

## **PERCEPTION OF VOCATIONAL COLLEGES ACADEMIC STAFFS' ON THE IMPORTANCE AND READINESS TO COLLABORATE WITH INDUSTRY**

Faizatul Ashikin Ramli & Nur Husna Abd Wahid\*

### **ABSTRACT**

The partnership between the industrial sector and technical vocational institutions is a networking towards achieving common goals and provide mutual benefits to both parties. A strong collaboration between vocational colleges and industries is important to bring the country economic growth towards the sustainability of technical and vocational education (TVET) in Malaysia. Collaborations conducted between vocational colleges and industries will create a positive impact through the sharing of additional knowledge and consensus to reduce the mismatch of industrial needs among graduates. However, there is doubt on capability that collaboration can benefits each other between education institution and industry where academics and industry do not understand each other or not capable or ready to collaborate. There is the issues that understanding the readiness of individuals from both sides to engaging the collaboration. Therefore the purpose of this paper is to indentify the importance of vocational colleges - industries collaboration element perceived by vocational colleges academic staff ; and indentify the readiness of vocational colleges - industries collaboration element perceived by vocational colleges academic staff. The data of this study were obtained through questionnaires and analysed using SPSS (Statistical Package for Social Science). Researchers used the entire population 195 vocational academic staffs as a study sample. The six elements of collaboration identified are a) placement in the industry b) curriculum c) added value c) support d) facilities and e) training. The findings of the study found that the majority of vocational academic staffs showed perception of important and ready to implement the element of collaboration with industry. Thus it showed that all these element is important and ready to implement to collaborate with the industry towards sustainability of vocational colleges.

**Keywords:** Collaboration, readiness, importance, vocational college, industry

### **INTRODUCTION**

Technical and vocational education has been the mainstream choice of most developed countries. This is because it is the backbone and the pillar of the economic development of a country. The World Bank (1991) said that the reputation of a TVET institutions is assessed according to its ability in producing qualified graduates and their marketability in their working areas. Strengthening the collaboration of vocational colleges with industries is one of the most frequent demand in discussions on the modernisation of vocational education in Malaysia (Kee, 2016 ; Abdullahu, 2017). Networking between the industries and a TVET institution is encouraged, as it can be a prospect in escalating and improving marketability rate of graduates and enhance the

name of the institutions (William *et al.*, 2015). The government, employers from industries and institutions play equally important role in making sure the success of technical and vocational areas so as the benefits coming from it can be shared together. This is supported by Shameira (2007) which quoted collaboration between industries and TVET institutions has to be seen as a serious matter due to the fact that it can produce reciprocal advantages for both parties. Abdullahu (2017) stated that institution has always been known as place to educate people and provide and generate with knowledge while industries is the place to apply the knowledge and develop towards good economy. The involvement of education and training institutions with the industries is a form of cooperation that existed in order to accomplish mutual objective for instance knowledge sharing, education and mutual consensus (Zool Hilmi *et al.*, 2014). A few instances of cooperation that provide a win-win situation for both parties involved such as research, research consultation, on job training for industrial staff, students exchange, students placement, review on students' academic achievement and others (Liew, Shahdan & Lim, 2012).

The relationship between education institutions and the industries are still very fragile (Ramli, 2011). Main power and communication were the main barriers that impede the collaboration between this sides (Abdullahu, 2017). This relationship need improvement in ensuring economic growth and the sustainability of TVET education in Malaysia. Another that, lack of communication and understanding of each other capability between education institution and industry is one the challenges of the collaboration (D'Este, 2011). There is a doubt on each other capability that collaboration can benefits each other. Abdullahu (2017) also claim that academics and industry do not understand each other or not capable or ready to collaborate. There is the issues that understanding the readiness of individuals from both sides to engaging the collaboration. Therefore the perceived of importance and readiness among academics staff to collaborate should be clarify to identified the before futher research is carried out. In whole, this paper is to reveal the collaborative perceived of importance and readiness to implement the collaboration elements between vocational institutions and the industries.

## **LITERATURE REVIEW**

### **The Importance of Collaborative Education Institutes with Industry**

Collaboration between the two parties is important in ensuring that a goal is achieved successfully. Industries and institutions should work together, help each other and support each other and a good relationship between these two sides will contribute to an ongoing relationship (Kee, 2016). Relationships between educational institutions and surrounding organizations are also important to maintain relationships with communities and social partners. According to Kirya (2016), the collaboration between industry and institutions is important to ensure a quality curriculum where the curriculum must be integrated theory and practice with industry. Thus, the students produced will have double knowledge in terms of theory and practical training from educational institutions and industrial institutions. In addition, students can also be exposed to the latest industry needs and get exposure related to career opportunities and at the same time, the industry gets an advantage in terms of recruiting excellent students to work with them. This is supported by Mohd Zuhdi (2017) were stated that this good relationship leads to the achievement of objectives,

especially in terms of the curriculum in producing the syllabus according to the demands of the passage of time.

In addition, good relations between industry and educational institutions can also improve the soft skills of students as well as students produced to meet the needs of industry and reduce the problem of unemployment (Mohd Kahirol, 2010). Soft skills are among the main criteria for getting a job in the industry, with the early application of soft skills from the industry, greatly helps students in adding added value in themselves. According to Nuriye (2009), the importance of collaborative educational institutions is in terms of course training sharing, career opportunities, offering materials and facilities for workshops, career education, and research. All this is very beneficial to students and teachers in improving their skills. According to Wilson (2012), among the advantages that institutions gain by having a good relationship with the industry is that students from their institutions are easier to get a place to undergo industrial training or undergo apprenticeship training. This is similar to the case in UK educational institutions where educational institutions will invest a lot of money in building and maintaining good relations with industry, but on the positive side students find it easier to position themselves into the industry and encourage bids for the next cohort.

### **The Readiness of Educational Institution to Collaborate with Industry**

Educational institutes and industry both benefit each other where the industry will tend to collaborate on the knowledge that can be applied to innovation and increase product marketing competition, while educational institutes are aware of the importance of good cooperation will benefit in terms of financial assistance as well. benefit in improving the human capital development of future graduates (Abdullahu, 2017). Both play their respective roles as these two parties have their respective strengths as educational institutions have advantages in terms of knowledge while industries have advantages in terms of knowledge application and product improvement. However, the readiness of both parties is still in a poor phase and needs to be refined in more detail from the aspect of individual readiness (Abdullahu, 2017). This is supported by Hamdan (2011) who stated that almost 81% of industry practitioners in Malaysia practice inaccurate ways of collaboration with educational institutes. They practice the way in their way.

Although the overall the awareness of both industry and institutions to collaborate are in the ready phase, there is still a mismatch between the industry and educational institutions at the level of individuals who practice it (Ahmadullah, 2017). This is as stated by Normah (2011), such industry practitioners are reluctant to work with educational institutions because they feel suspicious of the teaching staff do not fully understand the challenges they face in the real industry. Their perspective on academics is that they expect educators to understand the real challenges they are going through in the industry but the fact is that educators are unaware of the problem. This creates a lack of trust and confidence in the industry to work with the institution. The role of superiors and effective communication between the two parties also play a key role in the success of this relationship. Where the teaching staff expects clearer and more effective communication between the two parties and many more collaborative relationships are carried out such as holding talks and meetings in reaching a mutual agreement in producing satisfactory results (D'Este, 2013). Yet poor communication and lack of cooperation from each individual from both the industry as

well as educational institutes make this relationship bland and less successful (Ankrah, 2013). Thus, there need to be further studies related to the readiness to conduct collaboration between educational institutions and industry based on the elements that have been set.

### **Elements of Collaboration**

This subtopic will discuss in details all collaboration elements that are used by researcher through literature review. The researcher then concluded the element between institutions and industries as a) placement in the industry b) curriculum c) added value c) support d) facilities and e) training.

- a) Placement of teaching staff in the industry:  
Provide teaching staff to gain experience of the latest developments in the industry. This placement will take into account the key interests of the teaching staff, students, the community of educational institutions and organizations. One of the main reasons for this placement is to add knowledge related to the topics taught and see the application of the topics taught in the real world of work.
- b) Curriculum improvement:  
curriculum improvement from the industries have to consider task and value, and consultation on curriculum improvement received views from a lot of people such as researchers, representative from industries and social friends.
- c) Added value:  
The industry acts as a consultant to students and in addition, through this process will improve their working skills by improving soft skills, technical and vocational skills. Among the examples by applying for a certificate through industry brands where the graduate gets the certification of technological skills from the industry.
- d) Support:  
The industry participates in delivering courses and workshops for students, providing career-related exposure and providing scholarships to talented students, and paying tuition fees to students who excel in results and show impressive achievements.
- e) Facilities:  
The industry will provide equipment facilities other than the educational institutions also contribute cooperation in the development of new technologies and products in the industry. Educational institutes need collaborative assistance to provide technology that is in line with industry-level use.
- f) Training:  
A process of polishing skills and provides students with various job skills namely technical skills and soft skills where sometimes these skills are overlooked to be implemented in educational institutes, and after students undergo training in the industry, they will be more mature towards work culture in the industry and subsequently produce graduates of high quality. Among the

training conducted by the students are industrial training, apprentice training, and recruitment training.

## **RESEARCH METHODOLOGY**

Quantitative descriptive design approach was employed in this study whereby data was collected at a point across the study area (Kumar, 2011). The research was also quantitative and non experimental in nature (Keith, 2015). The research employed a structured questionnaire for data collection. Researcher adapted the questionnaire from others researcher and modify it suits with the objectives and research questions. Back translation method was employed. The instrument was designed in double matrix to minimize confusion, heuristics and respondent fatigue (Borich, 1980b; Mckim, 2013). Survey items were used to measure level of perceived importance on a five-point scale designated as: 1 = No importance at all, 2 some importance, 3 = moderately importance, 4 = very importance and 5 = extremely importance. Similarly, the items were used to measure level of perceived readiness in the competency areas on a five-point scale as : 1 = Not Prepared at al , 2 = low prepared, 3 = moderately prepared, 4 = high prepared, and 5 = very high prepared.

The population of the study involved vocational colleges academic staff located at Johor who serve more than 5 years. The criteria is selected among experienced and senior staff who had more involvement in on job training and able to contribute significant insight on the collaboratin elements required with indsutries. According to Saifudden (2016) novice teaching staff is the person who have difficulties in skill and pedagogy during delivery the class. Therefore may not be suitable to part of the respondent for this study. This study applied total population sampling technique. According to Stephanie(2018), the benefit using this method is gives deeper insights into a target population than partial samples would be capable of. It has the potential to allow a researcher to paint a much more complete picture, and greatly reduces guesswork. A paper based survey was employed to 258 respondent with 195 response collected making the return rate for this study is eproximately 70%. Overall the survey contains 32 of questions and the data was analysed using Statistical Package for Social Sciences (SPSS1) Version 21. The questionnaire is the a self-evaluative procedure which relies on the judgments of vocational college academics staff to decide which element that they feel important and ready to collaborate with industry.

## **RESULT AND DISCUSSION**

### **Importance and Readiness of Elements Collaboration**

The first analysis focused on self-reported ratings of vocational college academic staff agreements' towards the importance aspects of collaboration between vocational colleges and industries. Aspect being studied were placement of staff in the industry, curriculum, added value, support, facilities and training. The data reveals that most the responses were at the upper end of the scale, namely very important and extremely important, which gave an overall indication that respondents perceived all aspects of collaboration are highly important.

Placing academic staff in the industry was perceived as an important collaboration aspect. Most of the respondent (>80%) agreed to all three items with a highest respon to the second item, indicating placement of acedemic staff in the industry will expose staff with the latest technology. This finding conform to Wu (2009) who stated that placement in the industry is important to improve training and skills among teaching staff . This was also supported by Abdul Rahim (2012) study which stated that industrial placement among teaching staff in the industry is actually important in providing exposure to the latest technology and information related to the industry. Furthermore, experience of placement in this industry will help improve the quality of teaching and learning. Since academic staff in Malaysia Vocational Colleges may have different level of industrial experience —experienced to no experince or limited experience— placing them would be a great exposure to the industrial world. Industrial experince is one of the important indicator in the preparation of career and technical (TVET) teachers arccording to (Bottoms, Egelson, Sass & Uhn, 2013; Gordon, 2009). Therefore, having a collaboration with the industries by allowing academic staff to be placed for a certain period of time is highly beneficial to the staff and students.

Inline with the Malaysia Educational Blue Print (2013-2025) 4<sup>th</sup> shift which aimed to improve the quality of TVET gradute, industry and vocational colleges need to be side by side in the process of developing the learning content. A high majority (>85%) of the respondent agreed for the industries to be involve in the curriculum aspect. Especially in having discussion with industry twice a year, placement of part-time instructors from the industry and having special tasks to improve the curriculum. This finding appears to be consistent with CEDEFOP Sweeden (2016) which stated that discussion regarding quality, contant of syllibus with institution important to fullfill the education requirement from time to time. Since Technical and Vocational Education has the role in preparing students with skills in accordance with the demands of the labor market, curriculum review from the industry is crucial. The vocational college-industry partnership will allow content sharing between vocational colleges hence making sure the curriculum offered is aligned with the industrial needs (Murniati, Usman, & Azizah, 2016; Pillays, Watters & Hoff, 2013; Torii, 2018) especially with the advent of the 4th Industrial Revolution (4IR).The analysis also reveiled that the majority of the respondent realizes a great benefit in receiving professional training courses organized by industry as an added value for the academic staff. As well as appointing the industry as a consultant in improving staffs' soft skills and technical skills. Maleyszyk (2018) pointed out that vocational academic staff professional skill is much more demanding and important compared to student training. A highly skill teacher or trainer in TVET will impact the readiness of teachers to teach effectively (Wahid, 2016).

Vocational colleges definitely depend on the support from the industries, particularly in support program such as being involve the career day. All (100%) respondents agreed that industry involvement in the career day will allow a two way experience sharing between students and the industries. This finding is similar to finding reported by Hull (1998) which stated that career days is very important to help reduce the gap between industrial and education institution and at the same industry people can share their experienced directly to the student. Therefore, providing student a chance to get the real picture of the profession, thus preparing them mentally and physically for the work. The fifth collaboration aspect studied was facilities collaboration. Since technologies in the industries are rapidly changing, most of the vocational colleges are not able to provide up to date facilities due to various challenges (Bakri & Zakaria, 2018). Therefore, resulting

in a high agreement for this collaboration aspect. The majority of the respondent agreed sharing facilities will increase students' competencies and skills. Most of respondent agree for the industries to provides experience in using technological tools to students undergoing industrial training. Rahim (2012) believes that facilities collaboration will help to reduce the mismatch among student skills and support by Raihan (2014) which stated that facilities will increase technical and vocational skill among student. The final collaboration aspect studied was collaboration in training. Result showed that the majority of the respondent agreed that it is very important for the industries to provide training opportunities to students at the end of the semester and thereupon accepting the students to work permanently for the industries. Maleyszyk (2018) support by stated that employers' willingness to absorb student work to industry trough recruitment program proportional to the difficulties they experience in finding workers who talented and really passion in work area field. Table 1 present the findings for six collaboration elements perceived of importance.

Table 1 : Importance of Collaboration Among Vocational College Academic Staff

Item	No Importance At All	Some Importance	Moderately Importance	Very Importance	Extremely Importance
	(f)	(f)	(f)	(f)	(f)
	(%)	(%)	(%)	(%)	(%)
<b>Placement in the industry</b>					
1. Placement of vocational college academic staff in the industry as trainees to understand the work culture in the industry	1 (0.5%)	2 (1%)	25 (12.8%)	99 (50.8%)	68 (34.9%)
2. Placement vocational college academic staff in the industry to keep up with the latest technology	0	4 (2.1%)	16 (8.2%)	98 (50.3%)	77 (39.5%)
3. Vocational colleges academic staff and industry discuss related scope of industrial training placement	0	2 (1%)	22 (11.3%)	88 (45.1%)	83 (42.6%)
<b>Curriculum</b>					
4. Vocational college student assessment questions are evaluated and improved by the industry	0	6 (3.1%)	35 (17.9%)	98 (50.3%)	56 (28.7%)
5. The teaching quality of vocational colleges academic staff is monitored by the industry	1 (0.5%)	19 (9.7%)	43 (22.1%)	94 (48.2%)	38 (19.5%)
6. Vocational colleges held discussions twice a year with industry related needs and demands to fulfill the syllabus	0	0	18 (9.2%)	116 (59.5%)	61 (31.3%)
7. Vocational college students held a study visit in industry	0	0	22 (11.3%)	80 (41%)	93 (47.7%)

Item	No Importance At All	Some Importance	Moderately Importance	Very Importance	Extremely Importance
	(f) (%)	(f) (%)	(f) (%)	(f) (%)	(f) (%)
8. Vocational colleges accept part-time instructors from the industry to teach according to field expertise	0	2 (1%)	39 (20%)	111 (56.9%)	43 (22.1%)
9. The vocational college curriculum is improved through industry partnerships related to the tasks and values needed in the workplace	0	0	23 (11.8%)	105 (53.8%)	67 (34.4%)
10. The industry assist relevant changes role of vocational colleges academic staff as appropriate to meet the needs in the industry	1 (0.5%)	3 (1.5%)	32 (16.4%)	101 (51.8%)	58 (29.7%)
<b>Added Value</b>					
11. Vocational colleges academic staff receive professional training courses organized by industry	0	0	17 (8.7%)	96 (49.2%)	82 (42.1%)
12. Vocational college makes the industry as consultants in improving the soft skills	0	0	18 (9.2%)	115 (59%)	62 (31.8%)
13. Vocational college makes the industry as consultants in improving the technical skills	0	1 (0.5%)	21 (10.8%)	114 (58.5%)	59 (30.3%)
14. Vocational college students who get exposure to the latest technology training from the industry are recognized through certification as an added value	0	4 (2.1%)	10 (5.1%)	102 (52.3%)	79 (40.5%)
<b>Support</b>					
15. Vocational colleges invite industry to their career days to share their work experience	0	0	22 (11.3%)	87 (44.6%)	86 (44.1%)
16. Vocational college students receive a training center from the industry located at the vocational college to encourage entrepreneurial talent among students	1 (0.5%)	2 (1%)	23 (11.8%)	93 (47.7%)	76 (39%)
17. Vocational colleges work with the industry to develop products that have a high potential to be marketed	1 (0.5%)	2 (1%)	21 (10.8%)	103 (52.8%)	68 (34.9%)
18. Vocational college students are offered scholarships from the industry	1 (0.5%)	2 (1%)	23 (11.8%)	96 (49.2%)	73 (37.4%)
<b>Facilities</b>					



Item	No Importance At All	Some Importance	Moderately Importance	Very Importance	Extremely Importance
	(f)	(f)	(f)	(f)	(f)
	(%)	(%)	(%)	(%)	(%)
19. The industry provides facilities such as machines to vocational colleges to improve working skills among students	1 (0.5%)	1 (0.5%)	11 (5.6%)	97 (49.7%)	85 (43.6%)
20. Vocational colleges collaborate with high-technology industries to share new knowledge related to industrial equipment	0	0	9 (4.6%)	102 (52.3%)	84 (43.1%)
21. Vocational colleges with industry hold mentee mentor programs related to facility sharing	0	0	28 (14.4%)	105 (53.8%)	62 (31.8%)
22. The industry provides experience in using technological tools in the industry to students undergoing industrial training	0	1 (0.5%)	9 (4.6%)	97 (49.7%)	88 (45.1%)
<b>Training</b>					
23. Vocational college students are given apprenticeship training in the industry	1 (0.5%)	0	17 (8.7%)	95 (48.7%)	82 (42.1%)
24. Excellent vocational college students will be trained in the industry and be absorbed	0	0	10 (5.1%)	94 (48.2%)	91 (46.7%)
25. Vocational college students are recruited by the industry as a measure to solve employers' problems to find employees who are interested in the field	1 (0.5%)	2 (1%)	10 (5.1%)	94 (48.2%)	88 (45.1%)
26. The industry offers industrial training among vocational college students at the end of the semester	0	0	13 (6.7%)	84 (43.1%)	98 (50.3%)

### **Readiness of Elements Collaboration**

For the second (Table 2) part of the analysis, academic staffs' perception of readiness towards all the collaboration aspects was analyzed. In comparative to the previous part (perceived importance), respondent showed slightly lower level of readiness in the implementation of certain collaboration aspects.

Although majority of the respondents agreed to the importance of placing academic staff in the industries there are about 30% of the respondent felt moderately ready to not ready at all to be placed in the industries. This could be due to no specific guidelines from stakeholders regarding placement in the industry. In addition, vocational college academic staff might feel burdened with two responsibilities which is teaching and industry placement demands. In addition "a part from teaching, teachers are also burdened with clerical duties, be a facilitator, motivator, planner,

advisor curriculum advisor or club leaders, sports coaches, manage student data, manage student discipline and many more” (Taharim, Jayasuriya, Xiang, & Mazhar, 2017). The overburden of duties might hinder the opportunities of academic staff to take other responsibilities such as being placed in the industries. Therefore, if this collaboration is important, a clear guideline between vocational colleges and industries is needed to clarify the policies and procedure of the placement.

For second aspects of collaboration, all of vocational college academic staff showed readiness to collaborate to improve the curriculum. The majority of the respondent felt ready to held a study visit in industry to improve curriculum. Industrial site visit has become a common practice within the vocational colleges as one of the outside classroom activities (Manap, Hassan, & Syahrom, 2017) thus, explaining the high level of readiness. However more than half of the respondent (60%) felt moderately to not prepared at all to be monitored by the industry. Since academic staffs are usually being monitored by other staff or the administrator for evaluation purposes, being observed by an ‘outside’ entity could create anxiety thus resulting in a lower level of readiness. Vocational colleges should not refer industries as an outsider yet as part as their learning community. Stoll, Bolam, McMahan, Wallace and Thomas (2006) noted that professional learning community should include group of people, motivated by a shared learning vision, who support and work with each other, finding ways, inside and outside their immediate community, to enquire on their practice and together learn new and better approaches that will enhance all pupils’ learning. Therefore, industries should play a significant role in the vocational college learning community. High readiness was also observed among respondent to received professional training courses organized by industry, ready to consult industry for skills enhancement, and providing extra certification for students. This element is seen as an added value for vocational colleges staff as well as for the students. Missouri (2009) emphasized that each industry has its own set competencies that have been defined by experts in the subject matter industry. With the assistance of industry experts in the field have also helped to improve the professional skills not only to students, but also give the same benefits to the vocational college staff academic.

The study also found that vocational college academic staff are open and ready to collaborate with the industry in providing support program for the students. Support programs include career day, entrepreneurial talent training, product development and scholarship from the industries. A small percentage (8%) responded to not being prepared for an entrepreneurial training center set up by the industries. An enterprise run together by industries and vocational colleges might be a new area for vocational colleges to venture. According to Hyslop (2009) career and technical education (TVET) programs has to be connected by a two-way partnerships between education and businesses and “only through dynamic, two-way partnerships will career and technical education and business and industry be able to successfully compete in the 21st century global economy” (p.42). If vocational college is ready to open a space for the industry to set a training center or an enterprise, they need to be ready to share facilities and spaces. Both parties —vocational colleges and industries — should develop a symbiotic relationship. Lastly, for elements of training, a majority of the respondent felt ready to collaborate with industries. Academic staff are mostly ready to collaborate in the industrial training for students. The high level of readiness in this aspect was due to most of the college vocational involved in this study have MOUs with several industries for on-job training. The vocational college-industry

collaboration benefits both parties. On-job training is an important for students to be in the real job world. and as for the industries, it is the best opportunities for the industries to recruit new skilled workers (Pramudhita, 2019; Van Beek, 2001). Table 2 present the findings for six collaboration elements perceived readiness among vocational college academic staff.

Table 2 : Readiness of Collaboration Among Vocational College Academic Staff

Item	Not Prepared At All	Low Prepared	Moderately Prepared	High Prepared	Very High Prepared
	(f)	(f)	(f)	(f)	(f)
	(%)	(%)	(%)	(%)	(%)
<b>Placement in the industry</b>					
1. Placement of vocational college academic staff in the industry as trainees to understand the work culture in the industry	3 (1.5%)	8 (4.1%)	49 (25.1%)	106 (54.4%)	29 (14.9%)
2. Placement vocational college academic staff in the industry to keep up with the latest technology	1 (0.5%)	6 (3%)	46 (23.6%)	99 (50.8%)	43 (22.1%)
3. Vocational colleges academic staff and industry discuss related scope of industrial training placement	1 (0.5%)	6 (3%)	40 (20.5%)	108 (55.4%)	40 (20.5%)
<b>Curriculum</b>					
4. Vocational college student assessment questions are evaluated and improved by the industry	1 (0.5%)	11 (5.6%)	46 (23.6%)	90 (46.2%)	47 (24.1%)
5. The teaching quality of vocational colleges academic staff is monitored by the industry	2 (1%)	15 (7.7%)	43 (22.1%)	99 (50.8%)	36 (18.5%)
6. Vocational colleges held discussions twice a year with industry related needs and demands to fulfill the syllabus	1 (0.5%)	3 (1.5%)	32 (16.4%)	124 (63.6%)	35 (17.9%)
7. Vocational college students held a study visit in industry	0	1 (0.5%)	22 (11.3%)	100 (51.3%)	72 (36.9%)
8. Vocational colleges accept part-time instructors from the industry to teach according to field expertise	3 (1.5%)	6 (3.1%)	46 (23.6%)	105 (53.8%)	35 (17.9%)
9. The vocational college curriculum is improved through industry partnerships related to the tasks and values needed in the workplace	0	5 (2.6%)	32 (16.4%)	118 (60.5%)	40 (20.5%)
10. The industry assist relevant changes role of vocational colleges academic staff as appropriate to meet the needs in the industry	2 (1%)	6 (3.1%)	34 (17.4%)	114 (58.5%)	39 (20%)
<b>Added Value</b>					

Item	Not Prepared	Low	Moderately	High	Very High
	At All	Prepared	Prepared	Prepared	Prepared
	(f)	(f)	(f)	(f)	(f)
	(%)	(%)	(%)	(%)	(%)
11. Vocational colleges academic staff receive professional training courses organized by industry	1 (0.5%)	4 (2.1%)	24 (12.3%)	109 (55.9%)	57 (29.2%)
12. Vocational college makes the industry as consultants in improving the soft skills	0	5 (2.6%)	38 (19.5%)	99 (50.8%)	53 (27.2%)
13. Vocational college makes the industry as consultants in improving the technical skills	0	0	36 (18.5%)	103 (52.8%)	56 (28.7%)
14. Vocational college students who get exposure to the latest technology training from the industry are recognized through certification as an added value	0	2 (1%)	32 (16.4%)	101 (51.8%)	60 (30.8%)
<b>Support</b>					
15. Vocational colleges invite industry to their career days to share their work experience	0	3 (1.5%)	39 (20%)	92 (47.2%)	61 (31.3%)
16. Vocational college students receive a training center from the industry located at the vocational college to encourage entrepreneurial talent among students	2 (1%)	6 (3.1%)	30 (15.4%)	101 (51.8%)	56 (28.7%)
17. Vocational colleges work with the industry to develop products that have a high potential to be marketed	2 (1%)	4 (2.1%)	38 (19.5%)	103 (52.8%)	48 (24.6%)
18. Vocational college students are offered scholarships from the industry	2 (1%)	4 (2.1%)	29 (14.9%)	99 (50.8%)	61 (31.3%)
<b>Facilities</b>					
19. The industry provides facilities such as machines to vocational colleges to improve working skills among students	3 (1.5%)	4 (2.1%)	35 (17.9%)	98 (50.3%)	55 (28.2%)
20. Vocational colleges collaborate with high-technology industries to share new knowledge related to industrial equipment	0	4 (2.1%)	31 (15.9%)	103 (52.8%)	57 (29.2%)
21. Vocational colleges with industry hold mentee mentor programs related to facility sharing	0	5 (2.6%)	33 (16.9%)	109 (55.9%)	48 (24.6%)

Item	Not Prepared At All	Low Prepared	Moderately Prepared	High Prepared	Very High Prepared
	(f) (%)	(f) (%)	(f) (%)	(f) (%)	(f) (%)
22. The industry provides experience in using technological tools in the industry to students undergoing industrial training	0 (0%)	3 (1.5%)	22 (11.3%)	109 (55.9%)	61 (31.3%)
<b>Training</b>					
23. Vocational college students are given apprenticeship training in the industry	1 (0.5%)	2 (1%)	33 (16.9%)	96 (49.2%)	63 (32.3%)
24. Excellent vocational college students will be trained in the industry and be absorbed	0 (0%)	2 (1%)	27 (13.8%)	90 (46.2%)	76 (39%)
25. Vocational college students are recruited by the industry as a measure to solve employers' problems to find employees who are interested in the field	1 (0.5%)	2 (1%)	25 (12.8%)	102 (52.3%)	65 (33.3%)
26. The industry offers industrial training among vocational college students at the end of the semester	0 (0%)	1 (0.5%)	29 (14.9%)	84 (43.1%)	81 (41.5%)

## CONCLUSION

Overall, the data reveals that most the responses were at the upper end of the scale, namely very important and extremely important, which gave an overall indication that respondents perceived all aspects of collaboration are highly important. Even though the readiness to collaborate to all aspects were high, some aspects showed lower percentage compared to the level of importance. Based on this finding, it is recommended that the Ministry of Education, industries and vocational colleges to enhance collaboration capacities to improve current situation. Focus should be given in aspects such as staff placement in the industry, training centers or enterprise, involving industry in classroom observation and improving both academic staff and industry's role in on-job training. Policies and guideline between both parties will enhance the effectiveness of the collaboration. Abdullahu (2017) stated that the cooperative relationship between industry and institutions should be taken seriously because this matter brings exclusive mutual benefits to both parties and they need to be aware of this situation. Discussion, meeting, and seminar between vocational colleges and industry would be a great platform to further discussion of all collaboration aspect. Each aspect of collaboration should be discussed thoroughly to make sure all parties contribute and benefit from the collaboration. Williams et al. (2015) stated that a network of relationships between industry and educational institutions is necessary because this relationship can enhance the prospects of graduates and improve the institution's name. By implementing these six aspects of collaboration, it is hoped that the network of collaboration between vocational colleges and

industry will show great progress. All aspects of collaboration are perceived important for the continuity of the programs and ensuring the quality of vocational colleges and vocational college graduates in accordance with the needs of the industry from time to time. Vocational college-industry partnership should provide a balance contribution from both sides. Since this study only gives collaboration perspectives from the vocational college view, further study is required to acquire the industrial insight of this topic.

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## **ABOUT THE AUTHORS**

### **FAIZATUL ASHIKIN RAMLI**

Kolej Vokasional Kota Tinggi  
Kota Tinggi, 81900, MALAYSIA  
faizatulashikin089@gmail.com

### **NUR HUSNA ABD WAHID (Corresponding Author)**

Universiti Teknologi Malaysia  
Skudai, 81310, MALAYSIA  
husna@utm.my