY ENHANCEMENT IS ESSENTIAL

Marketability skills are defined as a person's abilities, skills, and expertise in executing jobs efficiently (Abd Aziz, 2020). According to Mohd Izwan et al. (2016), marketability skills enable businesses to pick employees. Omar et al. (2017) state that individual abilities will determine success. The principal criterion the organization requires throughout the job selection process is the advantage of a competent employee. Employers are likelier to hire excellent and competent workers based on available positions (Wahab and Saud, 2021). This is related to saving money, energy, and time. Competent individuals do not require much training and direction from supervisors or superiors. Specialists indirectly contribute to organizational productivity in the long run. Outstanding academic accomplishment is not the primary element in today's graduate marketability (Zakaria and Daud, 2021).

According to Mohd Makhbul, Yussof, and Awang (2015), graduates find it challenging to get work if their abilities are lacking. Employers are very selective in vetting job candidates and place a high value on communication and interpersonal skills within an organization. According to Zakaria et al. (2020), a company's primary goal in workforce selection is mastery of high-level skills. Students must prepare themselves with marketable abilities; the inference is that individuals lacking talent will face limited work options.

3.4 ESTABLISHING MARKETABILITY REQUIRES VARIETY OF COMPETENCIES

Marketability is the ability of people in the industrial sector to find work or keep their current position. According to Mohd Azri et al. (2019), marketability is a talent graduates need to find a job by applying skills-based learning under employer, job market, and organization needs. Marketability is also a talent students must possess to obtain a job that matches their qualifications and skills as demanded by employers or the industry (Mohd Azri et al., 2019). Student marketability is determined by the professional study program and other talents demonstrated, such as communication, problem-solving, logical thinking, and collaborative skills (Yusof and Jamaluddin, 2017). Furthermore, according to Fatima (2016), marketability is a person's ability to find and keep a job and perform tasks following industry and employer requirements. Ghani et al. (2018) define marketability as the readiness to meet employment demands based on industry demand.

Table 1 lists the SLR findings of this study on competence from the marketability perspective.

TABLE 1
SLR Competence in Marketability Perspective

| Previous Researchers (Sources) | A Competency Perspective in Employability |
|--|---|
| Van Ours and Ridder (1995), Fisher (2009), David (2019), Hanapia et al. (2014), Mohd Izwan et al. (2016), Yusof and Jamaluddin (2017), Anttila and Jussila (2017), Yusuf and Umar (2018), Misbah et al. (2020), Halim and Sahid (2020), Sullivan, Ragogna, and Dithurbide (2019), Martin et al. (2021), Judge et al. (2021), Rene et al. (2022). | Education relevant to the job |
| McClelland (1962), Boyatzis (1982), Cecil and Christo (2003), Omar et al. (2017), Radin and Yasin (2018), Mohd Aqmin et al. (2018), Ali and Marwan (2019), Abu Bakar et al. (2020), Md Sabil et al. (2021), Saleh et al. (2022), Muhammad Yusri (2022), Mohd Hamid and Ewan (2022). | Competence encompasses a variety of comprehensive competencies. |

TABLE 1 (continued)

| Previous Researchers (Sources) | A Competency Perspective in Employability |
|---|---|
| <p>Arnolds and Boshoff (2022), David (2014), Jaafar et al. (2015), Mohd Makhbul et al. (2015), Mohd Izwan et al. (2016), Hilal (2017), Wheeler (2017), Omar et al. (2017), Rashidi (2018), Philip, Matthew and Lori (2019), Okolie et al. (2020), Fairuz (2020), Abd Aziz (2020), Zakaria et al. (2020), Rosli et al. (2021), Wahab and Saud (2021).</p> | <p>Persistent competency enhancement is essential.</p> |
| <p>Judge et al. (2001), Maclean and Pavlova (2011), Yusof and Jamaluddin (2015), Jaafar et al. (2015), Yusof and Jamaluddin (2017), Ghani et al. (2018), Mohd Azri et al. (2019), Okolie et al. (2020), Misbah et al. (2020), Saleh et al. (2020), Asri (2020), Hojeij and Al Marzouqi (2022).</p> | <p>Establishing marketability opportunities requires a variety of competencies.</p> |
| <p>Ali (2021), Rahman (2010), Madlan et al. (2015), Ma'sa (2017), Karim (2019), Ismail, Mohd Nopiah and Rasul (2018), Leman, Kurinec, and Rowatt (2023), Yahaya et al. (2021), Shirandula (2021), Md Sabil et al. (2021), Legusov et al. (2022), Aizenkot and David (2022).</p> | <p>The importance of intrapersonal skills</p> |
| <p>Rahman (2010), Salim (2012), Mustapha (2012), Ismail (2017), Nor Wajihah (2018), Mohd Azri et al. (2019), Kanwar et al. (2019), Kiong et al. (2019), Mohd Azri (2019), Hakan and Erdogan (2021), Waskito, Wulansari, and Kyaw (2021), Wahab and Saud (2021), Hamdan et al. (2021), Wan Abdullah et al. (2022), Adri et al. (2022).</p> | <p>The importance of identifying and problem-solving skills</p> |
| <p>Winter (1998), Salim et al. (2012), Abd Samad et al. (2014), Husain et al. (2015), Badenhorst and Radile (2018), Mahbob et al. (2019), Lai et al. (2019), Che Fazila and Shaffie (2020), Ramamurthy, Alias and DeWitt (2020), Mohd Ishar et al. (2020), Saleh et al. (2021), Hussin et al. (2021), Ibrahim and Mahbob (2021), Mikkelson et al. (2021), Ibrahim and Mahbob (2022)</p> | <p>The importance of communication skills</p> |

TABLE 1 (*continued*)

| Previous Researchers (Sources) | A Competency Perspective in Employability |
|--|---|
| Boyatzis (1982), Lamb (2011), Awang et al. (2012), Suarta et al. (2018), Junoh and Mohamad (2019), Abbas (2019), Abu Bakar et al. (2020), Mohd Zubir et al. (2021), Mohamad Sulaiman et al. (2021), Yamamoto and Yang (2022). | The importance of logical thinking skills |
| Nasrin and Morshidi (2015), Ngadiman and Jamaluddin (2018), Halijah and Faizal (2019), Pavlova (2019), Affandi et al. (2020), Misbah et al. (2020), Schaffar et al. (2021), Birhan and Merso (2021), Mohd Azlan et al. (2021), Krijgsheld et al. (2022). | The importance of putting teamwork skills |
| McGrath (2002), Amiruddin et al. (2016), Veronika et al. (2016), Ismail et al. (2018), Ismail et al. (2018), Mohd Azri et al. (2019), David (2019), Schaffar et al. (2021), Yahaya et al. (2020), Abdul Hamid and Ismail (2021), Tremayne et al. (2022), Rodzalan et al. (2022). | The importance of putting proactive attitude skills |

4. COMPETENCY THEORY

Competency theory centres on the essential elements of idea development and their relevance to problem-solving perspectives. Mohd Hamid and Ewan (2022) note that showcasing competency theory can be challenging. The outcomes produced within this framework can reveal an individual's level of knowledge, leading to classifications of competence or incompetence (Schaffar et al., 2021; Nurtanto et al., 2020). In general, competence is vital for attaining greater desirability. Previous research has emphasized both the significance and pitfalls associated with competency. Key issues include competence serving as a barrier to marketability, its influence on the quality of individuals and organizations, and its role in mastering skills and information—topics that generate considerable discussion (Martin et al., 2021; Misbah et al., 2020; Anttila and Jussila, 2017). Investigations into competency commonly reference three principal theories: McClelland's, Dunning-Kruger's, and Boyatzis's theories.

4.1 McCLELLAND'S THEORY OF COMPETENCE

According to this theory, everyone requires particular abilities, characteristics, motivations, and social and personal roles to do their jobs more professionally and with higher quality. This approach strongly emphasizes the value of observing workers in action as they complete tasks. A person's motivation would be strengthened if given motivation with understanding and active self-involvement in the endeavors performed, contends McClelland in Aziz (1997). According to McClelland's theory, there are three desires: affiliation needs, power needs, and achievement needs (refer to Figure 2). Cooperative task performance refers to possessing affiliation demands to accomplish work objectives. A person who desires power will do anything to exert influence and impact over others. Recognizing the importance of rewarding achievement when tasks are completed is essential. This would enhance each person's enthusiasm for completing tasks adequately.

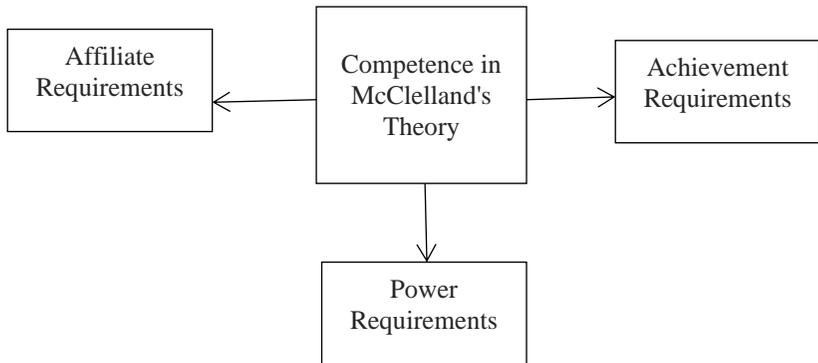
McClelland's theory has been the basis for several prior studies. It considers an individual's capability. This theory, however, is inapplicable to the latest economic development competence model, according to Finison (1976). The data used to estimate economic progress is imprecise and erroneous. The circumstances were appropriate for career growth in 1976, while exposure to economic development and marketability was still insufficient. Additional research, however, demonstrates that McClelland's hypothesis contributes to assessing a person's personality.

Personality evaluation enhances a worker's employability (Yahaya et al., 2021; Fisher, 2009). To apply these theories into practice and determine an employee's aptitude through their inherent personality, assessing applicants through interviews is essential. Notably, during the interviews conducted by the panels of interviewers during the recruiting process, the responses and feedback presented may indicate the efficiency, intellect, rationality, and talent attainment among candidates through their competency (Winter, 1998).

Cecil and Christo (2023) outline the link between McClelland's theory and human resources, stating that this notion is essential to maintaining productive human capital. Entrepreneurship is a result of activity that involves human resources. McClelland (1962) contends that the organization's destiny hinges on its desire for accomplishments. Employees must be provided with opportunities for stimulation to increase their energy and enthusiasm at work. Indirectly,

it promotes the firm's ability to a higher degree by providing products and deliverables (Ismail et al., 2018; Cecil and Christo, 2003).

FIGURE 2
Competence in McClelland's Theory



4.2 DUNNING KRUGER'S THEORY OF COMPETENCE

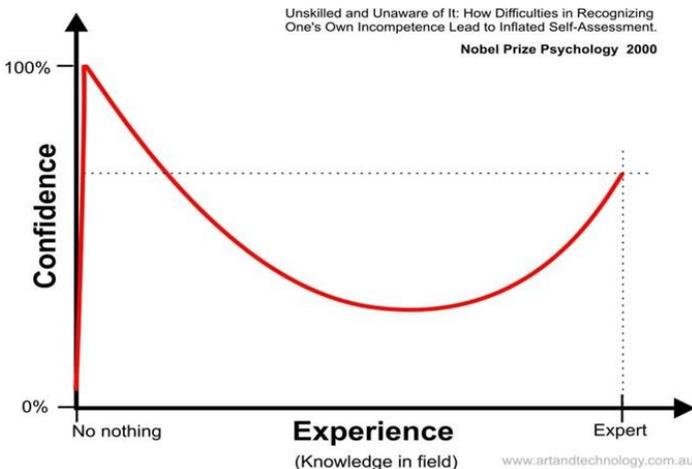
According to Dunning Kruger's hypothesis of competence, individuals who lack competence will suffer from meta-cognitive difficulties because they do not understand to the same extent as others. This perspective mainly explores ways in which distinctions are depicted. Ismail (2017) contends that when performing the prescribed activity, competent people exhibit a limited level of confidence in their skills in daily life, while others have misplaced confidence in their limited abilities. The latter are regularly alluded to as "arrogant fools." People with this substantial cognitive impairment are unaware of their knowledge gaps and skill levels. Nonetheless, they perceive that their level of self-knowledge is higher than others. Competent people, on the other hand, will regard themselves as ordinary and far less brilliant and think that those around them are extremely capable compared to themselves. Incompetent people also have poor skills in executing a specific duty (Yamamoto and Yang, 2022; Yahaya et al., 2020; Ma'sa, 2017). This paradigm emphasizes mentoring in appraising someone else's competency (Birhan and Merso, 2021; Philip et al., 2019).

According to Dunning Kruger's theory of competence, the judgment of relatively stupid and talented people differs. However, this theory's consequences frequently urge weak people to perform duties beyond their capabilities (Tremayne et al., 2022; Adri et al., 2022). According to this theory, unskilled people might experience

meta-cognitive difficulties since they possess less information than others. This theory commonly refers to the concept of cognitive awareness in humanity; unaware people usually feel capable and intelligent, even though they lack knowledge and have made several missteps (Hakan and Erdogan, 2021). Such individuals are regarded as "arrogant fools" in civic life. They are unconscious of their knowledge inadequacies and limitations. Instead, they regard their brilliance as better than others (Leman et al., 2023; Waskito et al., 2021). In contrast, competent people regard themselves as ordinary and far less brilliant than those around them. Incompetent people also perform poorly in a particular task (Yamamoto and Yang, 2022; Yahaya et al., 2020; Ma'sa, 2017).

A graph analysis of confidence levels against individual expertise is presented in Figure 3. With a high degree of confidence, individuals think of themselves as having an even superior degree of knowledge, making it difficult to appraise their actual abilities realistically. David (2019) contends that confronting such individuals requires altering their thought patterns. A person's confidence level does not assure that they will proceed appropriately with the task. According to David (2019), estimating one's abilities from being accurate is problematic because those with solid confidence perceive that they have a much deeper understanding. Such people require intervention by modifying their thoughts and behavioral tendencies (David, 2019). This underlines that a person's level of self-assurance is not a reliable indicator of their aptitude for task completion.

FIGURE 3
Dunning Kruger Effect

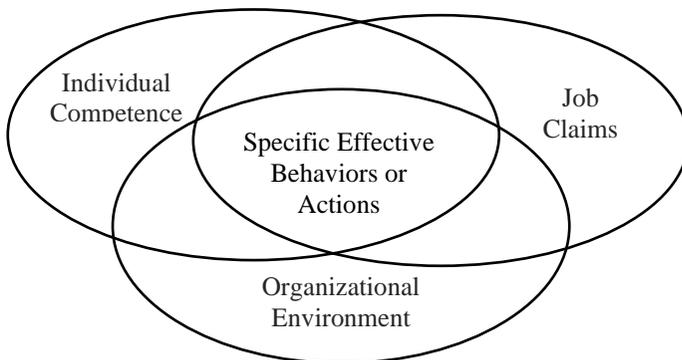


4.3 BOYATZIS'S COMPETENCY THEORY

According to competency theory, a person's personality or personal attributes will determine whether they perform at a high level throughout their career (Boyatzis, 1982). This perspective suggests that competency is viewed as a component of organizational performance rather than individual achievement. The competency view based on Boyatzis's theory is the primary core of the framework development model utilized in this study. Boyatzis's theory was applied in this study because a rigorous instrument or inventory could be employed to explore relative competence among potential graduates influenced by consequences. Previous research that effectively addressed the competency of medical graduates verified the reference guide regarding competence. However, little research has applied Boyatzis's competency dimensions (Boyatzis, 1982). Different competency theories, such as McClelland's Theory, Spencer and Spencer's Theory, Dunning Kruger's Theory, and Boyatzis's Theory, also have pieces that inform and educate.

Beram, Awang, and Ismail (2020) suggest that a manager exhibits three competencies according to Boyatzis's competency theory. To adequately initiate change, leaders should first acquire their competence, anticipate the ability of work requirements, and possess organizational environmental competence. An efficient work performance model is shown in Figure 4. Employers value an employee's performance more than the actual career outcome. Figure 4 illustrates the activities or behaviors as employee prerequisites to increase their performance—in terms of competence, demands of their jobs, and the working structure.

FIGURE 4
Effective Work Performance Model



5. MARKETABILITY

In this globalization era, companies emphasize technical skills and examine marketability skills when making employment decisions to ensure employees can adapt to diverse job demands. Despite the region's limited geographic and demographic resources, many Asian countries have achieved significant economic growth by focusing on developing their human capital, workforce, and personal skills (Ali and Marwan, 2019). Most contemporary human resources perspectives emphasize various issues relating to Malaysia's marketability movement, such as the significance of sharing relevant information, digital work readiness, skills, and knowledge management capability (Wan Abdullah et al., 2022).

The capacity to communicate effectively is undoubtedly one of Malaysia's market value qualities (Rodzalan et al., 2022). This demonstrates that correspondence is a core component in securing a position commensurate with a prospective graduate's credentials. Employers favor practical communication skills, mainly English fluency, in employees (Ismail, 2012). Employers have great expectations for workers who can communicate in multiple languages. Many multinational clients or investors will be embraced as strategic partners. To compete with other graduates in the job market in a dynamic, comprehensive, and innovative way, aspiring graduates must also enhance their abilities (Ibrahim and Mahbob, 2021; Radin and Yasin, 2018). According to Ibrahim and Mahbob (2021), communicating effectively might allow people to develop their confidence. Furthermore, with globalization, technological expertise is essential in an organization. Fairuz (2020) suggests that digital skills foster high-quality productivity equivalent to efficiency in developed economies. Even during the pandemic, beginning in March 2020, technology expertise was increasingly applied in various economic strata clusters, encompassing education, medical, business, industries, and so on (Saleh et al., 2020). The scope of anthropogenic activities online has significantly evolved because of society's digitalization paradigm shift (Rosli et al., 2021; Shirandula, 2021).

Among the criteria determining graduate marketability are work readiness skills. Halim and Sahid (2020) assert that future graduates with work readiness skills have the power to meet company demands since they can save expenses, exert effort, and capitalize on organizational time for individual development. Prospective graduates should actively demonstrate their interest and commitment to enhancing their job readiness as early as their time in higher education

to align with employer expectations. Participation in extracurricular activities focused on personal development, self-management, and motivation can significantly boost self-esteem and foster valuable social connections (Che et al., 2020). Nevertheless, the success of these initiatives largely depends on how potential graduates perceive and respond to their daily experiences (Sullivan et al., 2020; Suarta et al., 2018).

A key aspect of marketability is problem-solving and problem-identification capability. Rahman (2010) asserts that an organization finds it attractive whenever a worker recognizes and resolves difficulties. This is because someone with this competence has a much greater level of reasoning. In Malaysia, knowledge following the cognitive and affective reconstruction philosophy in building artificial capital aligned with the work environment toward the Shared Prosperity Vision Policy or *Wawasan Kemakmuran Bersama* (WKB 2030) is another marketability factor.

Malaysia has taken steps to facilitate graduate employment. According to Amir and Mahaizura (2021), as published in *Harian Metro*, the Ministry of Higher Education (KPT) is committed to tackling the graduate employability issue. KPT is working with the sector to design various programs. The KPT-Medac Program, a collaboration between *Siswapreneurs* and the National Tekun with a budget allocation of RM5 million in 2021, is one of the initiatives highlighted. The KPT developed the Graduates Reference Hub for Employment and Training (GREaT) portal as a platform for prospective and recent graduates to acquire preliminary information about job opportunities. The KPT has also relaunched the National Higher Education Entrepreneurship Council (MKPTN) to encourage and assist entrepreneurship at the HEI level. Graduates and ambitious students who have taken the GREaT training have discovered the online employment requirements standards.

Besides that, the government has also launched three work guarantee initiatives, namely the Employment Guarantee Incentive, the Malaysia Short-Term Employment Program (MySTEP), and the Training and Skills Improvement Program, to create 600,000 career opportunities. Hence, graduates should seize the opportunity that the government provides to obtain a job. In the December 2021 report, the Department of Statistics Malaysia said 190,436 positions were available, with 69% in Technical Education and Vocational Training (TVET) and 19% in the industrial sector.

The government is devoted to assisting graduates to reduce unemployment because of the COVID-19 pandemic that has

devastated the nation, as seen by all these initiatives. According to Asri (2020), one of the primary programs that could boost graduate marketability potential, especially in the technical domain, was designed to help graduates strengthen their work abilities and competitiveness for employment. Other sectors, especially industry, are impeded by the continual pandemics in society. Only some firms can rectify the economic imbalance and have implemented regulated organizational downsizing. Existing employees have been unceremoniously terminated. Job offers are shrinking, yet many contract-level positions are now being offered.

6. CONCLUSION

The essential talents one must possess are interpersonal skills, planning abilities, problem identification and resolution skills, communication proficiency, logical thinking, teamwork, a proactive attitude, and technological competency. These seven skills are derived from earlier research, particularly the work of Boyatzis (1982), who initially identified 19 competency factors that were subsequently organized into seven categories through a systematic literature review. This competency framework was also referenced in Haron (2006) study. As highlighted by previous scholars, it is crucial to understand the synergy and integration between marketability and capabilities.

Employers value exceptional employees with advanced technological knowledge in today's globalized economy. Job competition is fierce, as organisations seek candidates with marketable skills, particularly those contributing to revenue generation. According to Omar et al. (2017), the Internet is a vital platform for creating new business opportunities and is essential for the growth of emerging enterprises. Proficiency in internet skills can significantly drive economic development.

In addition to technical skills, soft skills are equally important in enabling graduates to thrive in diverse professional environments. Qualities such as discipline, emotional intelligence, strong ethics, and high intellect are highly regarded (Adri et al., 2022; Md Sabil et al., 2021; Abd Samad et al., 2018). Since the criteria for employability can differ across various employers and organizations, possessing the right combination of skills is crucial for graduates seeking job opportunities. The unique attributes and diversity of graduates will also impact their employment prospects. Ultimately, employers and organizations will continue emphasizing the importance of creative and innovative competencies.

Personal qualities are commonly referred to as marketable skills. According to Rashidi (2018), these skills are crucial for individuals looking to enhance their job knowledge and abilities, thereby aiding businesses in achieving their defined vision and purpose. However, without emphasizing marketable skills, graduates face limited opportunities to secure jobs aligned with their degrees. Graduate marketability is a critical requirement for students before entering the job market. Insufficient preparation, particularly in mental and physical readiness, can weaken students' chances of impressing potential employers, resulting in missed opportunities for desired positions. The increasing number of graduates has heightened competition for available jobs (Gambo et al., 2021; Mohd Zubir et al., 2021; Yusof and Jamaluddin, 2015). As a result, aspiring graduates must thoroughly understand and adhere to industry qualification requirements while also being mindful of organizational cultural dynamics.

Competency theory is a practical framework for designing and researching competencies across various domains. Previous studies emphasize the importance of competence in the workplace, as organizations actively seek skilled and capable personnel in all sectors to enhance work quality and significantly contribute to overall organizational growth. An individual's ability to perform responsibilities effectively can improve job quality and enhance personal performance (Saleh et al., 2022; Rasul, Mohd Nor and Amat, 2021). Future research on competencies intends to identify and measure various factors associated with competence to assess the extent of individuals' abilities. The average annual graduate enrollment increase has intensified labor market competition. Consequently, employers now place a premium on competence when hiring new staff to improve job productivity. As a result, everyone must maintain high standards of competence.

The findings of this research aim to assist students in preparing for the labor market and enhancing their skills to meet current industry competency demands. This study explored the qualities students should develop to improve their marketability (Rodzalan et al., 2022) and identified four primary areas of focus: graduates, universities, industry, and the economy. The skills required of incoming graduates will continue to evolve. To succeed, graduates must stay informed about the most critical sectors within the industry. They should examine the current marketability requirements, significantly shaped by qualifications in a competitive job market. Universities must make qualitative adjustments to their curriculum

content to enhance its relevance. This research is valuable because it can help institutions avoid offering courses misaligned with industry requirements. In light of its findings, universities may choose to discontinue courses that do not align with the current needs of the labor market and human capital (Wan Abdullah et al., 2022).

This research assists organizations in attracting talented employees and enables industries to save costs by minimizing training expenditures. It aims to enhance organizational efficiency and strengthen its competitive position by recruiting qualified personnel. Employees must acquire data analytics and technology skills in light of the rapid digital and technological advancements affecting the nation. Additionally, this study contributes to reducing unemployment in Malaysia by highlighting the competencies that should be prioritized to strengthen institutional capacity, thereby producing graduates who can meet the high standards of the industrial sector.

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