VOCATIONAL EXCELLENCE AS A VOCATIONAL EDUCATION DEVELOPMENT STRATEGY IN INDONESIA: CASE STUDY OF MEDAL ACHIEVEMENT IN THE 13TH ASEAN WORLD SKILL 2023 IN SINGAPORE

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Abstract

Vocational education plays an important role in preparing a high-quality and competent workforce to meet industry needs. This article analyzes the concept of "Vocational Excellence" as the main strategy in developing vocational education in Indonesia, using a case study of Medal Achievement in the 13th ASEAN World Skill in Singapore.

In this article, Vocational Excellence is used as a study material that plays a central role in improving the quality of vocational education in Indonesia using the SLR (Systematic Literature Review) approach. In addition, a multivariate statistical analysis of interdependence on the achievement of Medals in the 13th ASEAN World Skill was also carried out, as well as an exploratory analysis of the key factors that contributed to this success.

From the results of the study, it was found that the Vocational Education Development strategy as a reflection of the achievements of the 13th ASEAN World Skill included innovative learning strategies, curricula that are relevant to industry demands, the important role of mentors in guiding students, and close collaboration between vocational education institutions and the industrial sector. This case study also discusses the positive impact of Medal Achievement in strengthening the image of vocational education in Indonesia and motivating more students to pursue vocational education.

This article proposes strategic measures, including increased teaching staff training, adaptive curriculum development, and more collaboration opportunities with the industry sector, in order to improve the quality of vocational education in a sustainable manner.

Keywords: Vocational Excellence, vocational education, World Skill Asean, Systematic Literature Review.

1 INTRODUCTION

Vocational education has become an integral part of Indonesia's economic and social development. In an effort to improve the quality of vocational education, the concept of "Vocational Excellence" has emerged as a promising strategy. This article will explore the role of "Vocational Excellence" as an innovative approach that focuses on developing excellence in vocational education in Indonesia. In particular, this study will take as an example the case of winning medals at the 13th ASEAN World Skills held in Singapore in 2023.

Vocational education has a significant impact in preparing a quality workforce, which is urgently needed to meet the needs of the ever-changing job market. In this context, Vocational Excellence offers a more comprehensive framework for producing graduates who are ready to compete at national and international levels. This is becoming increasingly important because competition in the global market is getting tougher, and Indonesia is trying to increase its competitiveness.

Several individual characteristics needed to increase competitiveness include technical abilities, social skills, motivation and attitudes. Skills competitions can help in increasing student and teacher motivation, improve students' technical and social skills, and improve the image and attractiveness of vocational education and training. Apart from that, skills competitions can also help in building partnerships between educational and vocational training institutions with industry and society (Nokelainen: 2018)

The case of winning medals in the 13th World Skill Asean in Singapore is a special highlight in this article. The success of the participants in this competition is an indication of the potential and competence that has been embedded in the vocational education system in Indonesia. By examining their journeys and the factors that contributed to their achievements, this article will help provide deeper insight into how Vocational Excellence can be key in developing better vocational education in Indonesia and what areas of expertise are most in demand in vocational education in several ASEAN countries.

2 METHODOLOGY

This research uses exploratory research methods (Cresswell: 2015), where with this method there will be two research stages, namely the first stage is qualitative and the second stage is a quantitative approach.

2.1 Qualitatif Approach with Systematic Literatur Review

The first stage is to conduct a literature search using the SLR method. From searching this library with the keyword filter: Vocational excellence and Vocational education, 636 article sources were obtained. Then a filter was carried out based on year with a range of 2019-2023, resulting in 205 article sources. Then, by using the "development strategy" filter and the criteria mentioned by Wahono (2015), namely the PICOC criteria (Population, Intervention, Comparison, Outcomes and Context), 9 article sources were obtained.

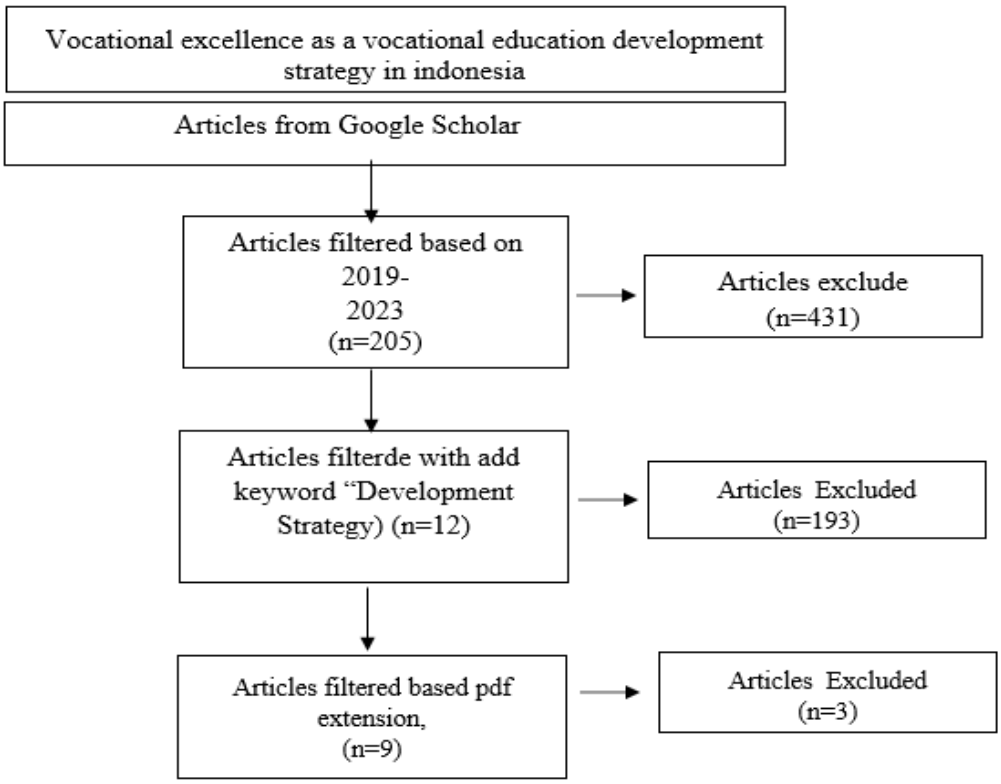

Figure 1. Literatur Review Process

The literature obtained from the SLR process is then carried out Quality Assurance (QA) based on the problem themes to be discussed, namely: what types of skills are needed to improve Vocational Excellence in vocational education; Areas of expertise needed to increase the excellence of vocational education; strategies used in developing Vocational excellence; and forms of real contribution from various policy stakeholders in improving skills in vocational education in Indonesia.

2.2 Quantitative Approach with Individual Based - Conjoint Analysis

The second part of exploratory design research is a quantitative approach. The quantitative approach used is the conjoint analysis technique which is part of multivariate interdependent. The conjoint analysis used uses the individual based analysis (IBA) method, namely a conjoint analysis technique that does not use the respondent's perception database as input in making the Plan Card. The IBA in the conjoint analysis this time is data on achievement medals in the 13th ASEAN World Skills 2023 in Singapore. This data consists of 89 raw medal data records. This data is then coded using the rules for creating dummy variables in multiple linear regression. This dummy coding data was then regressed on the assessment scores at the 13th

ASEAN World Skills 2023 in Singapore (WSASEAN 13th :2023). The following are the attributes and levels and coding in the data to be analyzed.

Table 1. Atribute and Level

1 = Tourism	dummy	3 = ITC	dummy
		IT Network Systems	
Cooking	1000	Administration	10000000
Restaurant Service	0100	Information Network Cabling	01000000
Hairdressing	0010	Web Technologies	00100000
Beauty Therapy	0001	IT Software Solutions for Business	00010000
Fashion Technology	0000	Internet of Things	00001000
2 = Eng & Tech		Graphic Design Technology	00000100
Refrigeration & Air-Conditioning	1000000	Automobile Technology	00000010
CNC Maintenance	0100000	Industrial Control	00000001
Industrial Automation	0010000	Rapid Transit Systems	00000000
Electrical Instalation	0001000		
Mobile Robotics	0000100		
Electronics	0000010		
Mechanical Engineering CAD	0000001		
Mechatronics	0000000		

In conjoint analysis, it is known that variables are divided based on attributes and levels to determine the level of importance of each. Based on the table above, it can be seen that there are three attributes as areas of expertise being contested, where each attribute is Tourism consisting of five (5) levels, Engineering and Technology consisting of 8 (eight) levels, and Information and Communication Technology (ICT) consisting of 9 (Nine levels).

3 FINDINGS AND DISCUSSION

The discussion in this research will be explained based on the stages as explained in the research method in point 2 above. The following is the explanation:

3.1 Medal Gain Distribution of Worldskill Competition ASEAN 13th Singapore.

The medals obtained at the 13th World Skill Competition in Singapore can be seen in table 2 below:

Table 2. Distribution of Medal in WSASEAN 13th 2023

Country	ITC					Eng & Tech					Tourism					Total
	[1]	[2]	[3]	[4]	Σ	[1]	[2]	[3]	[4]	Σ	[1]	[2]	[3]	[4]	Σ	
Indonesia	5	4	1	2	12	7	3			10	2	1	1	1	5	27
Singapore	4	2	3	4	13	2		4	1	7	2	2	1	1	6	26
Malaysia		1	1	3	5	1	1	1		3	1	1	3	2	7	15
Thailand				1	1		1	2	5	8		1	2	2	5	14
Philippines		1			1				1	1				1	1	3
Brunei Darussalam														1	1	1
Laos														1	1	1
Myanmar									1	1						1
Vietnam			1		1											1

[1]= Gold; [2]=Silver; [3]=Bronze; [4]=Medal of Excellence

From the table above, it can be seen that the highest distribution of medals is in the ITC field, then Engineering and Technology and the lowest distribution is in the Tourism field. From the table above it can also be seen that Indonesia came out with the highest ranking in achieving all the medals in WSASEAN 2023, ahead of all other Asean countries. Except in the tourism sector, Indonesia is still behind Singapore in winning medals. The distribution of medals can reflect the areas of expertise that are of interest to a specific type of competition (see levels in table 1 Attribute and Level).

3.2 The Preference Levels of Atribute and Level on WSASEAN 13th Singapore.

The level of importance of attributes (area of expertise) and level (type of skill being competed) in the 13th WSASEAN were analyzed using Conjoint Analysis using an individual based analysis approach. The following are the results of the Conjoint analysis:

Table 3. IBA - Conjoint Analysis Result

Atribute	Level		Preference	
	Description	Utility Score	Score	Weight
Tourism	Cooking	5.29	20.39	14.76%
	Restaurant Service	20.43		
	Hairdressing	25.03		
	Beauty Therapy	***25.68***		
	Fashion Technology	19.93		
Technical Engineering	Refrigeration & Air-Conditioning	7.23	29.33	21.24%
	CNC Maintenance	-6.57		
	Industrial Automation	13.43		
	Electrical Instalation	0.00		
	Mobile Robotics	2.43		
	Electronics	21.68		
	Mechanical Engineering CAD	18.63		
	Mechatronics	***22.76***		
Information, and Communication Technology	IT Network Systems Administration	24.93	88.40	64.00%
	Information Network Cabling	33.43		
	Web Technologies	***90.83***		
	IT Software Solutions for Business	8.43		
	Internet of Things	2.43		
	Graphic Design Technology	22.93		
	Automobile Technology	9.63		
	Industrial Control	13.43		
	Rapid Transit Systems	3.43		

Source: WSASEAN 13th

From table 3 above, it can be seen that based on the medal results at the 13th WSASEAN in Singapore, of the three fields of expertise, the ICT field has a preference weight of 64%, then Tech and Engineering expertise has a weight of 21.24% and Tourism has the smallest weight, namely 14 .76%. The results of this weight are inline with table 1 of the medal distribution, where in table 1 of the medal distribution this explicitly provides information on the distribution of medals obtained or contested by contestants in the same order, namely ICT, Tech and Engineering and Tourism.

In the ICT field, there is a type of competition with the highest utility score level, namely "Web Technologies", while the highest utility score in the Tech & Engineering field is Mechatronics,

and in the Tourism field, the one with the highest utility score is Beauty Therapy. This highest score level indicates the level of importance of the level compared to other levels, both in terms of medals and competition participants. This shows a side of interest that is based on skills competency which is becoming a trend and focus in the ASEAN region, especially on countries where these countries have won medals or are able to compete with others.

Based on these results, all stake holders need to carry out various follow-up actions related to skills development, much closer collaboration with sectors or fields with high interest and are able to compete in the ASEAN region as well as improving fields that are still not talked about much at the international level in in order to increase the leverage of the national economy.

This is in accordance with what Nokelain, et.all (2018) stated in his research which states that skills competitions can help increase student and teacher motivation, improve students' technical and social skills, as well as improve the image and attractiveness of vocational education and training. Apart from that, skills competitions can also help in building partnerships between educational and vocational training institutions with industry and society, as well as several examples of skills competition programs that have been successfully implemented in several countries.

However, it should be remembered that there are still several skills gaps identified through several studies, including a study conducted by Shamzzuzoha, e t.all (2022) which states that in Finland there are still skills gaps in green innovation Vocational education, namely: 1. Required technical skills to apply green innovations, such as skills in renewable energy technology, waste management, and water treatment technology. 2. Project management and leadership skills required to manage green innovation projects. 3. Skills in data analysis and decision making required to measure the environmental impact of green innovations. 4. Skills in communicating and collaborating with various parties, such as government, society and companies, to encourage the adoption of green innovation. 5. Skills in understanding and implementing environmental regulations and policies applicable in the region.

4 CONCLUSION

The conclusion that can be drawn from the explanation above is that improving the quality of vocational education in Indonesia is very important. The ASEAN World Skill 2023 (WSASEAN 13th) case study in Singapore shows that Indonesia has achieved significant

improvements in terms of vocational student achievement and competency, especially in the fields with the most dominant level of achievement, namely the ICT field with the Web Technologies competition type, the Tech & Engineering field with the type Mechatronics competition and finally the Tourism sector with the Beauty Therapy competition. The achievement of medals by Indonesian participants in the competition shows that vocational education in Indonesia has great potential to prepare a competent and skilled workforce. This success should be an inspiration for the government and vocational education institutions in Indonesia to continue to improve the quality of vocational education, integrate the latest technology, and promote collaboration between industry and educational institutions to ensure that vocational graduates are ready to compete in the global job market.

In addition, all vocational education stakeholders must invest in vocational training that is relevant to the demands of the job market, which is responded to with a high level of preference in the field of expertise competitions in vocational education. Quality vocational education that is oriented to industry needs will help overcome the gap between the skills possessed by graduates and what is needed by industry. Therefore, the government needs to continue to encourage cooperation between vocational education institutions, industry and other stakeholders. Overall, the results of this research provide an overview of the great potential of vocational education in Indonesia and underscore the key role of commitment, investment and collaboration in advancing this education sector to support economic development and improve the quality of Indonesia's human resources.

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