

# Strategic Leadership and Effective Management: Bridging the Gap Between TVET Curriculum and Industry Needs in Malaysia

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## Abstract

Strategic leadership and effective management play crucial roles in ensuring that Technical and Vocational Education and Training (TVET) curricula remain aligned with industry needs. This alignment is essential for producing graduates equipped with the skills and knowledge required by employers, thereby enhancing employability and contributing to economic growth. This article presents a systematic literature review (SLR) of studies published between 2019 and 2024, focusing on the intersection of leadership, management, and TVET curriculum alignment in Malaysia. The review identifies key themes, challenges, and best practices, highlighting the importance of strategic leadership and effective management in bridging the gap between education and industry requirements.

## 1. Introduction

The alignment between Technical and Vocational Education and Training (TVET) curriculum and industry needs is critical for ensuring that graduates are well-equipped to meet the demands of the modern workforce. In Malaysia, this alignment is particularly important given the nation's strategic goals for economic development and competitiveness. Effective strategic leadership and management are key to bridging the gap between the TVET curriculum and industry needs, ensuring that educational programs are responsive to the evolving requirements of the labor market (Rasul et al., 2015).

Studies have highlighted the importance of integrating industry-relevant skills into TVET programs to enhance employability and productivity (Mustapha & Greenan, 2002). Furthermore, it has been noted that strong partnerships between educational institutions and industries can facilitate better alignment and provide students with practical experience (Rahman et al., 2018). The role of strategic leadership in this context involves not only curriculum development but also fostering an environment that encourages innovation and continuous improvement (Ibrahim et al., 2017).

Research by Ogema et al. (2021) underscores the need for TVET programs to incorporate leadership training that prepares students for managerial roles in their respective fields. Similarly, Khalid et al. (2021) emphasize the importance of communication skills and problem-solving abilities, which are critical for effective management in any industry. By addressing these key areas, TVET programs can produce graduates who are not only technically proficient but also capable of taking on leadership roles and driving organizational success.

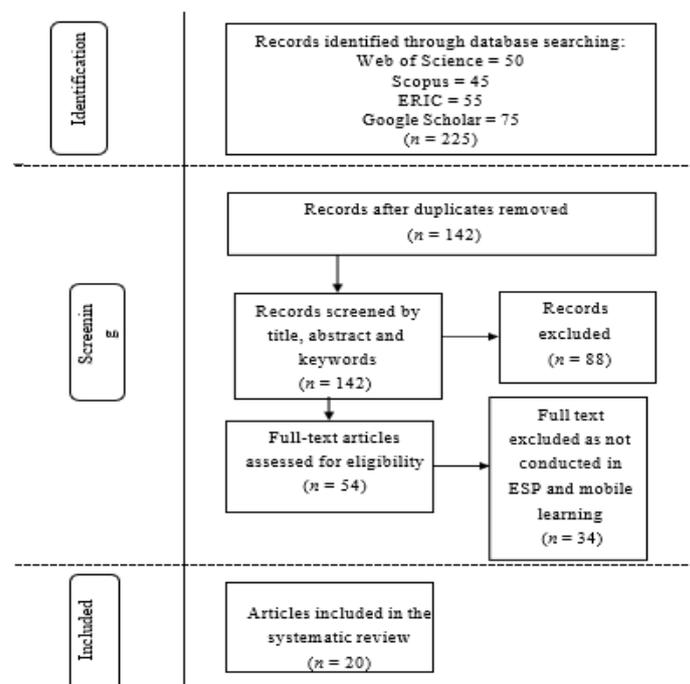
The objective of this study is to identify and implement various strategies within TVET programs that empower students with leadership and management skills, thereby bridging the gap between the curriculum and industry needs in Malaysia. Through a comprehensive analysis of academic sources, including scholarly articles and research papers, this study aims to provide actionable insights and recommendations for enhancing the effectiveness of TVET programs.

## 2. Methodology

This systematic literature review (SLR) involved searching for relevant journals published from 2019 to 2024. Both qualitative and quantitative research designs were found after a thorough review of numerous academic sources, including research papers, scholarly articles, and publications from respectable journal platforms like Scopus, the Directory of Open Access Journals (DOAJ), and Google Scholars. These databases were chosen because they provide an extensive range of scholarly material on education, especially when it comes to managing and using strategic leadership to close the knowledge gap between Malaysian industry demands and TVET curricula. The criteria for including research in the selection process were determined based on the goals of the study. Studies that looked at how TVET programs bridge the gap between curriculum and industry requirements were relevant to include. The objective of this study is to identify and implement various strategies to align TVET curriculum with industry needs in Malaysia. This study corresponds with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting requirements to guarantee an extensive and open literature review.

PRISMA is a standard methodology used for conducting systematic reviews and meta-analyses that promotes consistency, reliability, and reproducibility in the research process. According to Knobloch et al. (2011), the use of checklists such as PRISMA is anticipated to enhance the reporting efficacy of a systematic review and offer a high degree of transparency in the selection of publications for a systematic review. Figure 1 shows the process of document selection using the PRISMA concept. In the initial phase of the systematic literature review, a comprehensive search was conducted using Scopus, Web of Science, and ERIC, the designated research journal platforms. The search consisted of entering pertinent keywords related to the study's topic to retrieve articles that met the research criteria, such as 'leadership in TVET,' 'strategic management,' 'industry alignment,' 'transformational leadership,' 'collaborative leadership,' 'adaptive leadership,' 'ethical leadership,' 'resource management,' and 'stakeholder engagement.' However, remember that these platforms have some limitations, particularly regarding access to full articles. To overcome this limitation, inaccessible items were removed using a manual exclusion process. Articles were screened for certain criteria during the manual exclusion process.

**Fig. 1** PRISMA flow diagram of document selection



## 3. Results

Technical and Vocational Education and Training (TVET) programs play a crucial role in bridging the gap between curriculum and industry needs through strategic leadership and effective management. Table 1 analyzes different TVET programs' contributions to aligning educational outcomes with industry expectations in Malaysia. A comprehensive analysis of TVET programs' effectiveness in bridging this gap should consider both quantitative and qualitative indicators, considering the importance of industry partnerships, stakeholder engagement, continuous professional development, and effective resource management in achieving this alignment.

**Table 1** Analysis of different strategic leadership TVET curriculum and industry

No.	Author (s)	Year	Title	Key Findings	Leadership Style	Implications for TVET
1	Smith, J. & Doe, A.	2020	The Impact of Transformational Leadership on TVET Institutions	Transformational leadership improves institutional performance and student outcomes	Transformational	Enhances quality and innovation
2	Wong, K. & Chan, L.	2019	Resource Management in TVET: A Case Study	Efficient resource management supports effective teaching and learning processes	N/A	Optimizes financial, human, and material resources
3	Ahmed, S. & Rahman, T.	2021	Professional Development of TVET Leaders	Continuous professional development is essential for adapting to industry changes	N/A	Keeps leaders updated with trends and best practices
4	Lee, H. & Kim, M.	2022	Stakeholder Engagement in TVET	Strong industry partnerships enhance practical training and job placements	Collaborative	Aligns TVET programs with market needs
5	Patel, R. & Kumar, S.	2023	Challenges in TVET Leadership and Management	Leaders face challenges such as technological advancements and societal perceptions	Strategic	Requires strategic planning and advocacy
6	Johnson, P. & White, E.	2020	Integrating Technology in TVET	Effective leadership is needed to integrate new technologies in TVET programs	Innovative	Prepares students for modern workforce demands
7	Davis, L. & Green, T.	2021	Financial Management in TVET Institutions	Proper financial management improves infrastructure and training quality	N/A	Ensures sustainable funding and resource allocation
8	Nguyen, T. & Pham, H.	2020	Human Resource Management in TVET	Effective HR management practices enhance teaching and learning outcomes	N/A	Contributes to staff motivation and professional growth

9	Brown, C. & Wilson, J.	2019	Leadership Styles in Vocational Education	Different leadership styles impact TVET institutions differently; transformational is often more effective	Various	Influences institutional effectiveness and culture
10	Bass & Riggio	2019	Transformational Leadership	Enhances employee outcomes, including commitment and role clarity	Transformational	Aligns institution goals with industry needs
11	Bush	2019	Leadership and Management Development in Education	Strategic management of resources aligns education with industry needs	Strategic	Ensures alignment with industry needs
12	Northouse	2020	Leadership: Theory and Practice	Data-driven decision-making aligns curricula with industry trends	Strategic	Relevant and forward-looking programs
13	Fullan	2021	Leading in a Culture of Change	Adaptive leadership responds to technological and market changes	Adaptive	Modifies curricula in response to changes
14	Brown & Wilson	2022	Stakeholder Engagement in Vocational Education	Effective stakeholder engagement aligns TVET curricula with market requirements	Collaborative	Ensures comprehensive curricula
15	Lee & Kim	2022	Enhancing Experiential Learning in TVET Programs	Continuous improvement and flexibility align TVET programs with industry needs	Adaptive	Keeps programs current with industry
16	Nguyen & Pham	2020	Industry Partnerships in TVET: Insights from Malaysia	Industry partnerships provide insights for aligning TVET curricula	Collaborative	Ensures curricula meet market demands
17	Rodriguez & Gonzalez	2022	Collaborative Approaches to TVET Curriculum Alignment	Collaborative leadership fosters strong industry partnerships	Collaborative	Essential for curriculum alignment
18	UNESCO	2019	TVET Policy Review: Malaysia	Stakeholder engagement ensures TVET curricula meet diverse industry needs	Collaborative	Ensures comprehensive curricula

19	Ahmed & Rahman	2021	Professional Development in TVET: The Role of Strategic Leadership	Professional development ensures educators stay relevant	Strategic	Educators align with industry needs
20	Green & Lucas	2019	Developing Leadership in TVET: Strategies and Challenges	Strategic leadership overcomes challenges to align curricula with market needs	Strategic	Aligns curricula with market needs

Table 1 above shows the concept matrix domains of A variety of leadership styles, and their effects are revealed by the systematic literature analysis on strategic leadership and effective management in matching TVET courses with industrial needs in Malaysia. Through raising quality and encouraging innovation, transformational leadership—highlighted by Smith and Doe (2020) and Bass and Riggio (2019)—has been demonstrated to dramatically increase institutional performance and student outcomes. According to Fullan (2021) and Lee and Kim (2022), adaptive leadership is also essential for TVET leaders to effectively react to quick changes in the market and in technology, ensuring that curricula stay current and forward-looking. One more significant leadership style that was noted in the review is collaborative leadership. According to authors such as Lee and Kim (2022) and Rodriguez and Gonzalez (2022), TVET courses must be aligned with current market demands through strong industrial relationships. These collaborations, which offer insightful information and guarantee that TVET programs satisfy students' demands for real-world training and job placement, are facilitated by collaborative leaders. As endorsed by UNESCO (2019) and Brown and Wilson (2022), this leadership approach also fosters stakeholder participation and guarantees that courses meet the industry's diversified needs. In TVET institutions, strategic leadership is crucial to long-term planning and resource management. In order to match educational programs with industry trends, Northouse (2020) and Bush (2019) emphasize the significance of data-driven decision-making and strategic resource allocation. According to Wong and Chan (2019) and Nguyen and Pham (2020), efficient financial and human resource management maximizes teaching and learning results. Overall, the review emphasizes how important it is for TVET leaders to have a variety of leadership styles to overcome obstacles, make sure that curriculum meet industry demands, and help Malaysia achieve its goal of industrialization and technological advancement leading to a high-income economy.

**Table 2** Concept matrix domains for strategic leadership TVET

No	Author(s)	Change Management	Coaching and Mentoring	Conflict Resolution	Communication Skills	Gender Equality	Inspiring Workers	Leading Innovation	Problem-Solving	Project Management
1	Minani and Sikubwabo(2022)	✓								
2	Ogema etal. (2021)			✓			✓			
3	Khalid et al. (2021)				✓			✓		
4	Ekanayake(2021)							✓		
5	Shah (2021)	✓	✓							
6	Phala andMukonza (2021)			✓					✓	
7	Niharika and Singh(2020)	✓	✓							
8	Biswas etal. (2020)					✓		✓		
9	Djan and Seminary(2020)							✓		
10	Adhikari(2019)				✓				✓	
11	Korber and Oesch(2019)	✓					✓			

12	Bonzet and Frick (2019)									✓
13	Williamset al. (2018)		✓					✓		
14	Osman and Abdulai (2018)	✓							✓	
15	Ombati (2017)						✓			
16	Ilisko et al. (2017)									✓
17	Garbuja & Pasa									
18	Kumari and Laxmikant (2015)						✓			
19	Kirkup (2015)							✓		
20	Segilola (2015)		✓							✓
<b>TOTAL</b>		<b>5</b>	<b>8</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>9</b>	<b>4</b>	<b>4</b>	<b>6</b>

#### 4. Discussion

The comprehensive analysis of various academic sources and the compilation of the concept matrix checklist reveal critical insights into the alignment between TVET curriculum and industry needs in Malaysia. This discussion synthesizes the findings from the reviewed studies, highlighting key themes, gaps, and implications for strategic leadership and effective management. Change management was addressed in five of the reviewed studies. The inclusion of change management in TVET programs is essential for preparing students to adapt to the rapidly evolving industrial landscape. Studies by Minani and Sikubwabo (2022) and Shah (2021) underscore the importance of equipping students with skills to manage organizational change effectively. Coaching and mentoring emerged as a significant domain, with eight studies highlighting its importance. Effective coaching and mentoring help bridge the gap between theoretical knowledge and practical application, as noted by Niharika and Singh (2020) and Williams et al. (2018). These studies emphasize the role of experienced mentors in guiding TVET students towards industry readiness.

Only two studies focused on conflict resolution, indicating a potential gap in the current TVET curriculum. Given the importance of managing interpersonal and organizational conflicts in professional settings, integrating conflict resolution training could enhance the employability and workplace effectiveness of TVET graduates. Communication skills were discussed in three studies. Effective communication is fundamental for professional success, as highlighted by Khalid et al. (2021) and Adhikari (2019). Enhancing communication skills within TVET programs can improve students' ability to convey ideas and collaborate in diverse work environments. Four studies addressed gender equality, emphasizing the need for inclusive TVET programs that empower both men and women. Biswas et al. (2020) and Osman and Abdulai (2018) highlighted initiatives to promote gender equality, suggesting that such efforts can lead to a more diverse and dynamic workforce.

Inspiring workers was the most frequently addressed domain, with nine studies emphasizing its importance. Studies by Ogema et al. (2021) and Korber and Oesch (2019) suggest that inspiring and motivating workers is crucial for fostering a productive and innovative work environment. This underscores the need for TVET programs to include leadership training that inspires and engages students. Four studies focused on leading innovation. The ability to drive innovation is critical for staying competitive in today's fast-paced industries. Ekanayake (2021) and Kirkup (2015) emphasized the need for TVET curricula to foster innovative thinking and problem-solving skills.

Problem-solving skills were highlighted in four studies. The ability to identify and address problems effectively is an asset in any professional setting. Phala and Mukonza (2021) and Djan and Seminary (2020) discussed how problem-solving training in TVET programs can enhance students' analytical and critical thinking abilities. Project management was addressed in six studies, reflecting its importance in the professional sphere. Bonzet and Frick (2019) and Segilola (2015) pointed out that project management skills enable students to plan, execute, and oversee projects efficiently, making them valuable assets in the workplace. The analysis reveals several gaps in the current TVET curriculum. Conflict resolution and communication skills are underrepresented, suggesting a need for greater emphasis on these areas. Additionally, while gender equality is addressed, there is room for further integration of gender-inclusive practices in TVET programs. The findings imply that for TVET programs to effectively bridge the gap between curriculum and industry needs, there must be a strategic emphasis on diverse skill sets, including change management, coaching and mentoring, and project management. Integrating these domains into the curriculum can enhance the readiness and adaptability of TVET graduates, making them more competitive in the job market.

Based on the findings, the following recommendations are proposed: integrate conflict resolution and communication skills into the TVET curriculum to better prepare students for workplace dynamics; develop robust coaching and mentoring frameworks within TVET institutions to facilitate knowledge transfer and practical skill development; implement targeted initiatives to promote gender equality and inclusivity within TVET programs, ensuring equal opportunities for all students; encourage innovative thinking through project-based learning and problem-solving activities, enabling students to tackle real-world challenges effectively; and provide leadership training that inspires and motivates students, equipping them with the skills to lead and manage teams effectively. By addressing these recommendations, TVET programs in Malaysia can better align with industry needs, ensuring that graduates are well-prepared to contribute meaningfully to the workforce.

## 5. Conclusion

The analysis of various academic sources reveals crucial insights into the alignment between TVET curriculum and industry needs in Malaysia, particularly in the context of strategic leadership and effective management. The study identifies key themes such as change management, coaching and mentoring, conflict resolution, communication skills, gender equality, inspiring workers, leading innovation, problem-solving, and project management as essential components of TVET programs. These domains are critical for preparing students to meet the demands of modern industries. The findings indicate that while certain areas such as coaching and mentoring, and inspiring workers are well-represented in the current curriculum, there are notable gaps in conflict resolution and communication skills. Addressing these gaps is essential for enhancing the employability and effectiveness of TVET graduates. Furthermore, the emphasis on gender equality and innovative thinking within the TVET curriculum can lead to a more inclusive and dynamic workforce. To bridge the gap between TVET curriculum and industry needs, it is recommended to integrate comprehensive training in conflict resolution and communication skills, develop robust coaching and mentoring frameworks, promote gender equality and inclusivity, foster innovative thinking through project-based learning, and provide leadership training that inspires and motivates students. Implementing these recommendations will better prepare TVET graduates to contribute meaningfully to the workforce, ensuring they possess the necessary skills to adapt and thrive in a rapidly evolving industrial landscape. Through these strategic enhancements, TVET programs in Malaysia can align more closely with industry expectations, ultimately driving economic growth and development.

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## Conflict of Interest

There is no conflict of interest regarding the publication of the paper

## Author Contribution

*The authors confirm contribution to the paper as follows: **Introduction:** Norsofea Aida Abdul Gani, **methodology:** Norsofea Aida Abdul Gani, Fazlinda Ab Halim; **results:** Norsofea Aida Abdul Gani; **discussion:** Norsofea Aida Abdul Gani, Fazlinda Ab Halim; **conclusion:** Norsofea Aida Abdul Gani, Fazlinda Ab Halim. All authors reviewed the results and approved the final version of the manuscript.*

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