



The Comparison of the Partnership Model Between Vocational Education Institutions and Industrial Sectors in North American and Indonesian Universities

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Abstract. The mismatch between the skills offered by the vocational education institution and the needs of the industry leads to the high unemployment in Indonesian. It contradicts with the initial aim of the vocational education which is to decrease the number of the unemployment in Indonesia. One of the solutions to overcome the problem is by having partnership between vocational education institutions. Therefore, this paper aims to compare the model of partnership with industry in USA University and Indonesian universities. 20 respondents were involved in this study and thematic analysis was used to analyse the data. The results showed that main differences of the partnership model are: 1) in identifying the skill demands, USA universities focused on the feedback of the curriculum. While, the Indonesian universities analysed the skill of the graduates, 2) in supporting the development, Indonesian universities preferred a partner which could develop their infrastructure. While, the USA universities chose a partner which could build their capacity, 3) a company which could employ many workers in Indonesia. While, a company which could affect the image of the university is more preferable in USA.

Keywords: Partnership model · vocational institution · Industrial sector

1 Introduction

The overall number of unemployment in Indonesia was 7.02 billion in the first quarter of 2016. The vocational school graduate contributes 19.20% of the overall figure above. This figure is the second highest contributor of the overall number of unemployment in Indonesia. It contradicts with the initial aim of the vocational education which is to decrease the number of the unemployment in Indonesia. One of the main problems of this high unemployment is the mismatch between the skills offered by the vocational education institution and the needs of the industry [1–3]. This mismatch occurs because the curriculum in which the skills are taught is irrelevant to the needs of the industry. Industrial sector has very little involvement in the formulation of the vocational education institution curriculum.

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Many efforts have been conducted to overcome this problem. One of them is government endowing private sector to provide temporary employment and training contract for the youths in Italy, France, and Spain [4]. However, the value of this action remains dubious as elucidated by Felgueroso [5] in Spain, Roger and Zamora [6] in France, and Tattara and Valentini [7] in Italy. The performance – based incentive by the government to VET school based on the MANFORME reform in Tunisia has also failed to the quality of VET graduates [8, 9]. In order to bridge the gap between the skills and curriculum of vocational education and the labor market, the partnership between vocational education institutions and industrial sectors must be conducted. The partnership between vocational education institutions and industrial sectors is able to increase the school performance to meet the expected outcome which is to produce graduates with the skills matched with the needs of the industrial sector. The dual system in Germany which has strong linkage between vocational education institution and industry is able to decrease the rate of unemployment from 11,2% in 2009 to 7,5% in 2013 [10]. Therefore, the partnership between vocational education institution and industry plays an important role in developing the vocational education.

The partnership between vocational education and industry can be directed to develop resources of the vocational education institution [11]. Facility – sharing program to equip the lack of laboratory equipment in vocational education institution can also be conducted when there is a partnership between vocational education institution and industry [12]. Heckman [13] argues for the benefits of having industry – based training to solve the general problems of school – based training systems. Those papers have discussed about the importance of the partnership between vocational education institution and industry. However, only very few paper compares the model of partnership between vocational education institution and industry across nation. Therefore, this paper was aimed to compare the model of partnership between vocational education institution and industry in United States of America and Indonesia.

2 Method

Qualitative approach was employed in this study to describe the comparison of the partnership model between vocational education institution and industry in United States of America and Indonesia. The respondents were purposively sampled. The criteria which must be met to become the samples of this study were a) having the teaching experience minimum 5 years, b) having a prior experience of initiating collaborating with industrial sectors, and c) minimum functional position of assistant professor. The result of the purposive sampling process were 20 lecturers from Indonesia and USA involved in this study.

The interview questions were divided into three rounds. The first round of interview questions focused on gathering the data about partnership approach to industrial sector. The second round emphasized on gaining the data about the implementation of partnership between vocational education institution and Industry. The last one focused on the evaluation of the ongoing partnership with industry. Both close ended and open ended questions were used in this study.

The respondents were interviewed via Skype using the semi – structured interview. The interview process was recorded audio visually by a researcher. Other researchers

Table 1. The description of the respondents

The number of correspondents	Unit of work	Experience	Position
1	A department	10 years	Associate Professor
2	A department	6 years	Associate Professor
3	A department	11 years	Associate Professor
4	A department	7 years	Assistant Professor
5	A department	8 years	Assistant Professor
6	A department	6 years	Associate Professor
7	A department	11 years	Associate Professor
8	A department	10 years	Assistant Professor
9	A department	7 years	Assistant Professor
10	A department	8 years	Associate Professor
11	A department	8 years	Associate Professor
12	A department	5 years	Associate Professor
13	A department	6 years	Associate Professor
14	A department	9 years	Associate Professor
15	A department	10 years	Assistant Professor
16	A department	5 years	Assistant Professor
17	A department	12 years	Associate Professor
18	A department	7 years	Associate Professor
19	A department	8 years	Assistant Professor
20	A department	9 years	Assistant Professor

observed the process and took notes of the interview process. After the interview process, the audio visual data were then transcribed. The transcription was then read through by the three researchers before the coding process. The unit of analysis was phrases or chunks. The naturally emerging code were highlighted from the phrases on the transcription. This process was conducted by the three researchers. The naturally “grounded” coded were then grouped into themes. The themes were then categorized into “basic theme, organizing theme, and the global theme” to form a thematic network [14]. Consistency of coding or categorization was checked using the inter-coder agreement by comparing the basic themes, organizing themes, and the global themes of the three researchers. The agreed basic themes, organizing themes, and the global themes were presented as the results of the study (Table 1).

3 Results and Discussion

Table 2 shows the themes emerging from transcription of the interview with the respondents.

Table 2. The themes of the respondents' responses

No	Global theme	Organizing themes	Basic themes
1	The partnership approach to industry	The objectives of collaborating with an enterprise	Identification of the company's skill demands
		The considerations of choosing a partner	The compatibility of the curriculum and the company's skill demands
2	The implementation of Partnership between vocational education institution and Industry		The role of the partner from the industry
		a good public track record	
3	The evaluation of the ongoing partnership with industry	The functions of partnership evaluation	the company could provide relevant industrial experience for our students
			having skills or competencies that complement those of my institution
2	The implementation of Partnership between vocational education institution and Industry	The role of the partner from the industry	Providing an internship program
			Providing skilled trainer
3	The evaluation of the ongoing partnership with industry	The functions of partnership evaluation	Providing training or capacity building
			reflecting on the value of the ongoing partnership with my institutions
3	The evaluation of the ongoing partnership with industry	The functions of partnership evaluation	Identification of challenges during the implementation
			evaluating any changes that would improve the effectiveness of the partnership

3.1 The Comparison of Partnership Model of the North American University and Indonesian University

The transcribed responses from respondents from the North American university were used to generate the partnership model between their institution and the industrial sector. Based on the analysis, these themes emerged from the data. Table 3 summarizes the comparison of partnership model of the North American and Indonesian universities.

The detailed description about Table 3 could be seen in the following passage.

3.1.1 The Partnership Approach to Industrial Sector

Having partnership with industrial sector is very crucial for both North American university and Indonesian universities. However, the university must have a calculated steps

Table 3. The comparison of the partnership model of North American and Indonesian universities

No	The objectives of collaborating with an enterprise			
	Basic themes	Sub themes	Indonesian Universities	North American Universities
1	Identification of the company's skill demands	feedback for their curriculum	-	V
		analysis graduate skill	V	-
2	The compatibility of the curriculum and the company's skill demands	check the relevancy of the curricula	V	V
		input to develop the curriculum	V	V
3	Supporting the development of the faculty	Infrastructure development	V	-
		Capacity building for the students	-	V
The considerations of choosing a partner				
4	a good public track record	employing many workforces	V	- V
		affecting the image of the university	-	
5	the company could provide relevant industrial experience for our students	Unable to provide real – world experience	V	-
6	having skills or competencies that complement those of my institution	Complement the classroom knowledge	V	V
The role of the partner from the industry				
7	Providing an internship program	lack of up-to-date training equipment	V	-
		Providing the authentic experience	-	V
8	Providing skilled practitioners	Inviting the skilled practitioners in a workshop	V	-

(continued)

Table 3. (continued)

No	The objectives of collaborating with an enterprise			
	Basic themes	Sub themes	Indonesian Universities	North American Universities
9	Providing training or capacity building	Complementing theoretical knowledge for the lecturers	V	V
		Complementing theoretical knowledge for the students	V	V
The functions of partnership evaluation				
10	reflecting on the value of the ongoing partnership with my institutions	Obtaining mutual relationship	V	V
		Figuring out each party's value in partnership	-	V
11	Identification of challenges during the implementation	Knowing the problems during the partnership	V	V
12	evaluating any changes that would improve the effectiveness of the partnership	Keeping up with the fast progress	V	V
		Changes to achieve mutual benefit of the partnership	-	V

of approaching the industry to have a collaboration with. The objectives of the partnership were formulated first before partnership with the industry was initiated. Moreover, specific considerations in choosing a specific partner from the industry.

3.1.1.1 The Objectives of the Partnership

The objectives of having partnership with industrial sectors for the North American university and Indonesian university are as follows.

- 1) Identification the skill demands of a certain company,
Both North American and Indonesian universities had things in common about the first objective of the partnership. The respondents from both universities wanted to collaborate with an enterprise to identify the skill demands. However, both differed from how they would utilize the results of the identification. The respondent from the North American university argued that his university utilized the results of this identification as the feedback for their curriculum. Meanwhile, the respondents from

the Indonesian universities explained that the results would be used to analyse which graduates fit the skill demands to shorten their waiting period after graduation.

Below the excerpt from the North American university's respondent:

I wanted my department to collaborate with an enterprise to know what sorts of skills that the enterprise requires their employees to have. This information is very valuable feedback for department's curriculum. We can complement our curriculum using this feedback from the enterprise.

The following is the excerpt from the Indonesian universities' respondent:

From the partnership, I could figure out what kind of employees that the company preferred and the skills that the employees must have. Then, I could gather my graduates to select which one matched with the requirements. I would then encourage them to apply at the company so that they didn't have to wait for a long time after graduation.

- 2) identification the compatibility of my institution's curriculum and the industry's skill demands,

Both countries agreed that having a partnership with an enterprise meant that their departments could figure out how compatible their curricula with the market. After identifying the skill demands from the company, respondents from both countries explained that the result of the identification would be used to check the relevancy of their curricula. The result of the skills identification would be treated as an input to transform their curricula.

Below is the excerpt from the North American university's respondents:

The results of the skill identification would be treated as feedback for my department's curriculum. If some skills are absent from the curriculum, I would add them from the results of the skill identification. We need this so that our curriculum can stay relevant with the industry.

This following excerpt illustrated how the results of the identification were treated as an input to develop the Indonesian universities' curriculum.

Developing our department's curriculum requires an input from the industry. Because our graduates would work in the industry. If we don't have the curriculum which is responsive to the needs of the industry, our graduates would be left behind and can't get a job.

- 3) Supporting the development of the department.

The partnership with the industry could result in the support for the development of the department. The support can be in the form of capacity building such as providing training for the teacher, providing various infrastructure required for the learning process (laboratory equipment), providing research grant, internship program for the students, and etc. the Indonesian universities preferred the support in form of the infrastructure which support the learning process such as laboratory equipment. On the other hand, the North American university preferred the support in the form of the capacity building such as providing internship program for the students, research grant for the faculty members, and the training for the students.

The following response was taken from the Indonesian universities' respondent.

We would have a partnership with a company which could provide assistance for us such as laboratory equipment. Because we know that there is a gap between

our laboratory equipment with the one the company used in the production process. This condition hinders the competency of our students.

The following response was taken from the North American universities' respondent

Capacity building is the core of workforce development department. Therefore, we preferred a company which could provide intensive internship program for our students. So that, they could experience what's like working in the industry and the theory they got at the class.

3.1.1.2 The Considerations of Choosing a Partner

Both Indonesian and North American universities have the following considerations before choosing to have partnership with industrial sector:

- 1) the company has a public good track record,
A good track record for the company is a compulsory requirement for the partnership. Both universities preferred a company with a good track record in public because good public image is parallel with its ability to perform well including employing many workforces and to affect the image of the university.

The following response was taken from the Indonesian universities' respondent.

If we had several choices of companies to collaborate with. We would choose the big company because big companies usually hire more employees than the smaller ones. We need our students to work after they graduate. By having the partnership, we hope that the company could consider hiring more student from our institution.

The following response was taken from the North American universities' respondent.

Big companies usually have good public image. People put more trust to such companies and so do we. We believe that partnering with big companies also increases the image of our institution.

- 2) the company could provide relevant industrial experience for our students,
- 3) the company has skills or competencies that complement those of my institution
Relevant industrial experience could equip students with more complete competencies. Many vocational education institutions could not provide real – world industrial experience and the students also must have real world experience to complement their knowledge. Therefore, partnering with companies is expected to provide the students with the relevant industrial experience.

The following is the excerpt from the Indonesian universities' respondent.

Most of Indonesian universities cannot provide real experience during their teaching process. The students don't have any idea about the condition in the field. Therefore, we need to have the internship program in the company so that they could experience working in a company and get the necessary ability from the internship.

The excerpt from the North American universities' respondent can be seen as follows.

Although our curriculum has been made as close as possible with the demands of the industry, real world experience in industry is still necessary for our students to complement what they've got in the class.

3.1.2 The Implementation of Partnership Between Vocational Education Institution and Industry

The roles of the partner from the industry sector during the implementation of the partnership are as follows:

- 1) Providing an internship program for their students,
Valuable industrial experience could only be given through the internship program. Laboratory work in the vocational education institution could only resemble of working using industrial equipment. Moreover, Indonesian vocational education institutions lack of up-to-date training equipment. Therefore, the authentic experience must come from the internship program.

The following excerpt from the Indonesian universities' respondent illustrates the statement above.

Our lab's equipment is not as complete as the one in industry. There are new equipment that we don't have. We rely on the internship program so that our students could operate the equipment well.

The following excerpt is taken from the North American universities' respondent.

The lack of the equipment is not an issue anymore. However, the authenticity of working in the plant just could not be duplicated in the lab even the complete one. So, we must send the students to the internship program provided by our partner in the industry.

- 2) Providing skilled industrial practitioners
- 3) Providing training or capacity building from practitioners or skilled human resources for their students,

Industrial practitioners are essential in developing the students' vocational competency. The source of industrial practitioners is the partnership program. The lecturers also must know about the industrial knowledge from the practitioners. Industrial practitioners rarely come to the vocational educational institution if they do not have the partnership with the university.

The following excerpt is taken from the Indonesian universities' respondent.

Theoretical portion of the teaching process could be provided by the lecturers in my institution. The practical skills could only be replicated from the industry. We need practitioners from industry to teach our students the practical skills to equip their theoretical knowledge. If the partnership can't be initiated, workshop which invited the skilled industrial practitioners would be conducted

The following excerpt is taken from the North American universities' respondent

Our practical knowledge of how the industry works is not as complete as the practitioners from our partner in the industry. Our students must be taught by not only us but also the practitioners. They are the ones who know how a factory is operated.

3.1.3 The Evaluation of the Ongoing Partnership with Industry

When the partnership has been arranged with the industrial sectors, the evaluation and monitoring are conducted by the representative of the North American universities. The evaluation was conducted for these following reasons:

- 1) to offer an opportunity for my partners to reflect on the value of the ongoing partnership with my institutions,
 - 2) to identify challenges during the implementation of the partnership
- Partnership often brings positive changes for both the vocational education institutions and the company. However, during the process, many things could hinder the positive achievement of the partnership. Constructive evaluation is required to overcome partnership obstacles to achieve the mutual objective of the partnership.

The following excerpt is taken from the Indonesian universities' respondent.

We don't want to be a burden for our partner. What we want during the partnership initiation is the win – win partnership. So, evaluation meeting is necessary to talk about problems in our partnership and to solve them together.

The following excerpt is taken from the North American universities' respondent.

What we mean to our partner and what our partner means to us during implementation of the partnership is something that we must reflect on. So, evaluation is necessary to be conducted. It often helps to identify challenges during the partnership implementation.

- 3) to evaluate changes which would improve the effectiveness of the partnership,
- Changes are important aspects to achieve the healthy relationship with the industrial sector. Moreover, companies are often on the fast – paced track. The institution must keep up with the partnering company. The evaluation also brings changes which results in the achievement of mutual benefits.

The following excerpt is taken from the Indonesian universities' respondent.

We want to change not to be left behind by the fast progress of the industry. So, we must discuss about the necessary change in our partnership with the company.

The following excerpt is taken from the North American universities' respondent.

If changes must be made to achieve the mutual objective of the partnership, then we need to sit together to discuss what we should improve. Because the progress in the educational institution is often not as fast as the one on the industry.

All of the participating vocational education institutions agreed that the partnership between vocational education institution and industry is crucial to achieve the goal of the institutions. The partnership could provide the following benefits for vocational education institutions such as 1) to identify the specific skill needs of the company, 2) to identify the compatibility of the vocational education institution's curriculum and the industry's skill demands, and 3) to provide research grant for the vocational education institution's lecturers. The partnership with the industry is useful to understand the requirements of the industry [15] and could produce the graduates with the skills compatible with the requirements of the industry [16–18]. These findings are relevant to the previous researches about the partnership between industry and vocational education which explore the collaborative formulation of curriculum development [19–22]. Furthermore, the partnership could result in the feasible implementation of career – specific curriculum [22].

4 Conclusion

The results of the study about the comparison of partnership model can be concluded as follows.

1. Three global themes were identified from the data: 1) the partnership approach to industry, 2) the implementation of partnership between vocational education institution and industry, and 3) the evaluation of the ongoing partnership with industry.
2. The global themes were divided into organizing themes as follows. The partnership approach consisted of 1) the objectives of collaborating with an enterprise, 2) the consideration of choosing a partner, 3) the considerations of choosing the partner. The implementation of partnership between vocational education institution and industry consisted of the role of the partner from the industry, the organizing theme of the evaluation of the ongoing partnership was the functions of partnership evaluation.
3. The organizing themes also consist of basic themes. The objectives of collaborating with an enterprise consisted of 1) identification of the company's skill demands, 2) the compatibility of the curriculum and the company's skill demands, 3) supporting the development of the faculty. The considerations of choosing a partner consisted of 1) a good public track record, 2) the company could provide relevant industrial experience for our students, 3) having skills or competencies that complement those of my institution. The role of the partner from the industry consisted of 1) providing an internship program, 2) providing skilled trainer, and 3) providing capacity building. The function of the partnership consisted of 1) reflecting on the value of the ongoing partnership, 2) identifying challenges during the partnership, 3) evaluating any changes during partnership.
4. The main differences of the partnership model are: 1) in identifying the skill demands, USA universities focused on the feedback of the curriculum. While, the Indonesian universities analysed the skill of the graduates, 2) in supporting the development, Indonesian universities preferred a partner which could develop their infrastructure. While, the USA universities chose a partner which could build their capacity, 3) a company which could employ many workers in Indonesia. While, a company which could affect the image of the university is more preferable in USA.

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