Research Article doi: 10.12973/eu-jer.9.3.955

European Journal of Educational Research
Volume 9, Issue 3, 955 - 966.
ISSN: 2165-8714
http://www.eu-jer.com/

Development and Validation of an Instrument to Measure a Performance of Vocational High School

Nur Kholis*
Yogyakarta State University, INDONESIA

Badrun Kartowagiran
Yogyakarta State University, INDONESIA

Djemari Mardapi
Yogyakarta State University, INDONESIA

Received: : January 8, 2020 ▪ Revised: April 3, 2020 ▪ Accepted: May 11, 2020

Abstract: Some evaluation has been carried out in Vocational High Schools (VHSs), but most of it focuses on the documents or passive data rather than the processes happening in VHSs. Thus, this research focuses on the evaluation of VHS performances where the process is initiated with identifying the constructs and developing the instruments of performance evaluation for VHSs with Technology and Engineering expertise programs. Based on the problems found in the field, before conducting the evaluation, the researcher needs to, at first, develop the instrument of evaluation through three stages of development. The first stage is analyzing the concepts related to the evaluation by examining the factors affecting VHS performances. In the second stage, instrument development and instrument analysis (content validation) are conducted with the help of experts. The third stage is performance evaluation in VHSs located in Yogyakarta. The evaluation employs a set of instruments developed by the researchers. This research has produced a set of instruments for performance evaluation, which can be used extensively in VHSs. Based on the evaluation, it is found that the aspects of general management and academic management of the VHSs being studied are considered "Good".

Keywords: *Evaluation, school performance, vocational high school.*

To cite this article: Kholis, N., Kartowagiran, B., & Mardapi, D. (2020). Development and validation of an instrument to measure a performance of vocational high school. *European Journal of Educational Research, 9*(3), 955-966. https://doi.org/10.12973/eu-jer.9.3.955

Introduction

In various situations and conditions, education is an important part of human life (Panina et al, 2019; Sirajudeen & Sulaiman, 2020; Suryavanshi, 2012). Generally, the cognitive aspect of human being will be better along with the high quality of education taken, although there has been some that are contradictory. In the broader scope, education plays a specific role in the life of a nation and country. The quality of a country is influenced by the education quality (Akareem & Hossain, 2016; Madani, 2019).

The Indonesian government has recognized the importance of education. From time to time, they try to improve the quality of education. It is represented in the issuance of various forms of regulations and legislation compiled by the executives and legislature. The legislation on education, which currently becomes the basis of implementing education programs is the Act No. 20 Year 2003 on National Education System (State Secretary of the Republic of Indonesia [SSRI], 2016b).

Vocational education currently becomes the focus of many people and institutions (Triyono & Moses, 2019). The government has enacted the policies to empower the vocational education by formulating the 2005-2025 long-term development plan which includes the Senior High School and Vocational High School students' ratio amendment, from 70:30 to 30:70. Moreover, there is an issuance of Presidential Instruction No. 9 Year 2016 on VHS Revitalization to improve the Indonesian human resource quality and competitiveness (SSRI, 2016a).

To be able to see the extent to which VHSs have carried out their duties and functions, evaluation is needed to be conducted. This evaluation is a necessity to see whether the current condition and actual performance of the schools, including the principals, teachers, educational staff, students, infrastructure, and facilities are in accordance with the regulations (Ramadhan et al., 2020; Retnawati et al., 2017). To obtain a good evaluation result, a set of good evaluation instruments is needed (Rossi et al., 2018).

* **Corresponding author:**
Nur Kholis, The Electrical Engineering Education Study Program, Faculty of Engineering, Yogyakarta State University, Indonesia.
✉ nurkholisnkh@uny.ac.id

© 2020 The Author(s). **Open Access** - This article is under the CC BY license (https://creativecommons.org/licenses/by/4.0/).

An instrument is a tool that can measure an object in which the results are close to the real condition of the object. To obtain a good instrument, the factors influencing school performance need to be comprehensively analyzed (Ramadhan, Nasran et al., 2019; Ramadhan, Sumiharsono et al., 2019). Thus, the principles of a good instrument should be taken into account in the development process.

Based on surveys conducted in two qualified VHSs, school performance was evaluated through some aspects, namely the accreditation of the study program/expertise program, principal's work performance, and certified teacher's work performance. The study program evaluation is conducted by National Board of Accreditation for Schools and Madrasah by focusing on some aspects as referred to in the eight standards of education which are stipulated in the Government Regulation of the Republic of Indonesia No. 32 Year 2013 on National Education Standards.

The evaluation of the school principal's work performance is carried out by the Local Government Office of Education by considering seven main tasks and functions of school principals. Likewise, the teacher's work performance evaluation is conducted by the same institution and is called post-certification evaluation for teachers. Based on information from the principals, this evaluation is conducted only in some selected regions in Indonesia.

None of the above evaluation focuses on the activity done by schools and institutions. From the information obtained in the initial survey using the evaluation instrument, it is found that the most evaluation that has been conducted tend to focus on passive data. It means that they focus only on document analysis rather than process documentation. It needed an evaluation instrument which captures the efforts performed by schools in realizing their vision and missions, particularly VHSs with Technology and Engineering program. VHS is a vocational institution having many practicums activities. So, the purposes of this research are;

- Identifying the constructs to design the performance evaluation instrument
- To Develop and find out the validity of the content instrument to measure a performance of vocational high school which is developed.
- Conducting performance evaluation in two VHSs in Yogyakarta using the developed instrument.

Literature Review

Vocational Education

The term vocational education is often referred to as technical and vocational education. For example, in Kuwait, that kind of education is called technical and vocational education. The term is not much different from that of in Indonesia. Generally, VHS is education emphasizing the acquisition of knowledge, skills, and attitudes (Al-Ali, 2016; Beilmann & Espenberg, 2016; Billett, 2011; Lillis & Hogan, 1983).

Vocational education in one of the developed countries, America, started to develop in the early 1900s, amidst the debate on vocational training in public education. The general consensus raised the importance of vocational training as an alternative to American academic tradition. However, there was a different point of view on certain designs and implementation of public vocational education. Two figures, Charles Prosser and John Dewey, argued that the formed consensus was on the contrary to the real condition of vocational education (Rojewski, 2009).

Vocational education prepares people to work in the fields of commerce and arts. In addition, education generates professional assistants in the fields of engineering, accounting, nursing, medicine, architecture, and law. The field of art is usually based on user requests and is non-academic, but it is related to certain trades or commerce (Wikipedia, 2016).

According to several experts above, it is indicated that vocational education may take place in secondary schools, post-secondary school, diploma program, and higher education. It may also be integrated into internship programs. In the levels of post-secondary school, vocational education is often provided by an institute of technology, polytechnic, or a university (Wikipedia, 2016).

Vocational High School Performance

The focus of this study is the evaluation of vocational high school performance. However, since the scope of research is too broad, this study is limited so that the implementation is more directed and in-depth. Based on the explanation above, this study focuses on the effectiveness of schools in organizing resources, namely time, place, and human resources in providing students with good education. The effectiveness is shown by school performance, which is assessed both quantitatively and qualitatively based on the objectives intended by a school as an organization (DeNisi, & Smith, 2014; Fallon et al., 2015).

Vocational high schools comprise of vocational education at the level of secondary education. As explained above, it prepares students to work in various engineering fields at the secondary level. When associated with the Indonesian National Qualification Framework for VHS, three-year VHS is worth level 2 and the four-year VHS is worth level 3. Those VHSs are under Directorate of Vocational Development of the Ministry of Education and Culture (Mardapi, 2017;

Ministry of Education and Culture, 2016). This study focuses on VHS performance evaluation and the effectiveness of VHSs in organizing resources. Thus, they can produce graduates who are ready to work in the business and industrial work.

If associated with a school or an institution, school performance evaluation is a set of measures for various activities and values applied in a school. The results of measurement are used as feedbacks that provide information on the individual achievement of society of academicians or groups within a school organization (Chouinard & Cousins, 2015; Coates, 2009; DeNisi, & Smith, 2014; Fallon et al., 2015). In line with the aim of conducting school performance evaluation, this study focuses on evaluating the school performance in preparing students to work in business and industrial fields.

Methodology

Research Goal

This study aims to evaluate Technology and Engineering VHSs performances, which starts by developing instruments of evaluation. The initial step is to develop an evaluation instrument using a research and development approach. This was taken because of the approach aim to produce something that can be implemented in the field being studied (van den Akker et al., 2006).

This study adopted and modified two development models by van den Akker et al. (2006) and, Gable and Wolf (1993). There were four stages of developing the instrument; namely, conceptual analysis, construct identification, instrument development, and content validation. After the instrument was developed, it is used to evaluate the performance of two VHSs in Yogyakarta.

Sample and Data Collection

The product developed in this research was administered to some VHS components, namely students, teachers, and educational staff who provided information on school performance. To validate the content of the instruments, experts were invited to a Focus Group Discussion. The table below shows the number of the sample taken from each research participant.

Table 1. The Number of Research Sample

No	Research Participant	Total
1	Expert	13
2	Teacher	27
3	Educational staff	15
4	Student	303

Based on the information stated in the Ministry's Education Data Center, the researcher decided to choose public vocational high schools SMKN Yogyakarta and private vocational high schools SMKS Yogyakarta. Those schools were selected because they conducted Technology and Engineering expertise programs. Moreover, both schools had students meeting the requirements for analysis. At last, in terms of distance, those schools could be afforded by the researcher, so the process of collecting data from those schools could be done well.

The trials of research instruments found that the research participants from a SMKN Yogyakarta were 15 teachers, 10 educational staff, and 153 students majoring in Electric Power Engineering who were in grade XI and XII. Those students were selected because they had taken part in the Field Work Practice. Meanwhile, in SMKS Yogyakarta, 12 teachers, 5 educational staff, and 150 students from the Technology and Engineering expertise program of Electric Power Engineering, Computer Networking Engineering, and Light Vehicle Engineering were included in the research because they had taken part in the industrial internship.

Content of Validity

This validity is determined by using the experts' deal. The expert of the field of study is deal or domain which is measured to determine the level of validity of content. This case is caused by instrument measurement such as a test or questionnaire which is valid proofed if the expert believes that the instrument could measure the mastering of skill which is defined in domain measured (Ramadhan, Mardapi et al., 2019). This analysing validity used Aiken formula.

Aiken formulates the Aiken's formula V to count content-validity coefficient based on assessment result from the expert panel as much as n people toward an item from the terms of how far the item represents the measured contract (Ramadhan et al., 2020). The submitted formula by Aiken can be shown below:

$$V = \frac{\Sigma s}{n(c-1)}$$

Where,

V = validity index item

S = score applied, each rater reduced low score in category used ($s=r-l_o$, → r = rater score choice and l_o = low score in score categorizing)

N = number of rater

C = number of criterion/rating

Analyzing of Data

In the conceptual analysis conducted in the first stage, the instruments of evaluation were assessed by teachers, educational staff, and students. The questionnaires contained questions with four alternative answers arranged based on the Likert scale. After identifying the construct and designing the instrument, the researcher conducted a Focus Group Discussion. In this activity, the research team invited experts on educational evaluation and vocational education in order to obtain a good instrument.

The techniques used to analyze the data obtained during research were descriptive statistics. This analysis was used to obtain the level of VHSs' performance. School performance is an accumulation of general and academic management scores. The categories of score distribution are presented below.

A = Very Good (interval: $3.25 \leq X \leq 4.00$)

B = Good (interval: $2.50 \leq X < 3.25$)

C = Fair (interval: $1.75 \leq X < 2.50$)

D = Poor (interval: $1.00 \leq X < 1.75$)

X = Average of the obtained scores

Findings

The focus of the research is evaluating the VHS performances, which is initiated with developing instruments for evaluating. Basically, there are three stages to design the instruments. The first stage is conceptual analysis, which aims to investigate the factors influencing VHS performance. The result of the analysis serves as the basis of developing the instrument blueprint. The second stage is validating the contents of instruments developed based on the blueprint. This stage is conducted with the support of experts as the validators. The third stage is evaluating VHS performance using the developed instruments.

Conceptual Analysis (Stage One)

Research Objective 1: Identifying the constructs to design the performance evaluation instrument

In this stage, the researcher analyses the concepts related to the themes of the study. The concepts being analyzed are vocational education, school performance, school performance evaluation, effective education, education for sustainable development, capability approach, entrepreneurship education, and internships. The conceptual analysis is conducted to identify the factors influencing VHS performances.

The references used for analyzing the concepts are from books including e-book by qualified publishers, namely Springer Science + Business Media BV (New York), Palgrave Macmillan (London), McGraw-Hill Irwin (New York), Sage Publications, Inc. (California), and Pearson Education, Inc. (New Jersey). In addition, the references are from research articles published by online international journals, some of which are the Australian Journal of Education, International Journal of Educational Development, Journal of Vocational Education and Training, Journal of Management Education, Journal of Workplace Learning. Other sources are government regulations and guidelines for implementing policies on the education sector issued by the government.

In addition, since the main theme of the research is the development of instruments, the researcher examines the concepts related to instrument development, for example, the instrument development method, measurement concept, as well as validity and reliability. Based on some considerations, the researcher adopts and modifies two development models by van den Akker et al. (2006) and, Gable and Wolf (1993).

Based on the review of several references, the researcher obtains information that school performance is influenced by some factors. Thus, this research focuses only on things related to conditions and management, which are then classified into two, general management and academic management. The aspects of both classifications are presented below (Aiken, 1980; Fleming & Kleinhenz, 2007), the achievements of general management include

- Leadership (A)
- Teachers' and educational staff's involvement in decision making (B)
- Recording/ documentation (C)
- Progress monitoring (D)
- Consistency of staff delegation (E)
- Overall staff development (F)
- Recognition of every school members' success (G)
- Partnership management (H)
- Services to students (I)
- Social climate management (J)
- Management of facilities and infrastructure (K)

Meanwhile, the achievements of academic management include

- Curriculum organization and implementation (1)
- Teacher's consistency in implementing teaching approaches (2)
- The implementation of good vocational education (3)
- Management of fieldwork (4)
- Effective time allocation for study (5)
- Expectations of student achievement (6)
- Routine evaluation of student's progress (7)

The construct is illustrated in the following figure

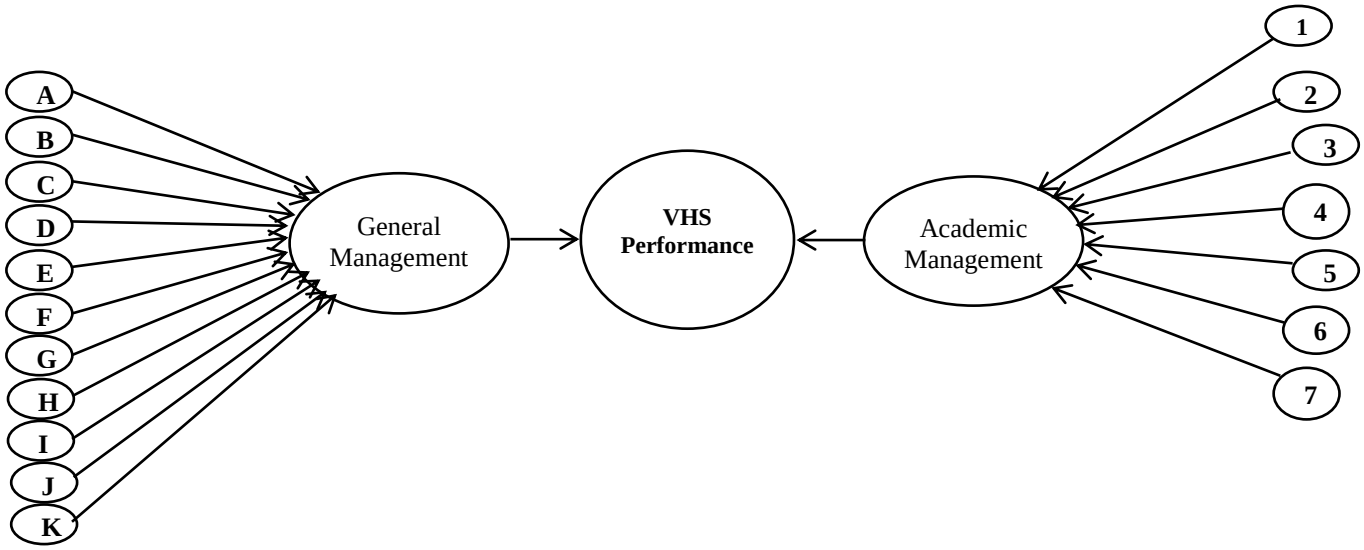

Figure 1. Constructs of Vocational High School Performance

These constructs have been validated by experts. The construct validation activity was carried out by implementing a focus group discussion (FGD). Areas of expertise invited to the FGD activities included:

- Educational Technology
- Educational Research and Evaluation
- Educational Sociology
- Evaluation of Vocational Education
- Measurement, Research and Educational Evaluation
- Philosophy and Theory of Vocational Education

- Technology and Vocational Education
- Vocational Education Curriculum
- Vocational Education in Electrical Engineering
- Vocational Education Learning
- Vocational Education Management

Instrument Development (Stage Two)

Research Objective 2: Developing the instrument and validating its content

Based on the results of the first stage by reviewing various references, the researcher obtains a construct of VHS performance. Those results are used as the basis of developing the instrument blueprint. Then, based on the developed blueprint, instruments are made and then validated by the experts.

The construct of the instrument contains a blueprint that has been developed, and the blueprint is then used to develop questionnaires. The summary of the questionnaire and the source of data are presented in the table below.

Table 2. Aspect and Indicator of the Evaluation Instrument

No	Aspect	Indicator	Data Source/ Item Number		
			T	ES	S
1	General Management	1. Leadership	1-4	1-4	1-3
		2. Teacher's and educational staff's involvement in decision making	5	5	
		3. Recording/documentation		6-8	
		4. Progress monitoring	6	9	
		5. Consistency of staff delegation		10-11	
		6. Overall staff development	7-8	12-13	
		7. Recognition of every school member's success	9, 26	14, 20	4, 24
		8. Partnership management	10-12		5-6
		9. Services to students			11-13
		10. Social climate management	15-17	15-17	14-15
		11. Management of facilities and infrastructure		18-19	16 (a-h)
2	Academic Management	1. Curriculum organization and implementation	18-19		
		2. Teacher's consistency in implementing teaching approaches	20-21		17-18
		3. The implementation of good vocational education	13-14		19-21
		4. Management of fieldwork			7-10
		5. Effective time allocation for study			22-23
		6. Expectations on student's achievement	22-23		
		7. Routine evaluation of student's progress	24-25		

Note: T: Teacher; ES: Educational Staff; S : Student

Content analysis is a set of procedures performed by experts to review a construct. The experts review the blueprint of the instrument, its content, and sources of the data for the instrument. Based on the data obtained in this study, content analysis is performed using the Aiken's method to obtain content validity. The approach taken in this step is the Delphi method. The number of experts involved in this series of Delphi activities is the same as the number of experts at the FGD for construct validation (13 experts). The summary of the results of the content analysis or content validation is shown in Table 3.

Table 3. Results of Content Analysis Using the Aiken's Formula

No	Score														V	
	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	Ss	Index	Status
1	5	3	5	3	5	3	5	5	4	5	5	5	3	41	0.79	Valid
2	5	3	3	5	3	5	3	5	4	3	4	4	3	37	0.71	Valid
3	5	5	3	4	5	5	3	3	3	3	4	5	5	40	0.77	Valid
4	5	5	3	3	3	4	3	5	4	5	4	4	3	38	0.73	Valid
5	4	5	3	3	5	4	3	5	4	5	4	4	3	39	0.75	Valid
6	4	5	3	5	5	5	3	4	4	4	3	3	5	40	0.77	Valid
7	5	3	5	5	3	5	4	5	3	5	5	3	5	43	0.83	Valid
8	5	3	3	3	5	5	5	4	4	5	3	4	3	39	0.75	Valid
9	5	4	5	4	3	3	5	3	4	3	3	5	3	37	0.71	Valid
10	4	4	5	3	3	3	3	3	4	4	5	4	4	36	0.69	Valid
11	4	3	3	4	4	4	3	4	4	3	4	4	4	35	0.67	Valid
12	5	5	5	5	5	4	4	3	4	4	4	5	5	45	0.87	Valid
13	5	4	3	3	4	3	5	4	4	5	4	3	5	39	0.75	Valid
14	5	3	4	3	3	3	5	5	4	3	3	5	5	38	0.73	Valid
15	5	5	5	3	3	5	4	3	3	3	4	3	4	37	0.71	Valid
16	5	4	5	4	5	5	5	4	3	4	4	4	5	44	0.85	Valid
17	5	4	4	4	4	3	5	4	4	5	3	4	4	40	0.77	Valid
18	5	3	5	4	4	4	5	4	5	3	3	4	3	39	0.75	Valid
19	4	5	4	5	4	4	5	3	5	3	5	4	3	41	0.79	Valid
20	4	3	5	3	5	3	4	5	4	5	5	5	4	42	0.81	Valid
21	4	5	4	3	5	4	3	5	5	5	4	4	4	42	0.81	Valid
22	4	4	3	3	4	4	4	3	5	3	5	5	3	37	0.71	Valid
23	4	3	4	4	5	3	3	5	5	4	3	5	4	39	0.75	Valid
24	5	3	5	3	5	4	5	3	3	4	4	5	4	40	0.77	Valid
25	5	3	4	5	4	4	5	4	4	5	3	4	3	40	0.77	Valid
26	4	5	4	4	5	4	5	3	4	4	4	5	4	42	0.81	Valid
27	5	5	4	4	5	3	3	3	3	4	4	5	4	39	0.75	Valid
28	4	4	4	5	4	5	3	4	4	5	3	3	5	40	0.77	Valid
29	5	4	3	4	4	3	5	3	5	5	4	5	4	41	0.79	Valid
30	5	5	5	5	3	5	4	5	5	5	3	4	3	44	0.85	Valid
31	5	4	5	3	4	4	3	4	5	3	5	4	5	41	0.79	Valid
32	5	5	3	5	5	3	5	3	5	4	3	4	5	42	0.81	Valid
33	5	5	4	5	3	4	3	4	3	4	5	4	3	39	0.75	Valid
34	5	4	3	4	3	4	5	3	3	5	5	4	3	38	0.73	Valid
35	5	3	3	3	4	3	5	5	3	4	3	3	5	36	0.69	Valid
36	4	4	3	4	4	5	5	3	5	5	3	4	4	40	0.77	Valid
37	5	3	5	5	3	3	3	4	3	4	5	4	4	38	0.73	Valid
38	5	3	5	3	5	5	4	3	4	5	5	4	3	41	0.79	Valid
39	5	4	5	3	4	4	3	3	3	5	3	4	4	37	0.71	Valid
40	5	3	4	4	5	4	5	4	4	5	3	5	5	43	0.83	Valid
41	5	4	3	5	3	3	3	5	5	5	3	5	4	40	0.77	Valid
42	5	3	3	3	5	5	3	4	4	4	4	4	3	37	0.71	Valid
43	5	3	5	3	3	5	4	4	3	5	5	5	4	41	0.79	Valid
44	5	3	4	5	4	3	4	5	4	4	5	4	4	41	0.79	Valid
45	4	5	5	5	3	5	4	4	3	5	5	4	3	42	0.81	Valid
46	4	4	3	4	3	5	4	5	5	5	5	5	3	42	0.81	Valid
47	5	3	5	4	5	4	4	4	4	5	3	5	3	41	0.79	Valid
48	5	5	4	5	5	3	3	5	3	5	3	3	5	41	0.79	Valid
49	5	5	5	3	4	4	5	3	3	4	5	4	5	42	0.81	Valid
50	5	4	5	3	3	3	4	3	4	4	3	5	3	36	0.69	Valid
51	5	5	5	5	5	4	3	5	3	3	3	4	4	41	0.79	Valid

Note :
V1 – V13 means validator 1 to validator 13
Scale 1 = Very Poor
Scale 2 = Poor
Scale 3 = Fair
Scale 4 = Good
Scale 5 = Very Good

Table 3 shows that all items in the developed instrument are valid. It means that they meet the requirements of content validity. Based on the Aiken's index criteria, the items are valid since they range from 0.67 to 0.87. The limits of significance based on the number of raters, according to Aiken (Aiken, 1980; Aiken, 1985) as follows: the significance value of p = 0.048 requires the V index is more than 0.67 and for p = 0.006 requires the V index is more than 0.75.

The next stage is preparing the instrument based on the validated blueprint. The developed instrument is in the form of questionnaires and its scoring guideline. There are three sets of questionnaires made according to the intended respondents, namely teachers, educational staff, and students.

VHS Performance Evaluation (Stage Three)

Research Objective 3: Conducting performance evaluation in two VHSs in Yogyakarta using the developed instrument.

After the instruments of performance evaluation are compiled and validated, the next step was to evaluate the Technology and Engineering study program at VHS. This evaluation activity was carried out in two schools, namely one state school in SMKN Yogyakarta and one private school in SMKS Yogyakarta. The results of the evaluation for those are as follows.

Data Obtained from SMKN Yogyakarta

Results of evaluation which focus on General Management aspect in SMKN Yogyakarta are presented in Table 4.

Table 4. Scores General Management in SMKN Yogyakarta

No	Aspect		Indicator	Score			Total	Average Score
				T	ES	S		
1	General Management	1	Leadership	181	126	1274	1581	2.849
		2	Teacher's and educational staff's involvement in decision making	40	29		69	2.875
		3	Recording/documentation		93		93	3.100
		4	Progress monitoring	43	31		74	3.083
		5	Consistency of staff delegation		68		68	3.400
		6	Overall staff development	94	55		149	3.104
		7	Recognition of every school member's success	83	53	866	1002	2.831
		8	Partnership management	96		650	746	2.144
		9	Services for students			1221	1221	2.660
		10	Social climate management	146	100	888	1134	3.000
		11	Management of facilities and infrastructure		59	7132	7191	2.914
			Score of the General Management Aspect				*13328*	*2.905*
			GENERAL MANAGEMENT CLASSIFICATION					***B (Good)***

Table 4 shows that the general management of SMKN Yogyakarta is considered "Good". It is shown from the average score of 2,905. However, when examined further, there are some aspects that need to be improved in terms of quality, namely Partnership management and Services for students.

For the aspect of academic management in SMKN Yogyakarta are shown in Table 5.

Table 5. Scores of Academic Management in SMKN Yogyakarta

No	Aspect		Indicator	Score			Total	Average Score
				T	ES	S		
2	Academic Management	1	Curriculum organization and implementation	80			80	2.857
		2	Teacher's consistency in implementing teaching approaches	93		852	945	2.829
		3	The implementation of good vocational education			1359	1359	2.961
		4	Management of field work	98		1877	1975	3.086
		5	Effective time allocation for study			704	704	2.301
		6	Expectations on student's achievement	95			95	3.393
		7	Routine evaluation of student's progress	97			97	3.464
			Score of the Academic Management Aspect				*5255*	*2.984*
			ACADEMIC MANAGEMENT CLASSIFICATION					***B (Good)***

It can be seen from the table above that in the aspect of academic management, the school performance is considered "Good". It is shown from the obtained value of 2.984. However, when further examined, the fifth aspect, which is related to time allocation for study, needs to be improved.

Overall, the performance of SMKN Yogyakarta in the aspects of general and academic management is categorized Good as it is shown in Table 6.

Table 6. Overall Score of SMKN Yogyakarta Performance

	General Management Performance	Academic Management Performance	Average of School Performance	Classification
Scores	2.905	2.984	2.936	B (Good)

Data Obtained from SMKS Yogyakarta

This section discusses the results of evaluations conducted at SMKS Yogyakarta. General Management Scores are shown in Table 7.

Table 7. Scores of General Management in SMKS Yogyakarta

No	Aspect		Indicator	Score			Total	Average Score
				T	ES	S		
1	General Management	1	Leadership	159	70	1337	1566	3.023
		2	Teacher's and educational staff's involvement in decision making	38	16		54	3.176
		3	Recording/documentation		52		52	3.467
		4	Progress monitoring	37	19		56	3.294
		5	Consistency of staff delegation		33		33	3.300
		6	Overall staff development	85	33		118	3.471
		7	Recognition of every school member's success	71	28	744	843	2.524
		8	Partnership management	62		598	660	1.964
		9	Services for students			1253	1253	2.784
		10	Social climate management	120	54	825	999	2.846
		11	Management of facilities and infrastructure		28	5435	5463	2.267
			Scores of General Management				*11097*	*2.920*
			GENERAL MANAGEMENT CLASSIFICATION					***B (Good)***

Table 7 above shows that the general management in SMKS Yogyakarta is considered "Good". The average score obtained in the general management aspect is 2.920. However, when further examined, there are some aspects that need to be improved. They are partnership management, management of facilities and infrastructure, and recognition of the success of school members.

Evaluation results on the aspects of Academic Management at SMKS Yogyakarta are presented in Table 8.

Table 8. The Scores of Academic Management in SMKS Yogyakarta

No	Aspect		Indicator	Score			Total	Average Score
				T	ES	S		
2	Academic Management	1	Curriculum organization and implementation	71			71	2.958
		2	Teacher's consistency in implementing teaching approaches	81		794	875	2.701
		3	The implementation of good vocational education			1139	1139	2.531
		4	Management of fieldwork	86		1587	1673	2.681
		5	Effective time allocation for study			653	653	2.177
		6	Expectations on student's achievement	79			79	3.292
		7	Routine evaluation of student's progress	89			89	3.708
			Score of the Academic Management Aspect				*4579*	*2.864*
			ACADEMIC MANAGEMENT CLASSIFICATION					***B (Good))***

The table above shows that SMKS Yogyakarta performance is considered "Good". It is shown from the score obtained (2.864). However, there are several aspects that need attention, namely time allocation. There is a need to manage time efficiently for independent study when there is no class.

Overall the performance of SMKS Yogyakarta for general management and academic management aspects can be categorized as Good. The results of evaluation are presented in the following.

Table 9. The Overall Score of SMKS Yogyakarta Performance

	General Management Performance	Academic Management Performance	Average of School Performance	Classification
Scores	2.920	2.864	2.898	B (Good)

Discussion

The constructs obtained in this study are summarized in two aspects, namely aspects of general management achievements and academic management achievements. General management achievement aspects include eleven (11) indicators, namely: leadership, involvement of teachers and education personnel in decision making, recording/documenting, monitoring progress, stability of staff delegation, overall staff development, recognition of success for every school member, partnership management, services to students, social climate management, management of facilities and infrastructure. Meanwhile the achievement of academic management include seven (7) indicators: organizing and implementing curriculum, teacher consistency in teaching approaches, applying good vocational education, managing work practices, maximizing the use of learning time, expectations on student achievement, routine evaluation of student progress.

This research activity has produced VHS performance evaluation instruments as follows: (a) instrument of VHS performance evaluation with teacher respondent, education staff respondent, and student respondent, (b) scoring guidance of vocational performance evaluation. The specifications of the instruments were (i) the instrument with teacher respondents composed of 26 items, (ii) the instrument with educational staff respondents composed of 20 items, (iii) the instrument with student respondents composed of 31 items. All items in the instruments are categorized as valid with Aiken's V index between 0.67 and 0.87 which assessed by 13 reviewers.

Based on the results of the study, the performance of two vocational schools in Yogyakarta for general management achievements and academic management achievements is categorized as good. Achievements of general management in state VHS is 2.905 (on a scale of 4) while in private VHS is 2.920 (on a scale of 4) and categorized as good. For the achievements of the academic management of state vocational high school obtained a score of 2.984 (on a scale of 4) while those in private vocational school got a score of 2,864 (on a scale of 4) and categorized as good.

The results of this study are relevant to the research of Cervai et al. (2013) which reveals that the external quality of learning outcomes in vocational education by considering a broader approach is to the perception and expectations of stakeholders. (Cervai et al., 2013). The findings of this research are also in line with the findings of Saunders (2012) which reveal that aspects carried out in performance include the design, implementation, and assessment of professional development initiatives (Saunders, 2012).

Likewise, the research conducted by Jaedun (2016) which shows that the results of school performance assessment based on the student's data source are consistent with the assessment results of the service provider, both the principal and the teacher. It is also in line with findings indicating that learners are one of the valid data sources for use in school performance assessments. The findings in this research also corroborate the research conducted by Jelantik et al. (2014) aims to know and analyze the level of performance of the school in SMK Rekayasa Denpasar seen from aspects and indicators that support the realization of effective school education management in SMK Rekayasa Denpasar.

The results of this research also confirm findings made by Yusmina and Murniati (2014) shows that the factors that affect, the first supporting factors: the quality of human resources teachers and the school principal is good enough, adequate infrastructure facilities, high level of community confidence and interest, students and school committees, the inhibitory factor: among others human resources is not optimal and the work culture of teachers and employees is not in accordance with integrated quality management.

Conclusion

Based on the results of the research, it is necessary to do several things so that the instruments have good quality and provide valid information related to the performance of the vocational high schools. The thing that needs to be done is expanding the scope of trials to obtain various information about the conditions of the schools. Besides, there is a need to prepare the implementation of evaluation more carefully –especially in the selection of respondents from the student component– so the students can fill in the questionnaires correctly.

The limitation of this study is the validation of the instrument of VHS performance evaluation set by expert judgments method. This validation is done by asking the opinion of experts to assess the accuracy of the instrument based on the aspects measured. Nevertheless the researchers believe that the validation results can be used as a basis for stating that the instrument has met the validity requirements, so that the instrument can be used to measure VHS performance.

Besides, the data validity of the instrument is highly dependent on the objectivity and seriousness of the respondent in answering the questions, In addition, the selection of student respondents is limited to students who have carried out fieldwork practices. Because, the information required needs such data which only those students provides. If any student is chosen it is believed that the data will be invalid because students have not been able to answer questions related to fieldwork practices

References

Aiken, L. R. (1980). Content validity and reliability of single items or questionnaires. *Educational and Psychological Measurement, 40*(4), 955-959. https://doi.org/10.1177/001316448004000419

Aiken, L. R. (1985). Three coefficients for analyzing the reliability and validity of ratings. *Educational and Psychological Measurement 45*(1), 131-142. https://doi.org/10.1177/0013164485451012

Akareem, H. S., & Hossain, S. S. (2016). Determinants of education quality: what makes students' perception different? *Open Review of Educational Research, 3*(1), 52-67.

Al-Ali, S. (2016). A model for enhancing the quality of vocational education graduates the college of technological studies, Kuwait, as a case study. *Researchers World, 7*(2), 96-101. https://doi.org/10.18843/rwjasc/v7i2/10

Beilmann, M., & Espenberg, K. (2016). The reasons for the interruption of vocational training in Estonian vocational schools. *Journal of Vocational Education & Training, 68*(1), 87-101.

Billett, S. (2011). *Vocational education: Purposes, traditions and prospects*. Springer Science+Business Media B.V.

Cervai, S., Cian, L., Berlanga, A., Borelli, M., & Kekale, T. (2013). Assessing the quality of the learning outcome in vocational education: The Expero model. *Journal of Workplace Learning*, *25*(3), 198-210.

Chouinard, J. A., & Cousins, J. B. (2015). The journey from rhetoric to reality: Participatory evaluation in a development context. *Educational Assessment, Evaluation and Accountability, 27*(1), 5-39. https://doi.org/10.1007/s11092-013-9184-8

Coates, H. (2009). Building quality foundations: indicators and instruments to measure the quality of vocational education and training. *Journal of Vocational Education and Training, 61*(4), 517–534. https://doi.org/10.1080/13636820903326532

DeNisi, A., & Smith, C. E. (2014). Performance appraisal, performance management, and firm-level performance: a review, a proposed model, and new directions for future research. *The Academy of Management Annals, 8*(1), 127-179. https://doi.org/10.5465/19416520.2014.873178

Fallon, L. M., Collier-Meek, M. A., Maggin, D. M., Sanetti, L. M., & Johnson, A. H. (2015). Is performance feedback for educators an evidence-based practice? A systematic review and evaluation based on single-case research. *Exceptional Children, 81*(2), 227-246.

Fleming, J., & Kleinhenz, E. (2007). *Towards a moving school: Developing a professional learning and performance culture*. Australian Council for Educational Research Ltd.

Gable, R. K. & Wolf, M. B. (1993). *Instrument development in the affective domain : measuring attitudes and values in corporate and school settings*. Springer Science+Business Media.

Jaedun, A. (2010). Model asesmen kinerja sekolah berbasis peserta didik [Student-based school performance assessment model]. *Journal of Research and Education Evaluation/ Jurnal penelitian dan evaluasi pendidikan*, *14*(1), 100-122. https://doi.org/10.21831/pep.v14i1.1978

Jelantik, A., Dantes, N., & Suarni, N. K. (2014). Studi evaluatif tentang kinerja sekolah pada sekolah Smk rekayasa Denpasar [Evaluative studies on school performance at rekayasa Denpasar vocational high school]. *Journal of Indonesian Education Administration/ Jurnal Administrasi Pendidikan Indonesia*, *5*(1), 41-50. https://doi.org/10.23887/japi.v5i1.1405

Lillis, K., & Hogan, D. (1983). Dilemmas of diversification: problems associated with vocational education in developing countries. *Comparative Education, 19*(1), 89-107. https://doi.org/10.1080/0305006830190108

Madani, R. (2019). Analysis of educational quality, a goal of education for all policy. *Higher Education Studies, 9*(1), 100-109. https://doi.org/10.5539/hes.v9n1p100.

Mardapi, D. (2017, February 14). *The role of evaluation in improving the quality of vocational education* [Paper Presentation]. The University Senate's Open Session for Retiring Professor, Yogyakarta State University, Yogyakarta, Indonesia.

Ministry of Education and Culture. (2016). *Revitalisasi pendidikan vokasi kementerian pendidikan dan kebudayaan*. [Revitalization of vocational education ministry of education and culture]. Directorate of Vocational High School Development, Ministry of Education and Culture.

Mo, Y. (1992). The maintenance of academic standards at Tuen Mun Technical Institute, Hong Kong. *The Vocational Aspect of Education, 44*(3), 259-281. https://doi.org/10.1080/10408347308003971

Moodie, G. (2002). Identifying vocational education and training. *Journal of Vocational Education and Training, 54*(2), 249-266. https://doi.org/10.1080/13636820200200197

Panina, T. S., Kostyuk, N. V., Pakhomova, E. A., & Dochkin, S. A. (2019). Innovation potential of vocational education and training institutions as a basis for high quality professional training. *Contemporary Dilemmas: Education, Politics and Values/ Dilemas Contemporaneos: Educacion, Politica y Valore, 6 (Special), 1-29*.

Purkey, S. C., & Smith, M. S. (1983). Effective schools: A review. *The Elementary School Journal*, *83*(4), 427-452. https://doi.org/10.1086/461325

Ramadhan, S., Mardapi, D., Prasetyo, Z. K., & Utomo, H. B. (2019). The development of an instrument to measure the higher order thinking skill in Physics. *European Journal of Educational Research, 8*(3), 743-751. https://doi.org/10.12973/eu-jer.8.3.743

Ramadhan, S., Nasran, S. A., Utomo, H. B., Musyadad, F., & Ishak, S. (2019). The implementation of generalisability theory on physics teachers' competency assessment instruments development. *International Journal of Scientific & Technology Research, 8*(7), 333-337.

Ramadhan, S., Sumiharsono, R., Mardapi, D., & Prasetyo, Z. K. (2020). The Quality of Test Instruments Constructed by Teachers in Bima Regency, Indonesia: Document Analysis. *International Journal of Instruction, 13*(2), 507-518 . https://doi.org/10.29333/IJI.2020.13235a.

Retnawati, H., Hadi, S., Nugraha, A. C., Sulistyaningsih, E., Djidu, H., Apino, E., Iryanti, H.D., Arlinwibowo, J. (2017). Implementing the computer-based national examination in indonesian schools: the challenges and strategies. *Problems of Education in the 21st Century, 75*(6) 612-633.

Rojewski, J. W. (2009). A conceptual framework for technical and vocational education and training. In R. Maclean, D. Wilson, & C. Chinien (Eds.),. *International Handbook of Education for the Changing World of Work: Bridging Academic and Vocational Learning* (p. 19-36). UNESCO-UNEVOC (Springer Science+Business Media B.V).

Rossi, P. H., Lipsey, M. W., & Henry, G. T. (2018). *Evaluation: A systematic approach*. Sage publications

Saunders, R. (2012). Assessment of professional development for teachers in the vocational education and training sector: An examination of the concerns based adoption model. *Australian Journal of Education*, *56*(2), 182-204.

Sirajudeen, M., & Sulaiman, M. (2020). A study on evaluation of school management and job satisfaction of the faculty members. *Our Heritage, 68*(1), 3797-3803.

State Secretary of the Republic of Indonesia (2016a, August 29). *Undang-undang Republik Indonesia nomor 20 tahun 2003 tentang sistem pendidikan nasional* [Act of the Republic of Indonesia, number 20, year 2003 on national education system]. Kementerian Pendidikan dan Kebudayaan [Ministry of Education and Culture]. http://luk.staff.ugm.ac.id/atur/UU20-2003Sisdiknas.pdf

State Secretary of the Republic of Indonesia. (2016b). *Presidential instruction number 9 of 2016: Concerning revitalization of vocational high schools in the context of improving the quality and competitiveness of human resources of Indonesia.* Kementerian Pendidikan dan Kebudayaan [Ministry of Education and Culture]. http://kemdikbud.go.id/main/files/download/e451d9ec3a04121

Suryavanshi, A. G. (2012). Innovative education: A student approach. *African Journal of Business Management, 6*(44), 10847-10857.

Triyono, M. B., & Moses, K. M. (2019). Technical and vocational education and training and training in Indonesia. In Bai, Bin, & Paryono (Eds.), *Vocational Education and Training in ASEAN Member States* (pp. 45-79). Springer.

van den Akker, J., Gravemeijer, K., McKenney, S., & Nieveen, N. (2006). *Educational Design Research*. Routledge, Taylor and Francis Ltd.

Wikipedia (2016, September 7). *Vocational education*. https://en.wikipedia.org/wiki/Vocational_education

Yusmina, E., & Murniati, A. R. (2014). Implementasi manajemen mutu terpadu dalam peningkatan kinerja sekolah pada SMK Negeri 1 Banda Aceh [Implementation of integrated quality management in school performance improvement at SMK Negeri 1 Banda Aceh]. *Journal of Educational Administration: Unsyiah Postgraduate Program/ Jurnal Administrasi Pendidikan: Program Pascasarjana Unsyiah*, *2*(2), 168-178.