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Evaluating Factors Influencing Job Performance Among TVET Trainee Instructor Graduates in Malaysia: A Conceptual Framework

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Abstract: As Malaysia emphasizes skilled labor for economic growth, where TVET instructors play a critical role. Challenges like inconsistent skills development and gaps between curriculum and industry needs drive the need for a more structured assessment approach. This conceptual framework, developed through comprehensive literature review, focuses on key factors including technical, pedagogical, and techno-pedagogical skills. It aims to evaluate learning outcomes of TVET trainee instructor program graduates, address instructor preparedness gaps, and ensure alignment with industry expectations. Ultimately, the framework seeks to enhance TVET education quality and provide guidance for continuous curriculum improvement.

Keywords: TVET Malaysia, Job Performance, TVET Trainee Instructor, Competency

Abstract (Malay): *Malaysia menekankan tenaga kerja mahir untuk pertumbuhan ekonomi, di mana pengajar TVET memainkan peranan kritikal. Cabaran seperti pembangunan kemahiran yang tidak konsisten dan jurang antara kurikulum dengan keperluan industri mendorong keperluan untuk pendekatan penilaian yang lebih berstruktur. Kerangka konseptual ini, dibangunkan melalui kajian literatur yang komprehensif, fokus pada faktor utama termasuk kemahiran teknikal, pedagogi, dan tekno-pedagogi. Ia bertujuan untuk menilai hasil pembelajaran graduan program pengajar pelatih TVET, menangani jurang persediaan pengajar, dan memastikan keselarasan dengan jangkaan industri. Akhirnya, kerangka ini berusaha untuk meningkatkan kualiti pendidikan TVET dan memberikan panduan untuk penambahbaikan kurikulum berterusan.*

Kata kunci: *TVET Malaysia, Prestasi Kerja, Pengajar Pelatih TVET, Kompetensi*

1. Introduction

Malaysia's economy shift towards high-technology industries requires a re-evaluation of current TVET programs. There is a need to ensure that these programs are producing graduates with the right skills, knowledge, and attitudes to meet the demands of modern workplaces. This background establishes the necessity for a thorough investigation into the factors affecting TVET graduates' performance, as their effectiveness in the workforce is imperative for the nation's socio-economic development. Quality education is crucial in ensuring that talent produced meets the future of work and is versatile in adapting to changes. According to the 12th Malaysia Plan (RMK-12), 2021-2025 period, emphasis will be given on reforming the education system to elevate the quality of education and leverage emerging technologies. Among the measures to be undertaken include strengthening education initiatives and character building, boosting higher education excellence and enhancing TVET ecosystem. These measures will improve access as well as enhance the delivery of education and training, in line with the 2030 Agenda (EPU,2021). The Malaysian government is significantly focused on enhancing the TVET system as part of its strategic efforts to meet labour market demands and boost economic growth. On average, from the year 2020 to 2024, the annual number of Sijil Pelajaran Malaysia (SPM) candidates ranged between 300,000 and 400,000. It is projected that by 2025, approximately 165,000 of these candidates will be required to enroll in TVET programs. With the increasing number of students joining TVET programs, there is an urgent need to expand training capacities at both public and private TVET

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training centres in Malaysia. This trend also necessitates an increase in the number of qualified TVET instructors.

1.1 Problem Statement

Despite various initiatives to enhance the quality of TVET programs in Malaysia, significant challenges remain in preparing TVET trainee instructor graduates to meet industry demands. A key issue is the varying competency levels among instructors persist despite the existence of a standardized framework, limited industry exposure, and insufficient continuous professional development opportunities (Mohammed Adamu Hamisu et al., 2017; Mimi Mohaffyza Mohamad et al., 2015). This has created a skill mismatch between the training provided and the competencies required by employers, undermining the quality of TVET graduates (Raja Norhafiza Raja Rosly et al., 2019). Additionally, gaps in pedagogical skills, industry-relevant knowledge, and job performance outcomes remain inadequately addressed, raising questions about the effectiveness of these programs in producing capable and industry-ready instructors (MTVET, 2024; Dayangku Suraya Awang Jafar et al., 2020).

These challenges have highlighted the need for a comprehensive framework to evaluate and address factors influencing the job performance of TVET trainee instructor graduates. This study aims to identify these key factors, focusing on the delivery of TVET training, competency development, and the critical gap in industry knowledge (Razali Hassan, 2021; Elisa, K et al., 2020). By addressing these issues, the study seeks to provide actionable insights that can guide policy decisions and curriculum reforms, ensuring that future graduates are better equipped to deliver high-quality, industry-relevant vocational education and contribute meaningfully to Malaysia's TVET sector (Nur 'Adnin Syamil Halik Bassah, 2022; Ahmad Zainal Abd Aziz, 2023).

1.2 Objective

The absence of a comprehensive framework for assessing the job performance of TVET trainee instructor graduates highlights a significant gap in existing study. This study aims to address this gap by developing a structured framework that identifies and analyses key influencing factors, providing a systematic tool for evaluating and enhancing the job performance of these graduates. Understanding these factors is critical to equipping TVET instructors with the competencies needed to deliver high-quality education and bridging the disconnect between TVET program outcomes and industry requirements. This study focuses on addressing these shortcomings to improve the effectiveness of TVET education. By identifying and integrating these key factors into a conceptual framework, the study aims to inform policymakers, educators, and industry leaders on ways to refine TVET trainee instructor programs. The objectives include evaluating the factors influencing job performance and designing a framework for assessing these competencies. Ultimately, this study seeks to enhance the quality of technical education, align educational outcomes with labour market demands, and ensure that TVET instructor graduates are prepared to meet workforce challenges, thereby improving their employability and the overall effectiveness of the TVET system.

1.3 Significance

Measuring job performance is essential for developing a framework to evaluate the outcomes of TVET trainee instructor program graduates. This assessment focuses on their ability to deliver effective TVET training, including classroom management, pedagogical application, and adapting teaching strategies to diverse learners. By capturing these dimensions, the study aims to develop a comprehensive framework that evaluates the overall effectiveness of the training program and its alignment with industry needs. This approach ensures graduates are well-prepared for workforce demands, strengthening the quality of technical and vocational education in Malaysia.

2. Literature Review

2.1 Individual Work Performance Theory

The Individual Work Performance Theory, developed by Koopmans in 2014, is a pivotal framework in organizational psychology, addressing the need for a unified approach to conceptualizing and measuring individual performance. Emerging from an extensive review across occupational health, psychology, and management, the theory presents a tripartite model: task performance, contextual performance, and counterproductive work behaviour. Task performance evaluates how proficiently individuals execute core job tasks, emphasizing job-specific technical outputs. Contextual performance extends to behaviours that positively influence the workplace environment, such as teamwork, initiative, and organizational support. Counterproductive work behaviour, in contrast, examines actions that detract from organizational success, including absenteeism or inefficiency (Koopmans et al., 2014).

To operationalize these constructs, Koopmans introduced the Individual Work Performance Questionnaire (IWPQ), an 18-item tool designed for diverse occupational contexts. The IWPQ uses a 5-point scale to assess performance over a three-month period, balancing recent and broader temporal perspectives. Its development underwent rigorous validation processes, including expert consultations and pilot testing, ensuring its psychometric robustness. Studies have demonstrated its strong reliability, validity, and cross-cultural adaptability, making it a widely accepted tool for assessing work performance across industries (Koopmans et al., 2013). This measurement framework addresses the inconsistencies in earlier performance models, providing clarity and generalizability for both academic research and practical applications. In the context of TVET pre-service instructors, Koopmans' theory offers a multidimensional perspective for evaluating job performance. Task performance aligns with the core responsibilities of delivering technical and practical education, while contextual performance highlights their contributions to fostering a supportive and collaborative learning environment. Monitoring counterproductive behaviours is equally critical, as negative actions can directly impact the success of vocational training programs. The adaptability of the IWPQ allows for a comprehensive assessment of instructors' strengths and areas for improvement, ensuring alignment with evolving pedagogical demands and technological advancements in TVET (Koopmans et al., 2013; Koopmans et al., 2014).

2.2 Competency-based Training (CBT)

Competency-Based Training (CBT) is a performance-driven educational model emphasizing the acquisition and demonstration of specific, measurable skills and knowledge aligned with workplace demands. Rooted in behaviourism and systems theory, CBT gained prominence during the mid-20th century as a response to the need for industry-relevant education and bridging gaps between academia and professional application (Hodge, 2007; Wesselink & Wals, 2011). Unlike traditional time-based education, CBT prioritizes outcomes, allowing learners to earn qualifications through assessments that demonstrate mastery of defined competencies (Boahin & Hofman, 2014). It is characterized by modularized instruction, competency mapping, personalized learning paths, and continuous evaluation, empowering learners to progress at their own pace while receiving feedback and support.

The key principles of CBT include industry relevance, mastery learning, and lifelong learning, ensuring that learners acquire the skills necessary for job readiness. Competency mapping aligns learning materials and assessments with specific industry standards, while task-oriented evaluations like practical demonstrations and portfolios assess skill mastery (Boahin & Hofman, 2014). Widely used in fields such as healthcare, IT, and trades, CBT plays a pivotal role in TVET programs by integrating theoretical knowledge with practical skills to meet evolving industry demands. However, successful implementation requires robust competency frameworks, aligned curricula, and effective support systems to address its complexity and ensure its relevance (Elam, 1971; Boahin & Hofman, 2014).

2.3 Pedagogical Content Knowledge (PCK)

Lee Shulman (1986) introduced the concept of Pedagogical Content Knowledge (PCK), a transformative framework in educational theory that bridges the gap between subject matter expertise and effective teaching practices. PCK represents the unique blend of content knowledge (what is taught) and pedagogical knowledge (how to teach) necessary for educators to present complex concepts in ways that are accessible and meaningful to learners. Shulman argued that effective teaching requires not just mastery of the subject but also an understanding of how students learn, their misconceptions, and the methods best suited to address these challenges. He categorized teacher knowledge into seven domains: content knowledge, general pedagogical knowledge, curriculum knowledge, PCK, knowledge of learners, knowledge of educational contexts, and knowledge of educational goals, values, and purposes.

This framework emphasizes the importance of aligning teaching strategies with content-specific needs and learner contexts. Shulman's PCK has since become a cornerstone of teacher education, inspiring subsequent frameworks like Technological Pedagogical Content Knowledge (TPACK), which integrates technology into pedagogy (Mishra & Koehler, 2006). The enduring relevance of Shulman's theory underscores its critical role in equipping educators to navigate the dynamic demands of contemporary classrooms (Shulman, 1986; Mishra & Koehler, 2006).

2.4 Technological Pedagogical Content Knowledge (TPACK)

The Technological Pedagogical Content Knowledge (TPACK) framework, developed by Mishra and Koehler (2006), is a transformative model for integrating technology into teaching. Building on Shulman's Pedagogical Content Knowledge (PCK), TPACK introduces the critical dimension of technology to address the complexities of modern education. The framework emphasizes the intersection of three core knowledge domains: content knowledge (CK), pedagogical knowledge (PK), and technological knowledge (TK), highlighting how these areas must work in harmony to achieve effective teaching in a technology-enhanced environment. It underscores that successful integration of technology requires more than just familiarity with tools; educators must understand how technology reshapes content representation and enriches pedagogy to foster student learning. This is particularly relevant for TVET education, where the rapid evolution of industry technologies demands that instructors adapt their teaching strategies to maintain relevance and effectiveness (Mishra & Koehler, 2006). The TPACK model identifies seven interrelated domains of teacher knowledge, including Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), and Technological Pedagogical Knowledge (TPK), culminating in the comprehensive Technological Pedagogical Content Knowledge (TPACK).

These domains provide a structured understanding of how knowledge in one area influences the others, creating a dynamic interplay that supports contextualized and adaptive teaching. For instance, in TVET education, TPACK enables instructors to integrate cutting-edge technologies while aligning with pedagogical strategies and subject matter, thereby enhancing delivery and student engagement. By fostering a nuanced understanding of these relationships, the TPACK framework serves as a vital tool for developing techno-pedagogical competencies among TVET instructors, ultimately improving their teaching performance and adaptability to industry trends (Dayangku Suraya, 2020; Mishra & Koehler, 2006).

2.5 TVET Trainee Instructor

Qualified TVET instructors are expected to exhibit professionalism, possess extensive knowledge and skills, maintain a broad social network, and have a positive personality. In Malaysia, the primary responsibilities of TVET instructors encompass teaching, learning, and training, as well as organizing, managing, developing, delivering, and evaluating the educational curriculum, as outlined by Ismail et al. (2018). TVET instructors are frequently involved in providing contributions to training programmes and are also expected to participate in research and innovation activities, in addition to monitoring the academic progress of their students. However, industry experts have identified the competencies of the teaching staff as a significant issue within the TVET system. The expertise required of TVET instructors should not only be limited to their specific field but should also encompass additional skills, including pedagogical techniques and management abilities.

The Centre for Instructor and Advanced Skill Training (CIAST), established in 1983 under the Department of Skills Development (DSD), Ministry of Human Resources, is dedicated to developing world-class TVET instructors who are knowledgeable, competent, and responsive to evolving technologies and environmental changes. Its core objectives include producing skilled instructors to meet the needs of the country's skills training institutions, continuously enhancing their capabilities in technical skills and training methodologies, and qualifying instructors and industry experts in line with the Malaysian Skills Certification System.

2.6 Job Performance

The job performance of TVET trainee instructor graduates is a critical factor in the success of Malaysia's technical and vocational education and training (TVET) system. Job performance refers to actions and behaviours aligned with organizational goals, such as effectively preparing students for labour market demands (Koopmans, 2010). For TVET trainee instructors, performance includes their ability to deliver technical knowledge and practical skills, adapt to technological advancements, and align with industry standards. Assessing their performance reflects the effectiveness of training programs in equipping instructors with competencies essential for Malaysia's workforce development. Job performance is multidimensional, encompassing behaviours such as innovative teaching, curriculum adaptation, and student engagement, as well as outcomes like student job placement and employer satisfaction.

These can be measured using objective methods, such as feedback from stakeholders, and subjective means, including self-assessments and peer evaluations. Unlike mere productivity, which focuses on quantifiable outputs, job performance evaluates the broader contributions of instructors, including their role in fostering student success and meeting industry needs. This holistic perspective ensures TVET instructors are not only skilled but also effective in driving the objectives of Malaysia's high-tech industry aspirations. Evaluating job performance provides valuable insights into how well TVET programs align with national workforce demands, making it a vital metric in enhancing the system's overall impact (Koopmans, 2010).

The expanded studies on job performance for TVET instructors explore diverse focus areas while introducing new dimensions, particularly the effectiveness of training programs and their role in vocational education (Ting et al., 2012). A notable addition is the role of self-efficacy as a psychological mediator between academic satisfaction and job performance, emphasizing individual psychological factors (Lim, 2022). Methodologically, these studies employ a mix of approaches, including qualitative research (Rahmat et al., 2016) and sector-specific investigations across Southeast Asia, particularly Malaysia (Ting et al., 2012; Rahmat et al., 2016; Abd Aziz, 2023). The continued focus on education and vocational training highlights the sector's importance in understanding and improving job performance in developing economies (Yang & Chang, 2023; Li et al., 2022).

Emerging themes include the alignment of employability skills with job performance, reinforcing the critical link between education outcomes and industry demands (Rahmat et al., 2016). Studies also highlight teacher excellence factors (Abd Aziz, 2023) and job performance antecedents for graduates in specific industries such as tourism (Ranasinghe, 2019). The interdisciplinary approach, integrating psychology (Lim, 2022), education (Ranasinghe, 2019), and human resource management (Abd Aziz, 2023), underscores the complexity of job performance research. This evolving body of work reflects the multifaceted challenges and opportunities in developing economies, offering a solid foundation for targeted interventions to enhance workforce effectiveness and align with industry needs.

The study of TVET instructor competencies in Malaysia highlights the multifaceted nature of teaching in vocational education, emphasizing technical knowledge, industry experience, and pedagogical expertise. Research has identified various competency frameworks, such as Ismail et al.'s (2018) emphasis on technical innovation, curriculum development, and continuous professional growth, and Omar et al.'s (2021) focus on ethics, professional values, and standardized teaching practices for engineering instructors. Additionally, Ramly et al. (2022) shed light on the unique demands of TVET programs in specialized environments, such as prison institutions, where planning, classroom management, and assessments are critical. Across studies, continuous upskilling and professional development are recognized as essential for instructors to remain effective in delivering practical, industry-aligned education. Competencies like employability skills, ICT proficiency, and a balanced approach to knowledge, skills, and attitudes are consistently highlighted as pivotal for preparing students for labour market demands (Khuzainey et al., 2017; Omar et al., 2020).

The Fourth Industrial Revolution (4IR) amplifies the need for TVET instructors to integrate emerging technologies such as AI, VR, and AR into their teaching practices. Malaysia's Twelfth Plan (RMK-12, EPU) proposes strengthening digital competencies through professional certifications and optimizing the digital learning ecosystem. Collaboration between TVET institutions and industries is vital for equipping instructors and students with the skills to navigate advanced technologies and real-world industry challenges. However, gaps in digital infrastructure, resources, and instructor training highlight the need for more comprehensive strategies. By enhancing digital and pedagogical competencies, Malaysia's TVET system can better prepare instructors to foster workforce readiness and drive innovation in line with global technological advancements (RMK-12, EPU).

3. Research Framework and Hypotheses

Conceptual framework can be visually represented in a diagram illustrating the relationships between the dependent variable and the independent variables based on the research objectives and supported by the underpinning theories and literature review for this study. Figure 1 below is a proposed conceptual framework for this study.

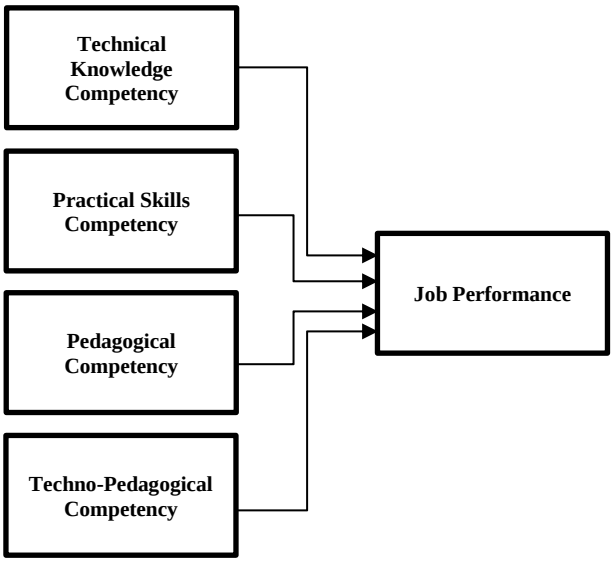

Figure 1: Conceptual Framework

In this study, the conceptual framework is developed to explore how various competencies influence the job performance of pre-service TVET instructors. The key independent variables examined include technical knowledge and practical skills competency, techno-pedagogical competency, and employability skills, which are critical for TVET instructors to effectively train students for real-world challenges. Technical knowledge and practical skills competency are crucial in the vocational education setting, as instructors are expected to deliver hands-on training that mirrors the needs of the industry. Studies, such as those by Halim et al. (2015), have shown that technical expertise directly enhances instructional effectiveness and student outcomes. This study suggests that TVET instructors with stronger technical competencies will perform better in their roles, as they can align their teaching with the practical needs of their students and the demands of the labour market.

Techno-pedagogical competency reflects the instructors' ability to integrate technology into teaching, a skill that has become increasingly important in modern educational settings. The TPACK framework, introduced by Mishra & Koehler (2006), underscores the necessity of blending technology with pedagogical techniques to improve instructional outcomes. TVET instructors who are adept at incorporating digital tools into their teaching are more likely to engage students and prepare them for technology-driven industries, thus enhancing job performance. This competency is essential in a rapidly evolving technological landscape, where both students and educators must be equipped to navigate digital tools and platforms.

The hypotheses are formulated to investigate the relationships between key competencies and the job performance of TVET trainee instructor graduates. Grounded in established theories and prior research, these hypotheses aim to explore how technical knowledge, practical skills, pedagogical competency and techno-pedagogical competency influence instructor effectiveness.

H1: *There is a positive relationship between Technical Knowledge Competency and the Job Performance of TVET Trainee Instructor Graduates.*

H2: *There is a positive relationship between Practical Skills Competency and the Job Performance of TVET Trainee Instructor Graduates.*

H3: *There is a positive relationship between Pedagogical Competency and the Job Performance of TVET Trainee Instructor Graduates.*

H4: *There is a positive relationship between Techno-Pedagogical Competency and the Job Performance of TVET Trainee Instructor Graduates.*

These hypotheses examine the relationships between specific competencies and the job performance of TVET trainee instructor graduates. H1 and H2 suggests that strong technical knowledge and practical skills directly enhance job performance, as these competencies are fundamental to delivering effective vocational training aligned with industry demands. H3 proposes that pedagogical competency, encompassing teaching methods and strategies, contributes positively to performance by enabling instructors to effectively communicate knowledge and engage students in learning. H4 emphasizes the importance of techno-pedagogical competency, highlighting the integration of technology into teaching methods. This competency is increasingly critical in modern education, where technology plays a pivotal role in improving instructional delivery and adapting to evolving educational and industrial landscapes.

Together, these hypotheses underscore the multifaceted nature of job performance, reflecting the interplay of technical expertise, pedagogical skills, and technological integration in shaping effective TVET instruction. By testing these hypotheses, the study aims to provide a comprehensive understanding of the factors that influence job performance among TVET pre-service instructors, offering insights into how all factors shape instructional effectiveness.

4. Conclusion

This study presents a significant contribution to the field of Technical and Vocational Education and Training (TVET) by developing a comprehensive framework for evaluating the job performance of TVET trainee instructor graduates. The proposed framework addresses critical gaps in existing research by integrating key factors that influence job performance, offering a structured and systematic tool for assessment. By focusing on competencies such as technical skills, pedagogical abilities, and industry alignment, the framework enhances the evaluation process and provides actionable insights for improving the preparedness of TVET instructors.

The practical implications of this framework are profound, as it bridges the gap between TVET training programs and the dynamic demands of the industry. By aligning instructor training with real-world expectations, the framework ensures that TVET graduates are better equipped to meet workforce challenges, thereby strengthening the overall quality of technical education. Looking ahead, the study recommends testing and implementing the framework in real-world settings to validate its applicability and effectiveness. Additionally, further research is encouraged to refine and expand the framework, ensuring its relevance and adaptability to evolving industry needs. This ongoing effort will contribute to the continuous improvement of TVET education and its alignment with global standards.

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