

Analysing The Way Forward to Overcome Barriers in Managing Malaysian TVET-Institution and Industry Partnership

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ABSTRACT

TVET is crucial for developing countries in preparation for the 21st-century skills demand. In preparing for those demands, TVET-Institutions is actively engaged in producing a skilled workforce to accommodate the country's labour market needs. Therefore, an ongoing initiative has been taken in improving and upgrading the current TVET-Institutions to increase a workforce that meet the industry need. However, some of the current TVET-Institutions' directors came from different background and some of them is not from the engineering or Technical Vocational Education and Training (TVET) administration backgrounds, of which the nature of managing the college is primarily different. Therefore, this study was conducted to suggest an improvement on TVET-Institutions in managing TVET-Institution and industry partnership, which empowered the industry as one of the vital stakeholders. A qualitative research design using the survey design approach, was adopted in this study. The instrument used is survey form. The questionnaires distributed to the respondents through Google Form are open -ended questions. Census sampling and purposive sampling techniques were selected in this research for choosing the right respondents. A total of 87 respondents were selected in this research, consists of experts from Malaysian TVET association bodies, government, and industries. The data were analyzed using Atlas.ti software. This research produces a model as a guide for the way forward to overcome the barriers. This research proposes knowledge expansion on the theory and concept of industry-led knowledge and competency among TVET-Institutions' directors who can lead to the suggestion of academic and socio-economy increment.

Keywords: Technical vocational education and training; industry; barriers; partnership

INTRODUCTION

Technical Vocational Education and Training (TVET) is crucial for developing countries in preparation for the 21st-century skills demand. In preparing for those demands, TVET-Institution is actively engaged in producing a skilled workforce to accommodate the country's labour market needs. Collaboration between institutions and industries for skills development is very important through education and training, adoption of knowledge (innovation and technology transfer) and the promotion of entrepreneurship (start-ups and spinoffs) (Guimón 2013). Also, through a collaboration between firms can strengthen their networks, helping in promoting the capabilities necessary to successfully translate market opportunities and managing the human capital (Roshani, Lehoux, & Frayret 2015). Moreover, the future work vision will demand new competencies, and it is necessary to create opportunities for the acquisition of the required skills through high-quality training (Erol, Jäger, Hold, Ott, & Sihm, 2016). Thus, the industry and institutions collaboration much more urgent in addressing the skills development in the future.

METHODOLOGY

This research applies qualitative research design using the survey design approach. The instrument used is survey form. The questionnaires distributed to the respondents through Google Form are open -ended questions. Census sampling and purposive sampling techniques were selected with a total of 87 respondents were selected in this research, consists of experts from Malaysian TVET association bodies, government, and industries. The data were analysed using Atlas.ti software.

RESULTS AND DISCUSSION

The results show the way forward in improving the management of industrial-led TVET-Institutions. The suggestions are based on the findings and analysis from the open-ended survey given to the respondents. Figure 1 shows the model on suggestions to overcome the barriers faced in managing collaboration between TVET-Institutions and industry. The suggestion inclusively addressed the two types of barriers: the managerial skill barrier and collaboration barriers.



FIGURE 1. Model showing suggestions to overcome the barriers in managing industrial-led vocational college

Aside from industrial visit, industrial attachment is the suggestion being listed by the respondents. Based on their opinions, industrial attachment can help the directors upgrade their management / corporate skills and undergo competency training/ courses related to management. All in all, the suggestions are focused on enhancing the director’s managerial skill to manage the TVET-Institutions and industry partnerships.

TABLE 1. Suggestion on communication skill, competency training, management skill, corporate skill, industrial attachment, and an industrial visit to overcome barriers in managing TVET-Institutions and industry partnerships.

Suggestion on communication skill, competency training, management skill, corporate skill, industrial attachment, and an industrial visit to overcome barriers in managing TVET-Institutions and industry partnerships.	
Communication Skill	
1	Communication skills
2	Related courses and training
3	Hold special courses

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4	Upskill the knowledge through quality courses conduct by professional bodies
5	Short courses and benchmarking visits to the industry
Competency Training	
1	Attend an institutional director competency course
2	Related courses and training
3	Specific training and coordination of action soup
4	Conduct training
5	Training makes a joint mou between many directors and the industry.
6	Training and exposure
7	Short courses and benchmarking visits to the industry
Management Skill	
1	Provide access for directors to undergo industry attachment training as management in the industry in related fields.
2	Hold special courses
3	Training in managing collaboration

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4	Train institutional Directors in industry -based management
5	Courses for TVET-Institutions directors on how to manage the collaboration with industries
6	Upskill the knowledge through quality courses conduct by professional bodies
7	Industrial management skills courses or seminars
8	Short courses and benchmarking visits to the industry
9	Management skills in information system
10	Give more knowledge by entering management courses
Corporate Skill	
1	Corporate management training
2	There needs of corporate skills
3	Hold special courses
4	Provide corporate management skills training to college directors
5	Upskill the knowledge through quality courses conduct by professional bodies
6	Short courses and benchmarking visits to the industry
Industrial Attachment	
1	Industry attachment program for TVET-Institutions directors
2	Provide access for directors to undergo industry attachment training as management in the industry in related fields
3	Directors need to be involved in the industry
4	Conduct management -related industry attachment programs for institutional administrators.
5	Attachment to the industry for greater exposure in managing the industrial organization.
6	Need more training in the industry
7	Upskilling tvet opportunities
8	Placing lectures in the industry for a certain period as industry players
Industrial Visit	
1	Respectfully pay a visit to the industrial place
2	Visits to related industries
3	Short courses and benchmarking visits to the industry

Moreover, the respondents saw the importance of TVET-Institutions' policies and full support from the ministry in collaborating with industries. Moreover, the respondents suggested that the government allocate rewards or incentives for the industries that collaborate with TVET-Institutions (Table 2). To them, the reward system could attract the industries to collaborate with TVET-Institutions. The industries need something in return from the collaboration (win-win situation), such as tax reduction or exemption.

TABLE 2. Suggestion on policy, funding, and support to overcome barriers in managing TVET-Institutions and industry partnerships.

Suggestion on policy, funding, and support to overcome barriers in managing TVET-Institutions and industry partnerships.	
Policy	
1	Autonomy and encouragement from the government
2	The government must gazette the need for this collaboration according to the industry category itself.
3	Requires industry participation
4	The government must gazette the need for this collaboration according to the industry category itself.
5	Public service circular should be more flexible to make it easier for teachers to carry out their duties regarding institution collaboration
6	Firm policies in collaboration
7	Government must come out with proper guideline and policy
Funding	
1	Grants or incentives from the government to industries that collaborate with institutions such as tax exemptions on training and equipment donated.
2	Funds to encourage industry players to enter institutions
3	Provide special funds for collaboration with industry
4	Provide incentives in the form of tax relief
5	Government provisions and policies
6	Tax relief incentives to the industry.
7	Special payment arrangements should be indexed not based on an educational level but from the mega experiences earned from hands-on fieldwork or international level book writing.
8	Yes, please give rewarding allowances to consultants who want to give more but cant because we also have bills to pay.
Support	
1	100% support from the ministry of education
2	Provide exposure and awareness of the role of institutions as contributors to industry and not merely social responsibility.
3	The ministry encourages institutions to collaborate

Without support and help from the authorities, the collaboration cannot be done successfully. In order to have a stable and good collaboration, the incentive or reward system must be allocated in the ministry's budget. Thus, based on the suggestions listed above, it can be summarised that the ministry's role is significant in order to overcome the barriers in managing TVET-Institutions and industry partnerships.

Autonomy was also being mentioned as one of the suggestions to overcome barriers in managing TVET-Institutions and industry partnerships. With autonomy, any MoU approval process will be done at the college level without any bureaucracy. Other than that, TVET-Institutions

need autonomy in managing their finance. Besides autonomy, the collaboration must be managed by a suitable person-in-charge. They suggested that TVET-Institutions appoint suitable lecturers for the collaboration. For instance, the lecturer with an automotive background will handle the MoU regarding automotive industries because of their knowledge. Respondents also highlighted the intermediate body's existence to collaborate and frequent discussions between TVET- Institutions and industry to ensure that the collaboration's needs and purpose are achieved (Table 3). The consultant body is the body that acts as a feeder for both industry and TVET- Institutions in order to make sure the collaboration works accordingly. Furthermore, the factors such as society, industry, and the role of government needs to be a concern while developing a curriculum (Khan & Law, 2015).

TABLE 3 Suggestion on autonomy, dialogue session/ workshop, consultant body, TVET- Institutions -industry needs, the suitable person-in-charge, communication platform, and collaboration to overcome barriers in managing TVET-Institutions and industry partnerships.

Suggestion on autonomy, dialogue session/workshop, intermediate body, TVET- Institutions -industry needs, the suitable person-in-charge, communication platform, and collaboration to overcome barriers in managing TVET-Institutions and industry partnerships	
Autonomy	
1	Provide flexibility and ease of use of finance to make claims
2	Expand the autonomy of vocational colleges
3	Autonomous power to institutions
4	Autonomy and encouragement from the government
4	Reduce bureaucracy, appropriate laws and regulations
5	Reduce bureaucracy
6	The institution is allowed to draft an agreement before it is reviewed by the ministry.
7	Autonomy and funding for collaborating institutions
8	Autonomy to manage institutions
9	Autonomy is given to institution regarding this collaboration.
Dialogue Session/Workshop	
1	Continue to convince them of the institutional curriculum through ongoing face -to -face discussions
2	Dialogue with industry
3	Increase the number of spaces and channels for discussions and activities that can involve the institutional industry working together.
4	MOE holds collaborations and workshops between TVET-Institution directors and industry players.
5	There is always a follow -up to discussions between institutions and industry

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6	Have face to face sessions between industry and vocational college director as often as possible
7	Round table discussion
8	Inviting industry management in cordial talks with the college directors
Intermediate Body	
1	External relations and industry committees are given special training to handle collaboration between industry and institutions
2	The steering committee should be a mediator aimed at bridging and facilitating good industry and institutional relations
3	Should have intermediate bodies to do the collaboration
TVET-Institution-industry Needs	
1	TVET-Institution must familiarize themselves with the needs of the industry
2	Try to get in touch and understand each need
3	Frequently discuss on what are the needs, goals, and requirements of industries and colleges
4	Provide exposure and awareness of the role of TVET-Institution as a contributor to the industry and not merely social responsibility.
Suitable Person In-charge	
1	If it's for a mechanical company. If it's possible, it's for the mechanical teacher to take care of it because the teacher understands the shortcomings in the technical field.
2	Appropriate officer to manage collaboration
3	Collaboration is managed by appropriate individuals
Communication Platform	
1	Create a system that is accessible to both parties
2	More space and channels for discussions and activities that can involve industry and institutions
3	Non-face to face communications
Collaboration	
1	More mou and collaboration
2	Increase the collaboration programs between industries and TVET-Institution
3	More collaboration with industries

Overall, all the suggestions can be grouped as collaboration management, categorized into seven subcategories: autonomy, dialogue session/workshop, intermediate body, TVET-Institution-industry needs, the suitable person-in-charge, communication platform, and collaboration. It is important for the institution to create a platform for industry to give opinion and this platform can become one of the ways to communicate between industry and institution. This platform should be one of the mediums that connects industry, government and institutions to discuss and give an opinion in development or improvement in developing a curriculum (Sohimi et al. 2019).

Next, there were suggestions on the need for the industry to visit the TVET-Institutions and appoint TVET-Institutions as their accredited training centre (*Pusat Latihan Bertauliah* = PLB), provide proper equipment and assist the experts in the teaching-learning session, especially in operating the industrial machine (Table 4). All the suggestions listed lead to an approach of bringing industry in TVET-Institutions to ensure collaboration is achievable. Industry visiting TVET-Institutions will help overcome the technology gap between TVET-Institutions and industry to produce competent graduates for the respective field. The association between universities and industries may play a vital role in the area of knowledge sharing (Yadav & Shrivastava, 2015). The need for sharing knowledge between research institutions and industry has become increasingly evident (Janez & Gunter, 2007). The institutions need a motivation to collaborate with industries to improve teaching, access to funding, reputation enhancement, and access to empirical data from industry (Sohimi et al. 2019).

TABLE 4 Suggestion on *Pusat Latihan Bertauliah*, industry visiting TVET-Institution, and expertise from industry to overcome barriers in managing TVET-Institutions and industry partnerships

Suggestion on Pusat Latihan Bertauliah, industry visiting TVET-INSTITUTION, and expertise from industry to overcome barriers in managing TVET-Institutions and industry partnerships	
<i>Pusat Latihan Bertauliah</i>	
1	TVET-Institution serves as a training center for the industry
2	Encourage the industry to get to know TVET-Institution and the programs available at TVET-Institution for employment
3	TVET-Institution as training centre for industry
Industry Visiting TVET-Institution	
1	The industry should come to TVET-Institution to see what they can cooperate with
2	The industrial should come to the institution not the other way
3	Bring in the industry to TVET-Institution
Expert from Industry	
1	Locate a person from the industry to manage the TVET-Institution as a quality management
2	Appoint experts from the industry as advisors
3	Experienced individuals from the industry are appointed as experts

Furthermore, there were also suggestions on upgrading TVET-Institution equipment to ensure the students could be an inventor (Table 5). The suggestions can be summarised that appropriate facilities can help to overcome the barriers in managing TVET-Institutions and industry partnerships. If the students are not exposed to the current technology at the college level, they will be facing any difficulties when entering the real working world. The study by Yadav &

Shrivastava (2015) shows this collaboration will facilitate the formation of knowledge with the support of experts and experienced persons in the industry that can give a right direction to the enthusiastic, intelligent students and making them experts of future. The benefits of university-industry collaboration are also evident in developing countries (Gulmon 2013). These collaborations also give an advantage to the institution to organise MOU agreement to ensure the students are in-line with industry needs and extend OJT duration for the student to get to know industry environment (Sohimi et al. 2019).

TABLE 5. Suggestion on equipment to overcome barriers in managing TVET-Institutions and industry partnerships

Suggestion on equipment to overcome barriers in managing TVET-Institutions and industry partnerships	
Equipment	
1	Industry should be required to provide equipment at institutions
2	Reduce technology gaps by upgrading curricular and equipment to suit industrial needs
3	Vocational students are future inventors if opportunities such as equipment are given to them.

The suggestions also include the module being taught in TVET-Institution. The respondents suggested that the module should come from the industry itself. The module must be parallel with the development of technology and industrial needs nowadays. Furthermore, designing an appropriate curriculum is important for providing such skills and knowledge (Khan & Law 2015). Thus, industries and TVET-Institution must collaborate in developing an appropriate module to cater to the current needs. Besides the module, the students must be equipped with a clear career pathway to produce competent workers for the nation (Table 6).

TABLE 6. Suggestion on clearer module, niche-based program, module from industry, and clearer pathway to overcoming barriers in managing TVET-Institutions and industry partnerships

Suggestion on clearer module, niche-based program, module from industry, and clearer pathway to overcoming barriers in managing TVET-Institutions and industry partnerships	
Clearer Module	
1	Creating a clear module
2	A clearer module is needed
3	Clearer and appropriate module is needed
Niche-based Program	
1	Focused courses
2	Perform the "blanket" method for institutions according to the same program as the major industry centers. Example of an automotive program with a honda company. All existing TVET-Institution automotive programs

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3	Obtaining industry from a centralized party for specific fields according to the niche area of the example college for construction programs, can obtain centralized collaboration with relevant agencies.
4	“blanket” Collaboration
5	Encourage the industry to recognize existing institutions and programs for employment
6	The government must gazette the need for this collaboration according to the industry category itself.
Module from Industry	
1	Industry provides modules to students
2	The teaching modules are from industry
3	Encourage the industry to provide modules
Clearer Pathway	
1	Ask the institution to motivate students about the direction of students so that students know what they will be when they enter the industry
2	Exposing students to career paths
3	Students need to be exposed to a career path after graduation

They also suggested venturing into collaborations through the “blanket” method. Based on their opinions and to ensure that the module and industry-led TVET-Institution can be run smoothly, a niche- based programme must be implemented for the TVET-Institution curriculum. A niche-based program is when a TVET-Institution program is based on the industry niche near the college. For example, if the college is situated near the electronic industry, the college will offer an electric and electronic engineering technology program. This will help in terms of the module, training for students, and exposure for the students to have a clearer career pathway after graduation. Thus, it is important for industry and institutions to highlight the emerging skill needs within industries requirements and incentives to industries involved in training collaboration for encouragement. In producing proficient graduates ready for the industry, it is necessary to know the requirements of the industries through industry-institute interaction (Padma & Sridhar, 2014). Besides that, there is an opinion to organise a forum or engagement session with industry to identify the issues on industry needs (Sohimi et al. 2019).

CONCLUSION

Based on the findings and analysis, it can be simplified that two categories of suggestions are identified: the director’s managerial skill and the TVET-Institution and industry partnership. The director skill category suggests the training and exposure to enhance the director’s skill in managing TVET-Institutions and industry partnerships while TVET-Institution -industry collaboration comprises the suggestions

on ministry role, collaboration management, industry in TVET-Institution, facility, and curriculum. The suggestions regarding the director’s skill and TVET-Institution and industry partnership were addressed to overcome the barriers in managing collaboration. In terms of managerial skills, the directors were advised to attend training to improve their communication skill, corporate skill, and management skills whilst for the TVET-Institution and industry partnership, suggestions regarding ministry role, collaboration management, industry in TVET institution, facility, and curriculum were addressed.

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