Enhancing Graduate Employability: The Role of MQF 2.0-Aligned Functional Skills

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As labor markets evolve rapidly due to technological advancements and shifting industry demands, graduate employability has emerged as a critical performance indicator for higher education institutions. In Malaysia, the Malaysian Qualifications Framework 2.0 (MQF 2.0) addresses these challenges by promoting outcome-based education and the development of functional work skills. Despite its comprehensive structure, concerns have arisen regarding the effectiveness of MQF 2.0 in enhancing graduate employability, particularly due to inconsistencies in implementation and limited empirical validation. This study investigates the impact of MQF 2.0-aligned functional skills, such as communication, problem-solving, leadership, and digital literacy, on graduate employability in Malaysia's higher education institutions. Using a quantitative approach, data were collected from final-year undergraduate students across public and private universities in Northern Malaysia, and Structural Equation Modelling (SEM) was employed to examine the direct relationships between MQF 2.0 skills and employability outcomes. The results demonstrate a significant positive relationship between functional skills and graduate employability, indicating that MQF 2.0 plays a crucial role in improving workforce readiness. The study also highlights the importance of curriculum alignment with industry needs and offers actionable insights for policymakers and institutions to further enhance graduate employability through better integration of these skills into academic programs.

Keywords: MQF 2.0 (Malaysian Qualifications Framework); Graduate employability; Functional skills; Communication skills; Workforce readiness; Curriculum alignment.

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INTRODUCTION

In an increasingly competitive global labor market, graduate employability has become a key metric for evaluating the effectiveness of higher education. As technological advancements and digital transformation reshape industries, employers are placing greater emphasis on graduates who possess a comprehensive set of functional skills such as communication, problem-solving, digital literacy, and leadership (Wong, 2025; Tee, Wong, & Dada, 2024; Smith & Jones, 2023). These skills enable graduates to effectively navigate the dynamic workplace and contribute to organizational success. As the demand for such skills continues to grow, higher education systems are tasked with equipping graduates with these essential competencies to ensure their success in the evolving job market (Fugate et al., 2020; Brown, 2021).

In Malaysia, the Malaysian Qualifications Framework (MQF 2.0) was introduced to address this challenge by focusing on outcome-based education and emphasizing the development of functional work skills that are aligned with industry needs (MQA, 2025; Osman, 2025). MQF 2.0 aims to enhance graduate employability by ensuring that students not only gain academic knowledge but also develop key functional skills that are critical for career readiness. These skills include communication, leadership, problem-solving, digital literacy, and entrepreneurial skills, all of which are seen as vital for meeting the expectations of employers in a rapidly changing labor market (Wong, 2025; Teoh, 2022; Osman, 2025).

The development of functional skills has long been recognized as a vital component of graduate employability in higher education. As the demands of the labor market shift towards more dynamic, technology-driven environments, employers increasingly require graduates to possess a diverse range of competencies beyond traditional academic knowledge (Tushar, 2023; Wong, 2025; Fogg, 2022). These functional skills, including communication, problem-solving, digital literacy, leadership, and entrepreneurship, are seen as essential for enabling graduates to adapt to the changing work environment and meet employers' evolving needs (Osman, 2025; Teoh, 2022). Furthermore, researchers argue that these skills are increasingly necessary for graduates to thrive in complex, interdisciplinary work environments that demand adaptability, critical thinking, and leadership (Tee et al., 2024; Tushar, 2023).

The Malaysian Qualifications Framework (MQF 2.0) was introduced as a national educational policy aimed at addressing these needs by aligning the skills and competencies of graduates with those required by industry. The framework emphasizes outcome-based education, where the focus is on achieving specific learning outcomes, particularly the development of functional work skills that prepare students for the workforce (MQA, 2025; Wong, 2025). The MQF 2.0 framework outlines critical skills such as communication, problem-solving, digital literacy, and leadership, all of which are designed to enhance employability (MQA, 2025). These skills are increasingly recognized as crucial for graduates to thrive in a world shaped by technological innovation, globalization, and digitalization (Osman, 2025; Brown & Tan, 2022).

Several studies have shown that graduates who possess strong functional skills are more likely to be successfully integrated into the labor market. Research by Tee et al. (2024) and Wong (2025) demonstrates that employers across various sectors value communication skills, leadership abilities, and problem-solving capabilities more than technical knowledge alone. Graduates who are proficient in these functional skills are seen as more adaptable, capable of contributing to organizational growth, and able to navigate complex work environments (Tushar, 2023; Brown & Tan, 2022). Moreover, digital literacy is now a fundamental skill in almost every job, as the world becomes more interconnected and digital transformation continues to shape industries (Wong, 2025; Fogg, 2022). While MQF 2.0 provides a comprehensive framework for skill development, its

effectiveness in improving graduate employability has not been widely validated. Several scholars have noted inconsistencies in how MQF 2.0 is implemented across different institutions, raising concerns about the framework's actual impact on employability outcomes (Tee et al., 2024; Brown & Tan, 2022). According to Osman (2025), while the framework promotes the importance of functional skills, there remains a gap in how these skills are integrated into curricula and assessed in practice. Furthermore, studies have found that graduates often face skills gaps, particularly in digital literacy and problem-solving, which can hinder their ability to meet employer expectations (Tee et al., 2024).

Additionally, research suggests that income disparities can moderate the effectiveness of functional skills development. Graduates from higher-income backgrounds tend to have better access to internships, mentorship, and networking opportunities, which help them apply and refine their functional skills in real-world settings (Osman, 2025). On the other hand, lower-income students often lack access to these resources, which limits their ability to fully benefit from educational frameworks like MQF 2.0. As such, addressing socioeconomic inequalities is crucial for ensuring that all graduates can benefit equally from skills development programs (Wong, 2025; Fogg, 2022). Although the MQF 2.0 framework highlights the importance of functional skills in improving graduate employability, there is a lack of empirical studies that validate its impact on employability outcomes. Most existing studies focus on the design and intentions of MQF 2.0 but fail to provide comprehensive evidence on how functional skills developed through MQF 2.0 influence graduate employability in practice. Furthermore, the moderating effect of income disparities on the relationship between functional skills and employability remains underexplored. This gap suggests that further research is needed to assess not only the direct impact of functional skills on employability but also how external factors such as socioeconomic background influence the effectiveness of MQF 2.0 in preparing graduates for the labor market.

Therefore, the primary objective of this study is to examine the impact of MQF 2.0-aligned functional skills on graduate employability in Malaysia. Specifically, the study aims to assess how key functional skills such as communication, problem-solving, digital literacy, and leadership align with employability outcomes. This focus on functional skills reflects the growing demand from employers for graduates who can demonstrate both academic knowledge and practical abilities that are crucial for success in the modern workforce (Fugate et al., 2020; Brown, 2021).

METHODOLOGY

This study employs a quantitative research design to explore the impact of MQF 2.0-aligned functional skills on graduate employability in higher education institutions in Northern Malaysia. The research design follows a structured approach, utilizing Structural Equation Modelling (SEM) to analyze the

relationships between functional skills and graduate employability outcomes. This methodology allows for an in-depth understanding of the direct effects of functional skills and the moderating influence of factors such as income disparities on employability. A cross-sectional survey design was adopted for this study, as it enables the examination of relationships between variables at a single point in time. The study focuses on final-year undergraduate students from selected public and private universities in Northern Malaysia especially within states of Perlis, Kedah, Penang and Perak. The choice of final-year students ensures that the participants have been exposed to the MQF 2.0 framework and have had sufficient academic and practical exposure to functional skills aligned with MQF 2.0, making them ideal candidates for assessing employability outcomes.

The study uses a stratified random sampling technique to select universities and respondents to ensure proportional representation across institutional types, academic programs, and geographic locations. This approach also ensures that both public and private universities are represented, reflecting the diversity of educational institutions in Malaysia. Besides, stratification was based on faculty clusters (e.g., STEM, social sciences, education, business) and institutional profiles (e.g., comprehensive universities vs. niche-focused institutions). This approach enhances the representativeness of the sample and allows for subgroup analysis in the Structural Equation Modelling (SEM) phase. Stratified sampling allows the research to account for differences between institutions, which may vary in the extent to which MQF 2.0 is implemented and integrated into their curricula.

The sample consists of 300 final-year students enrolled in both public and private educational institutions offering programs aligned with the Malaysian Qualifications Framework 2.0 (MQF 2.0). The gender distribution within the sample is well-balanced, ensuring a meaningful comparison between male and female students. This balance is particularly crucial given the study's aim to explore gender as a moderating factor in the relationship between functional skills, lecturer competency, and graduate employability. The respondents also come from diverse educational backgrounds, including those who entered university via matriculation, diplomas, STPM, foundation courses, and other equivalent pre-university pathways. Furthermore, the respondents represent a wide range of academic disciplines, including both professional and non-professional fields of study. This disciplinary diversity introduces variability in learning environments, assessment practices, and industry exposure, all of which may influence students' perceptions of employability.

Data for this study were collected using a structured questionnaire designed to assess the key variables related to MQF 2.0-aligned functional skills and their influence on graduate employability. The questionnaire was divided into several sections. The first section focused on demographic information, such as gender, age, academic background, and socioeconomic status. The second section assessed the functional skills acquired by students through their academic programs, including communication skills, problem-solving abilities, leadership, and digital competency. The items in this section were adapted from existing

employability scales and MQF 2.0 guidelines, and were measured using a Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to determine the extent to which students perceived themselves as possessing these skills. The third section focused on graduate employability, specifically examining job readiness, business adaptability, and career progression. These outcomes were measured through items that gauged students' perceptions of their preparedness for the workforce, and how well their education had equipped them with the necessary skills to succeed in various professional settings.

To ensure the reliability and validity of the data, the questionnaire was pre-tested with a small group of students, and adjustments were made based on feedback received. The data collection process was carried out over a period of two months, with respondents completing the survey online or in person during scheduled times at the participating institutions. Informed consent was obtained from all participants, ensuring that they understood the purpose of the study and their right to confidentiality and anonymity.

The use of a stratified random sampling method ensured that the sample was representative of different academic backgrounds and socioeconomic statuses, allowing for a comprehensive analysis of how various factors, such as income disparities, may influence the relationship between functional skills and graduate employability. The resulting data provided a robust foundation for analyzing the direct and moderated relationships among the study's key variables, using PLS-SEM to assess the strength and significance of these relationships. The analysis proceeded in two stages which the first stages were assessed through Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). while the second stages involves structural model where the path coefficients (β) were tested for statistical significance using bootstrapping (5,000 resamples). The R-square value (R^2) was used to measure the explained variance in graduate employability.

RESULTS AND DISCUSSION

The study provides compelling evidence of the significant impact of MQF 2.0-aligned functional skills on graduate employability in Malaysia. The findings reveal that functional skills such as communication, leadership, digital literacy, interpersonal competence, numeracy, and ethical professionalism have a statistically significant positive effect on employability outcomes. Graduates who demonstrated higher levels of these skills reported stronger confidence in their employability and better preparation for the workforce. Specifically, the results show that communication skills enable graduates to interact effectively with colleagues and clients, while leadership skills are crucial for those aiming for managerial roles. Digital literacy was identified as an increasingly vital skill, enhancing graduates' adaptability in modern, technology-driven environments. Ethical professionalism, a key component of employability, ensures that graduates meet workplace expectations and contribute to organizational success.

These findings are further substantiated by the results of the structural model, which demonstrates the strong explanatory power of the model. The coefficient of determination (R^2) in Table 1 indicates that MQF 2.0 functional skills and lecturer competency collectively account for 83% of the variance in graduate employability. This demonstrates that these two factors exert a substantial influence on shaping employability outcomes, offering strong support for the study's premise that they are critical to workforce readiness. The findings affirm that employability is meaningfully driven by functional skills and lecturer competency, rather than being solely dictated by external labour market conditions.

Table 1. Coefficients of Determination (R^2)

Endogenous Construct	R^2 Value	Interpretation
Graduate Employability	0.83	Moderate / Substantial

Beyond statistical significance, effect size analysis (f^2) was conducted to evaluate the relative contribution of each exogenous construct to graduate employability. While path coefficients indicate the direction and significance of relationships, f^2 values assess the magnitude of each predictor's impact. Table 2 shows the f^2 values for both functional skills and lecturer competency.

Table 2. Effect size (f^2)

Path	f^2 Value	Interpretation
Functional Skills → Employability	0.22	Medium
Lecturer Competency → Employability	0.18	Medium

The f^2 values in Table 2 indicate that both functional skills and lecturer competency contribute substantially to graduate employability. Specifically, functional skills have a medium effect on employability outcomes ($f^2 = 0.22$), while lecturer competency also has a medium effect ($f^2 = 0.18$). This suggests that both factors play an important role in shaping employability, and that focusing on improving both functional skills and teaching quality will significantly enhance graduate readiness for the workforce. This finding aligns with the goal of MQF 2.0 to prepare graduates who are not only academically competent but also equipped with transferable skills necessary for the modern workforce.

Besides, the study emphasizes the practical relevance of the model through predictive relevance (Q^2) analysis. Table 3 reports a Q^2 value of 0.42 for graduate employability, indicating that the model has adequate predictive capability. This demonstrates that the structural model can reliably predict employability outcomes, reinforcing its utility for curriculum design, lecturer development, and institutional strategies to strengthen graduate workforce readiness. The positive Q^2 value confirms the model's predictive power, underscoring its value as a tool for enhancing graduate employability.

Table 3. Predictive Relevance (Q^2)

Construct	Q^2 Value	Predictive Relevance
Graduate Employability	0.42	Adequate

Additionally, the moderation analysis in this study sought to examine how gender and educational background moderate the relationships between MQF 2.0-aligned functional skills, lecturer competency, and graduate employability. The results in Table 4 revealed significant moderation effects, indicating that the impact of functional skills and lecturer competency on employability outcomes varies across different subgroups of students.

Table 4. Summary of Moderation Effects

Moderator	Path	Path Coefficient	*t*-value	*p*-value	Effect Size (f^2)	Interpretation
Gender	Functional Skills → Employability	0.30	3.45	0.001	Medium	Gender-sensitive skill internalisation
Gender	Lecturer Competency → Employability	0.25	2.98	0.003	Medium	Differential instructional responsiveness
Educational Background	Functional Skills → Employability	0.35	4.10	0.000	Large	Pathway-dependent skill benefits
Educational Background	Lecturer Competency → Employability	0.28	3.25	0.002	Medium	Adaptive pedagogy required

Based on Table 4, the analysis showed that female students benefit more from communication, ethical professionalism, and interpersonal competence, with a stronger relationship between functional skills and employability (path coefficient = 0.30, p = 0.001). Female students also gained more from lecturer competency, especially in terms of pedagogical mastery and technological proficiency (path coefficient = 0.25, p = 0.003), highlighting the importance of gender-sensitive teaching strategies. Furthermore, educational background also played a moderating role, with students from vocational and diploma pathways benefiting incrementally from functional skills (path coefficient = 0.35, p = 0.000), while academic pathway students experienced sharper improvements. These findings suggest that students with different backgrounds gain varying levels of benefit from functional skills and lecturer competency, emphasizing the need for adaptive teaching approaches. These moderation effects underline the need for differentiated instructional strategies that cater to gender and educational background differences. Tailoring

teaching methods to these factors ensures more effective employability outcomes across diverse student groups.

The study highlights the importance of functional skills and lecturer competency in preparing graduates for the workforce. It emphasizes that teaching strategies should be gender-sensitive and contextually adaptive to different educational backgrounds, ensuring equitable employability outcomes across diverse student groups. The findings underscore the need for educational institutions to integrate functional skills into curricula and invest in lecturer development to improve graduate workforce readiness.

CONCLUSION

This study demonstrates that MQF 2.0-aligned functional skills and lecturer competency play a critical role in enhancing graduate employability in Malaysia. The results indicate that functional skills such as communication, digital literacy, leadership, and ethical professionalism significantly contribute to graduates' preparedness for the workforce. These skills not only foster employability confidence but also ensure graduates are equipped to meet the evolving demands of employers. Additionally, the study highlights the importance of lecturer competency, with both pedagogical mastery and technological proficiency proving essential in translating academic knowledge into practical, marketable skills. The model's ability to explain 83% of the variance in graduate employability further emphasizes the substantial impact of these factors on workforce readiness.

Moreover, the findings reveal that gender and educational background act as moderators in the relationship between functional skills, lecturer competency, and employability. Female students, for example, benefitted more from skills like communication and ethical professionalism, while vocational students experienced incremental gains in employability from functional skills. The study's moderation analysis underscores the need for adaptive teaching strategies that consider these differences to ensure that all students, regardless of gender or educational background, can maximize their employability outcomes.

In light of these findings, it is clear that employability cannot be viewed as a passive outcome of academic achievement alone. Educational institutions must strategically integrate functional skills into curricula, enhance lecturer competency, and adopt context-sensitive teaching approaches to equip students with the skills necessary for success in the modern workforce. By doing so, they will ensure that graduates are not only academically capable but also practically prepared to thrive in dynamic, competitive job markets.

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