

*International Journal of Learning, Teaching and Educational Research*  
Vol. 21, No. 12, pp. 126-141, December 2022  
<https://doi.org/10.26803/ijlter.21.12.7>  
Received Sep 13, 2022; Revised Dec 15, 2022; Accepted Dec 19, 2022

# On-the-Job Training in Vocational College: Issue and Improvement Plan

Suzila Othman , Mohd Azlan Mohammad Hussain\*  and  
Rafeizah Mohd Zulkifli   
Universiti Pendidikan Sultan Idris, Malaysia

Mohammad Sukri Saud   
Universiti Teknologi Malaysia, Johor Bharu, Malaysia

**Abstract.** This study was conducted to identify the issues and problems which arise from the perceptions of students, lecturers, supervisors and the industry towards the on-the-job training (OJT) program, which was implemented in Malaysian Vocational College (KV) for 6 months in selected industries. This study is also looking for potential suggestions for the improvement of OJT within Vocational College. This study was carried out using a qualitative research design through a multiple-embedded case study approach. The context of this study includes the challenges faced in the implementation of Vocational College OJT involving students (Case A), OJT supervisor lecturers (Case B) and organizational supervisors (Case C). The sample involved in this study was selected using the purposive sampling method. This study uses the thematic analysis method, using NVIVO12 software as well as content analysis using the matrix method and pattern matching for the cases involved. This study has identified several challenges and issues in Vocational College OJT involving the suitability of the training ground, OJT supervision, the evaluation process and the allowance which affects the implementation of OJT. An important suggestion for future best practise, is to come up with a database of local industries that offer OJT places. This is necessary to avoid the placement of students outside the skill area.

**Keywords:** On-the-Job Training; TVET; vocational college; challenges; solutions

## 1. Introduction

Education is a basic human right, and every individual regardless of race, religion and culture should have the opportunity to gain access to quality educational opportunities. The United Nations Educational, Scientific and Cultural Organization (UNESCO,) through its sustainable development agenda in overcoming global poverty, has suggested that one of the ways to overcome

issues in global poverty among developing and underdeveloped countries, is through the empowerment of education and training in vocational fields (TVET). This transformation aims to develop world-class human capital to support the production of both a skilled and semi-skilled workforce. TVET also includes work-based learning, continuous training, as well as professional development which helps to provide recognition based on Malaysia's position as one of UNESCO's member countries. This desire is supported with TVET's transformation to make TVET the main choice for the Malaysian people (2016-2025). The transformation of TVET in Malaysia is also an effort to meet the country's highly skilled human capital needs, which are projected at 7.98 million by the year 2030.

One of the efforts that has been implemented to mainstream TVET in an attempt to increase the amount of local skilled workforce, is through the rebranding of 85 vocational colleges in Malaysia which are the main providers of TVET programs in the country (Malaysia Ministry of Education, 2015). This rebranding includes updating the training curriculum and study structure, so that the programs at the vocational college are able to produce skilled graduates who meet the needs of the industry. Among the improvements which have been implemented in the structure of the vocational college training curriculum, is to introduce industrial training or on-the-job-training (OJT) to provide real work experience in the industry to prospective graduates.

The implementation of industrial training for vocational college graduates is important. This is because industrial training is a platform which allows students to integrate theoretical knowledge with the real work environment and practice the knowledge that is gained (Yusof, Mohiddin, Shah & Shah., 2018). This industrial training was also found to provide a space for students to improve self-discipline, work according to the industrial practices, perform tasks in a group, and prepare themselves to enter the world of work after graduation (Mohd Saifudin and Zolkepli, 2018). This is in line with the intention of the Ministry of Higher Education through its 10 thrusts in the Malaysian Education Blueprint (Higher Education) 2015-2025, which is to produce quality TVET graduates.

However, there are still various issues that have become a challenge for the implementation of OJT in Malaysian vocational colleges. For example, Mohd Zuhdi's (2017) study found that there are graduates who enter certain fields and are given work which does not match their area of training. This matter needs to be highlighted as it is closely related with the method of OJT selection, and is also a factor behind the selection of the OJT location. This issue has also been raised in Machart's study (2017), which states that the effectiveness of industrial training depends on the company chosen by the student, whether by field or otherwise, the attitude of the student, as well as the planning of the work content given to the student. This issue can contribute to the mismatch of jobs with students' existing knowledge and skills. Future students may feel awkward in performing the job assigned to them, which will affect the usefulness of the experience and the student's skills which are expected to develop during the implementation of OJT. Data from Malaysia's Labor and Employment Statistics

(2013) also show that 35 percent of workers in Malaysia have low qualifications and work outside their areas of expertise. Companies also face a 68 percent lack of skills among their employees (Salleh, Rosline & Budin., 2015). According to Salleh et al., (2015) this factor indirectly affects Malaysia's goal in developing a skilled workforce.

Besides the issue of incompatibility between the training program and the scope of work of students during OJT, there are still other issues that need to be identified and studied to identify the areas for improvement in the implementation of OJT, in the vocational college program. Therefore, this study was carried out to explore the latest issues and challenges to the implementation of this program. This is in order to identify the issues which affect the effectiveness of the OJT program. The study focuses on the field of Industrial Machining Technology, due to the critical need for students to master skills in operating the latest equipment and machines according to the needs of the industry. This is because the operation of the equipment and machines in this field requires high skill labor.

Based on the issues identified, the researcher will provide recommendations to improve the vocational college's OJT program to produce quality TVET graduates in the field of Industrial Machinery Technology, in line with domestic and foreign industry demands. According to Phang et al., (2014) the evaluation of the development system and training program is necessary to develop highly skilled human resources, and to ensure that the country becomes a high-income country. This will also help to ensure that there can be a guarantee that a skilled workforce will be produced by all skilled training agencies in this country, and that they can meet the job market demands. Furthermore, if all activities within the industrial training can be implemented through a good guidance system, it will make the institution a superior producer of skilled labor ((Febriani, Maha Putri & Purnmasari, 2020).

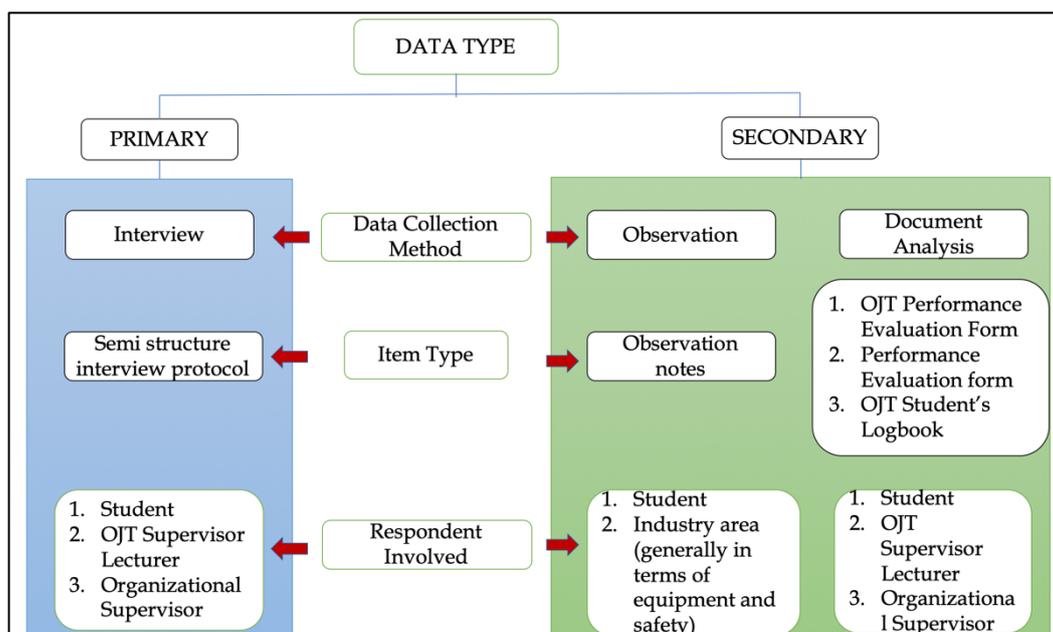
## **2. Methodology**

This study was carried out using a qualitative approach using a case study design, to directly explore the issues that form challenges when students undergo OJT. The multiple case embedded case study method was implemented involving case studies consisting of students, OJT supervisors, lecturers, and industry supervisors. The data collection process in this study involves a combination of interview methods, observation, and document analysis. Two questions were given attention in this study to guide the researchers in finding the issues that form challenges in the implementation of OJT in vocational colleges, namely:

1. How is the implementation process of OJT done in vocational colleges?
2. What are the issues that become challenges to students, supervising lecturers, and the industry in the implementation of OJT for the Industrial Machinery Technology program?

Diagram 1 displays the data collection method metrics based on the type of data obtained. The researcher used the interview method as the main source for the primary data of the study. The interview conducted by the researcher was to

obtain in-depth information from the respondents. Secondary data was obtained by observing students, as well as where students conduct their OJT. Meanwhile, document analysis was carried out on evaluation forms, as shown in the Data Collection Matrix Table below on documents obtained after the students have completed the training. Triangulation involving these three data collection methods is important to prove that the data or methods used in data collection are interconnected, and ultimately form a conclusion in the draft research report (Creswell and Creswell, 2018; Mohd Tobi, 2017; Merriam and Elizabeth, 2015).

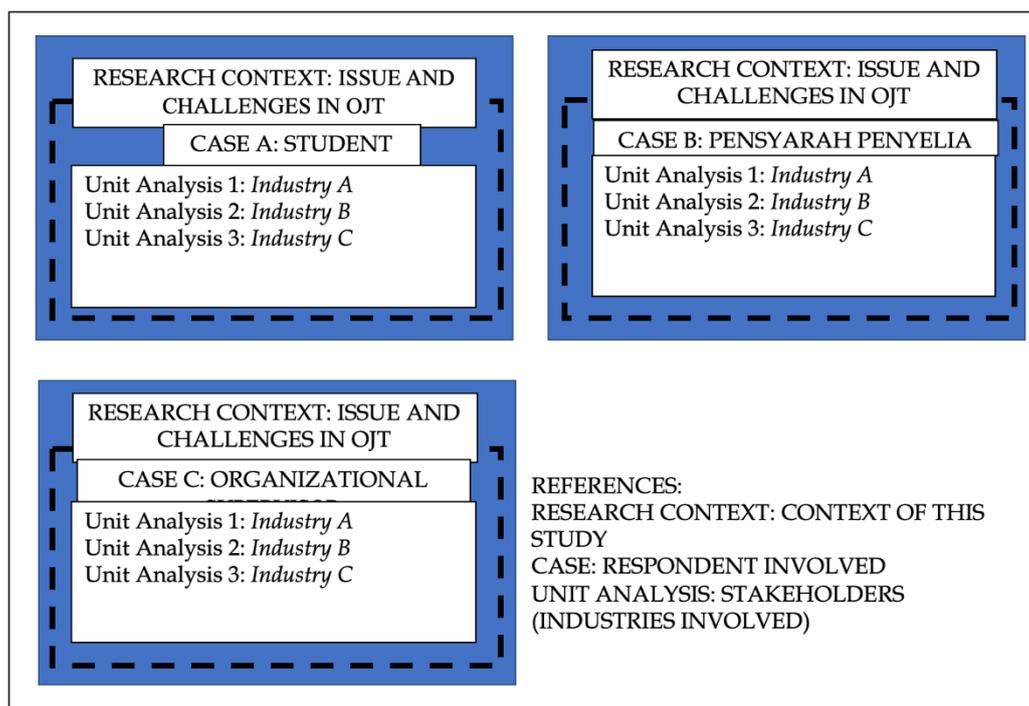


**Diagram 1: Suggested data collection metrics by researchers**

## 2.1 Location and Respondents

In this study, the researcher adopted purposive sampling to identify the sample by using the OJT placement list, obtained from the Industrial Relations and Training Coordinator lecturer, for the Industrial Machining Technology program. The study samples consisted of students, supervising lecturers, and industrial supervisors involved in the Diploma Program in Industrial Machining Technology from five vocational colleges in the North Zone, all of which underwent OJT during six months in their chosen industries.

In this study, the researcher used three sets of data consisting of eleven students who had completed OJT, ten OJT Supervising Lecturers (PPO), and five Organizational Supervisors who were directly involved in the supervision of the OJT students.



**Figure 1: Multiple embedded case study design**

This research was completed by using a design from Yin (2003). This helped to relate the relationships that exist for all units of analysis of this study, which includes the industries which are directly involved during the OJT period by referring to Figure 1. The context of the study which is given focus by the researcher, are the issues that form challenges in the implementation of OJT by the North Zone vocational college students. In the context of this study, the case study was conducted based on three different groups of respondents consisting of students, lecturers and supervisors as well as organizational supervisors. Meanwhile, the unit of analysis will take place based on several industries involved in the implementation of OJT.

## 2.2 Interview

Interviews were conducted individually using the Google Meet platform which has the facility to make video calls, and record the interview sessions. Interviews were conducted for around 45-60 minutes per session. Before the interview, the researcher contacted each respondent to set an appointment. After the respondents agreed, they were given an explanation about the study and were asked to fill out the consent form. They were then assured of the confidentiality of the information given before the interview session was conducted.

The interviews were conducted in Malay using an interview protocol and a semi-structured checklist developed by the researcher. Interview questions were built based on themes obtained from a literature review from a past study. There were also respondents who used English and mixed languages as a medium, as it was more comfortable for them. These interview records were then transcribed verbatim, and analyzed using the NVIVO 12 software to identify themes and sub-themes related to the study.

The researcher had developed three different interview protocols based on the three different groups of respondents, namely students, lecturers, OJT supervisors and industry supervisors. The interview questions and observation checklist built into this interview protocol were based on literature highlights from past studies. Semi-structured interview questions were constructed based on several themes as shown in the table below. The issues that were examined in previous studies were used as initial themes in the construction of interview questions, as well as observation checklists that were constructed.

**Table 1: Semi-structured question framework according to theme**

Questions	Themes
Part 1: Issues on suitability of the training center	
Part 2: Issues with supervision	
Part 3: Issues with institution and training provider organizations	
Part 4: Issues with student discipline during OJT	
Part 5: Issues with OJT assessment by organization supervisor	
Part 6: Issues with the duration of OJT	
Part 7: Issues with allowance	
Other issues from the views and experiences of respondents	

The researcher used a checklist to record all observations of behavior and events in detail. This observation was done to the respondents who are students and also to the industry involved. From these records, the researcher was able to record factors which can be linked to the findings through interviews and document analysis. Among these factors are the work environment, attitude, way of communicating, and the appearance of the respondent.

Even though the researcher used the semi-structured interview method, they were able to obtain expert opinions during the process of developing the interview questions. They also reviewed the data through the "peer check" method to ensure that the method of questioning, the use of language and the questions that came up did not deviate from the objectives of the study. Each interview question developed by the researcher was given to seven experts to be evaluated and confirmed. There were three experts in the field of Malay, consisting of Malay language lecturers at the vocational college, while the rest of these experts were lecturers in the field of technical and vocational education and experts in qualitative studies.

The results of the interviews were transcribed and analyzed into themes and sub-themes related to issues during the implementation of OJT for students of the machining course at the vocational college. The researcher used the NVIVO12 software to analyze the themes that were identified from the interviews conducted. In this study, the researcher used the "thematic analysis" approach. "Thematic analysis" is where themes that exist are a result of the highlights of previous studies. Next, a comparison between the cases was made to obtain conclusions on the main themes. The researcher used the checklist developed by Braun and Clarke (2012) as a guide in analyzing the data obtained. The checklist developed by Braun and Clarke (2012) is a detailed step-by-step which can be

used as a guide by the researcher to analyze the data, transcribe the interview, and write the report.

### 3. Research Findings

#### 3.1 OJT Implementation

In general, the OJT application process was manually completed by the students. The study found that all students applied and chose the location and industry where they would perform the OJT by themselves. There was no data system that stored a list of training places provided to students, which caused students to secure training places which were not related to the field of machining. Apart from that, the students had to travel back and forth to distant locations to find a suitable training place. This situation is described in the following statement:

*Student A: I have to go back and forth from Arau to Alor Setar, Alor Setar to Penang and back to college to send the OJT application forms. However, when we arrived at the factory, we were instructed to leave the forms at the guardhouse only due to strict SOP during the pandemic. So, I am not sure if my forms reached HR or not. Can only wait.*

The difficulty of students in obtaining information on OJT places is also seen to happen to Student B, when Student B also faces the same situation as Student A based on the statement below:

*Student B: I went to the industry myself to inquire about the industry's willingness to accept OJT students.*

Fortunate students managed to secure a training place which relates to their field, while unfortunate ones would get the opposite. This can be seen when one of the OJT students was initially accepted to undergo OJT at a welding workshop in Penang, but then had to stop to find another training place because the operation of the workshop was not related to the field machining. This is stated with the following:

*Student B: First I was accepted to undergo OJT at X Machinery. After that, in a week or two like that, I changed to Industry Y because it was not the same field, it was a normal workshop.*

To prevent issues like these from happening, in line with the opinion of Muhammad Zul Azri et al. (2016), there is a need for a practical/industrial training system in the management of industrial training placements, to make it easier for students to identify the opportunities and fields that are suitable for industrial training placements, in addition to finding job opportunities after graduation. Next, the issue of students choosing an industry which is not relevant to their field of study can be avoided because the training agency data and information can be stored and checked in this system.

Therefore, it is necessary for TVET training institutions such as vocational colleges to provide a systematic OJT coaching system, and a database which contains a list of organizations suitable to be used as OJT centers. This management and database system can make it easier for students to choose a suitable organization, in addition to also giving students a variety of OJT organization options.

### 3.2 Issues on Suitability of Training Centres

Through the research that was carried out, it was found that the selection of an appropriate OJT organization can improve students' knowledge and skills through the work activities carried out in the industry. On the other hand, students who carry out OJT in organizations that do not match their field of study face the risk of losing interest. For example, Student A, who underwent training in the operation of CNC rolling machines in Industry A, stated that he gained an increase in knowledge and skills in the operation of CNC rolling machines. He stated that these experiences and skills were difficult to obtain in depth at a vocational college.

*Student A: So far, I can read drawings and understand the software used because the software used in this industry is not the same as the Inventor software used in college where this software is found to be easier.*

In contrast, Student B changed OJT organizations twice. This situation occurred when, for the first time, he underwent industrial training in an organization that was not related to his field of study. After that, he changed to Industry Y but unfortunately, due to not being able to communicate well and not showing good work commitment, Student B was dismissed.

*Student B: I changed to Industry Y. I was in that industry for less than a week, only four days later I was fired. They told me that I was thrown out because my attitude seemed to be that I was not interested in working and that I lacked communication with others. I was expelled with a female student from KV Butterworth but she was readmitted.*

According to Mohd Zuhdi et al. (2017), technical and vocational education and training institutions play an important role in ensuring that skill mismatches can be minimized. Early prevention measures and strategies need to be devised by training providers to prevent graduates from having problems finding jobs which match their qualifications.

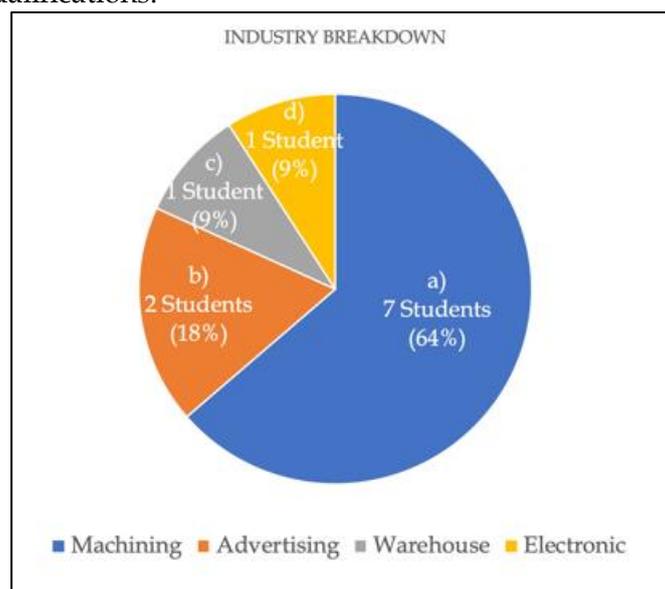


Figure 2: Breakdown of student OJT by industry

Referring to the data shown in Figure 2, there are several things that have been identified to influence the selection of student training places. After the researcher conducted interviews with 11 students, the types of industries which students chose to conduct OJT were as follows:

- a) 62% or six (6) students underwent OJT in industries involving machining.
- b) 18% or two (2) students underwent OJT at an advertising company.
- c) 9% or one (1) student in the industry went to a warehouse.
- d) 9% or one (1) student joined the industry involving electronic equipment.

However, there were also industries that were not categorized as offering work in the field of study. An example is Industry B, which is the shipping industry. This industry is seen to offer a scope of work related to machining, however, the use of machines is limited to conventional lathes. The industry is also looking for skilled or semi-skilled workers to operate conventional lathes to make ship parts.

This situation can be observed when the company asks vocational colleges to send students to undergo training, only to then be absorbed as machinists in their industry with the following statement:

*"If there are more students in this machining field, we ask the college to send them to us for industrial training and for us to absorb them to become permanent employees." - PO B*

This quote also shows that the industry is very interested in getting skilled apprentices to work with their companies, when the industry itself expects the college to send more student trainees to them. This has proven that the industry is also aware that the skilled manpower market is also increasing, and becoming a grab for various manufacturing industries.

There are three main factors that are seen to contribute to the inappropriateness of training places in this study. The first factor is the financial problems faced by students, which is when the allowance offered is too small for students to choose an industry far from home. The second factor is the employer's cooperation with student trainees, which plays an important role in ensuring that students get the appropriate scope of work, so that the student's time is not wasted. The third factor is the influence of friends. This is also seen to play a role for students in choosing their training places. Friends who are comfortable to work together and invitations from friends who are experienced in an industry, may successfully attract students to carry out their training in that industry.

Therefore, it is appropriate if the vocational college in the field of Industrial Machinery Technology conducts a visit with the students and collaborate with shipping companies so that the students are more open in the selection of OJT places to ensure that the placement of the students does not stray from the skills learned.

### **3.3 Issues with Supervision and Evaluation**

In the supervision and evaluation process, there are several issues that arose. Several issues were identified in the findings of this study, namely in terms of the

facilities provided by the college to PPOs to move to the training industry. This problem was observed where most PPOs had to share vehicles with PPOs from other programs, which required advance planning. It is common knowledge that the PPO is tied to a tight teaching schedule. Therefore, almost all PPOs stated that time constraints and time limitations for them to conduct supervision in the industry was one of the factors for the absence of PPOs for supervision. This situation can be referred to in the following respondent's statement:

*PPO A: As we know, Vocational College B is located in the state of Perlis and the state of Perlis lacks industries related to Industrial Machining Technology. So, the students mostly had to undergo OJT in Kedah and Penang. The location of KV B and the location of the industry are very far, making it difficult for the PPO to monitor or visit the students due to time constraints. This time constraint is influenced by the distance, meaning that if the lecturer wants to supervise in a short time, in one day we can target three students, for example, three students in nearby industries. There are also cases where we have to go to industries far away within one day, so the supervision is quite short because we have limited time to interview students and interview industry supervisors.*

This finding is in line with the statement by students at a university in Turkey, who stated that their supervising lecturers only made short visits to supervise them and this then led to missed opportunities in showing their real performance and application of knowledge. This situation occurs when the supervising lecturer's allowance is not provided. This forces the OJT supervisor lecturer to complete the visit in one day, which includes time to travel to the industry which is far away. Therefore, the time of the visit in the industry is limited because a supervising lecturer sometimes needs to complete the visit for two or three students at a time.

*PPO D: In my opinion, if this allowance payment can be implemented, the PPOs can complete the number of supervision well. The PPO can do supervision on Saturday or Sunday. There is no problem to monitor students outside the state of Perlis. If no allowance is given, then PPOs only travel using college vehicles in groups which cause time constraints because vehicles can only be used during working hours.*

According to Intan Fatimah and Ain Suriani (2017), this constraint affects the ineffective management of industrial training before and during industrial training at a university in Malaysia, when students do not get sufficient relevant information before reporting to the training organization. Accordingly, the matter has caused them to lack motivation in carrying out the tasks which have been given, and subsequently causes them to face various problems with industrial supervisors, such as those faced by Polytechnic students in Ghana (Nduro et al., 2015).

For industrial supervisors, on the other hand, the challenges they face are different. For them, the attitude of students during training in their industry is very important in developing confidence during an assignment. This is important to develop students' talents and skills. In this finding, the industrial supervisor has no problem in sharing knowledge and skills, however, this depends on the attitude of the student. If the student is not able to be independent during the

industrial training period, the student will not gain the trust of the rival industry. This will subsequently interfere with the operation of the industry where support from the industrial supervisor is also a factor that has implications to the student, in terms of the work content given to them (Intan Fatimah and Ain Suriani, 2017).

Based on this finding, the attitude of students in the industry is very important because the trust from the industry can help the students to explore their fields more thoroughly. A positive attitude will also further help students in developing their talents and skills in the fields that they are passionate about, and can increase the marketability of students. It can be proven by statement below, PO B was complaining Student B attitude.

*PO B: Sometimes I see that Student B is like a chisel with a hammer. I give one instruction, he does it once, and even simple tasks he cannot do. When Student B first reported himself, as I got to know him, I saw that Student B was less talkative. To me, if a student diligently asks questions and communicates, it means that we can work with him and the student can adapt.*

### **3.4 Communication Skills**

According to Madinah et al. (2017), employability skills are non-technical skills that every graduate should have as they are important skills in the world of work. Employees who are skilled and capable, and who can carry out their responsibilities are the dream and hope of training center providers, and can increase the marketability of students. Studies that have been conducted have found that good communication skills play an important role in improving students' knowledge and skills. Good communication skills allow the instructions given to be analyzed well (Yusof et al., 2018). Students who cannot communicate well will lead to the student getting negative feedback and ultimately makes it difficult for the student to gain the trust to be given assignments.

*PO B: Sometimes I see that Student B is like a chisel with a hammer. I give one instruction, he does it once, and even simple tasks he cannot do. When Student B first reported himself, as I got to know him, I saw that Student B was less talkative, didn't ask a lot of questions. So he seems difficult to work with. Sometimes we instruct one thing, Student B does another thing. For instance, I asked Student B to make a 30cm tank gasket, but he cannot form the gasket shape.*

Besides that, when students are seen as lacking in communication, they are also seen as not interested in working because they are often unable to get along with other employees. This was supported by one of the student's OJT supervising lecturers.

*PPO B: In terms of work performance, in the drive to seek experience and attendance, there were no major issues. But from what I got, one of it was after a few months my OJT student was dismissed. I asked if he had any disciplinary issues. The student said no, but that he had no choice, he just sat and was less proactive. Maybe the industry was too strict.*

Overall, because the students did not communicate well or because there was no two-way communication with colleagues and so on, students lacked self-

confidence. The effect of the situation had caused the students to not be able to master the learning and skills at work due to the attitude brought by the students themselves. This caused the students to waste time looking for new training places.

### **3.5 Empowerment of OJT in Vocational Colleges**

There are a few things that need to be considered by the training provider since some things have been raised by either the students, the OJT supervisors or the industry involved with the vocational college. Improvements in terms of providing industry guidelines are seen as important to avoid students from being given assignments or work scopes outside their field of study. This can lessen instances of graduates who have skills and work fields that do not match their work scope.

Therefore, it is necessary for vocational colleges to provide improvements in terms of guidelines. This can be in the form of job descriptions. Academic supervisors and industrial supervisors should also be prepared to inform them of their duties and responsibilities, especially in providing feedback, comments, knowledge and skills to industrial training students. These guidelines are provided to guide them about their duties and responsibilities, especially in providing feedback, comments, knowledge and skills to industrial training students.

*PPO A: To improve the effectiveness of OJT in vocational college programs, in my opinion, among the improvements that can be made is the college can work together with the student or the program to produce a comprehensive document that can become a guideline to the industry in terms of the curriculum content that has been completed by the student throughout their study in the college. This is to identify the skills and knowledge that the students have so the industry is more aware in setting suitable tasks for the students during the OJT.*

The skill gap between vocational college students also needs to be paid attention. Where there is a need to first explain why and how, then support these with task excerpts. According to Industry Supervisor A, the skills brought by Vocational College A and Vocational College B students who conduct OTJ are different.

*PO A: To me, the knowledge of students is different. For the KV A student, the student's knowledge seems good but work-wise, to execute a task like setting up a machine, checking equipment, I had to tell them multiple times. They need to be told multiple times, examine it like this, like this. For the KV B student, once or twice and the KV B student already understands, they can do their own work. If with a machine, the KV B student is more adept. When using a machine, they are more adept, just tell them how and they get straight to work.*

This matter should be addressed to ensure that vocational college graduates are of high quality in meeting Malaysia's goals in providing a skilled workforce according to the target field. Technical skills or hard skills are often associated with the use of tools, using equipment related to work correctly and efficiently, as well as all technical matters. Therefore, the equipment and machines available in

vocational colleges also need to be increased in terms of quantity and technology. In addition, the authorities of Vocational Technical Education and Training Division (BPLTV) should study the gap in equipment and machines, and ensure they are parallel to give students the opportunity to obtain the same knowledge and skills. In general, during the years that vocational colleges have been operating, the equipment gap between vocational colleges and the industry is very wide. This causes students to need up to three or four months to master a machine.

*PO: The six months OJT period is highly suitable because in order to learn the CNC machine, there are those who learn it fast and some are slower. In four months, at least, they can already learn all this. What is foundational, we can teach and they can do, at least they can already execute the tasks well.*

This situation will harm students if they cannot diversify the skills that they acquire in the industry. Indirectly, this situation causes the government's objective in empowering the TVET field to be futile and unable to achieve the original goal.

#### **4. Discussion**

In general, the implementation of OJT in Vocational Colleges has its own Guidelines, which have been printed and distributed to vocational colleges under the supervision of the Ministry of Education. The student OJT process is managed by the Industrial Training Unit (KUPLI) of each college with the help of the program lecturers involved. However, there are some challenges in some of the issues identified in this study faced by students, OJT supervisor lecturers and organizational supervisors. Among them are the challenges of students before and during OJT, the challenges of PPOs in the implementation of OJT, as well as the challenges of POs in the implementation of OJT. The challenges faced by them in this study are seen to have a negative impact, which contributes to a skill mismatch in skilled workers especially. This can then influence the motivation of students. In addition, this matter is also seen to contribute to the industry's negative response to students, in regard to attitude and discipline.

Therefore, some improvements need to be made to guarantee the production of quality graduates. Improvements in terms of creating a centralized data system to help students is a good suggestion to improve the quality of student placement management, in addition to being able to help students in finding OJT places. In addition, efforts to reduce the skill gap between students as well as the technology gap between industries also need to be resolved. Norisham (2014) also believes that the relationship between TVET educational institutions and the industry also needs to be improved to avoid a large gap between them, so that career mismatches do not occur. This is very meaningful in improving the implementation of the OJT of vocational colleges which are the main leaders of TVET. According to Md Nasir, Ali, Noordin, and Nordin (2011), technical skills or hard skills are often associated with the use of tools, using equipment related to work correctly and efficiently, as well as technical matters. Through these improvements, it is hoped that this transformation of TVET will continue to be successful and will achieve the agenda that has been drawn up by the country.

## 5. Conclusion

Overall, the implementation process of OJT is the main factor that contributes to the issue of suitability for student training. This is because the absence of a data system that stores industry information which is suitable for students causes them to get training places that are not suitable for their field of study, resulting in students wasting time finding new training places. Factors that form challenges throughout the OJT journey consist of issues that need to be paid attention to, because each has implications that affect the implementation of the OJT itself. Therefore, suggestions and views on the issues that arise in the implementation of OJT such as providing a system to store the data of industries that offer OJT places are necessary to avoid the placement of students outside the skill area, which can be detrimental.

In addition, another critical issue that needs to be overcome is the skill gap between the vocational college students as well as the provision of sufficient and equal machines and equipment for each vocational college. This is critical when the supply of equipment and machines in each college is different. Ministry Of Education (KPM), especially BPLTV, should be able to pay attention to some critical issues obtained in this study, especially the good relationship between institutions and the industry. Cooperation programs between industry and TVET institutions should be further intensified, so that TVET institutions can produce graduates who can meet the needs and requirements of the industry in providing a skilled workforce. These collaborative programs not only benefit TVET institutions and the industry, but also impact future students in the country to address graduate unemployment, thus leading the provision of critical national skilled manpower.

## Acknowledgement

This paper was part of a research project entitled "A framework to facilitate and sustain the win-win partnership between industries and training centres" and it was funded by the 2018 Malaysian Ministry of Higher Education Fundamental Research Grant Scheme. (FRGS/1/2018/SSI09/UPSI/02/20).

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