



The Development of Learning Model Based on Holistic and Collaborative Approach to Create Excellent Human Resources (HR) in Vocational Shipping Education

Budi Riyanto; Dwi Haryanto

Politeknik Pelayaran Sorong, Indonesia

<http://dx.doi.org/10.18415/ijmmu.v10i4.4565>

Abstract

This study was a type of development research study that aimed to develop a learning model in shipping vocational education based on the holistic and collaborative approach for cadets at Politeknik Pelayaran Sorong in order to create superior and professional Human Resources in the shipping sector. This development model helped in improving the quality learning process that was tailored to the needs of cadets and stakeholders in the shipping sector. The obstacles found in the field were still many graduates as many as 72.5% of graduates experienced problems with international communication and 67% of graduates at Politeknik Pelayaran Sorong in the field of ship engineering were currently weak in competence of electrical, refrigeration, air conditioning, and control systems. Based on the results of the stakeholder satisfaction questionnaire on the quality of Politeknik Pelayaran Sorong graduates, it showed that 78.7% of stakeholders were not fully satisfied with the quality of graduates so they needed to improve their skills in their fields. This development research study used three stages of development research, namely: 1) preliminary study stage as needs and content analysis, 2) development stage as design, development, and evaluation, and 3) feasibility testing stage. The results of the study stated that the results of developing a holistic and collaborative approach could increase learning motivation by 73.33%.

Keywords: *Holistic and Collaborative Approach; Learning Activities; Human Resources (HR)*

Introduction

Vocational education is an education model that focuses on strengthening certain skills. The main skill of vocational education is to prepare students to be able to work after passing a certain education program (Anam, 2021). Vocational High Schools in Indonesia have nine areas of expertise recognized by the Ministry of Education, Culture, Research and Technology (Kemendikbud Ristek). These areas of expertise are described in more detail in Directorate General of Vocational High Schools Number Regulation No. 6/2018 on Vocational High School Expertise Spectrum. The nine areas of expertise are Technology and Engineering, Energy and Mining, Information and Communication Technology, Health and Social Work, Agribusiness and Agrotechnology, Maritime, Business and Management, Tourism, Arts and Creative Industries. The period of study at a vocational high school (SMK) is three years, while the

study period at a higher level is three to four years to obtain a D3 or S1 degree. Vocational college graduates are expected to be able to work immediately, either working in the industrial world or creating their own jobs according to their respective fields of expertise (Masykar, 2019).

Currently, vocational education in Indonesia uses a modeling system and is supported by the business world or aligns with the needs of stakeholders. The education model using associations between the world of education and the world of industry or stakeholders is expected to be able to produce graduates who are ready to be accepted by the industry or stakeholders. Graduates qualifications needed by the industry today are graduates who have superior skills and are able to work professionally in their fields, have lifelong learning models for changes that occur in work and organizations, can work independently, have initiative, and are able to make decisions quickly and responsively, and able to plan work (Zooligen, 2004).

Vocational education is required to provide the best service in order to provide satisfaction to all stakeholders. The level of stakeholder satisfaction will give the institution a good reputation and benefits for the uptake of graduates. Therefore, the implementation of vocational education must be managed properly so that it will produce graduates who are qualified and professional in their fields. Human resources (HR) in a company play role in spurring the performance of the entire system in it (Apriliani, 2020). Vocational education has become the focal point of national content as an effort to improve human resources (HR) who are superior and able to compete globally.

According to Nofiantoro, et al (2017), vocational programs are usually less selective and represent the least prestigious of high school tracks. This can bring a certain degree of stigma that may lead to discrimination when candidates compete for limited access to higher education. The alternative argument is that vocational schooling's overall objective may restrict access to higher education because they offer a more restrictive curriculum with less emphasis on advanced core subjects, such as math and science, and result in a lower level of achievement in standardized test for selection into higher education.

Another challenge is the vocational education curriculum which is not yet in line with industrial needs. The curriculum is one of the important components in the implementation of education in realizing the goals and objectives of education. The curriculum is the main requirement that can support the quality of learning for educational institutions (Moha, 2021). Regarding the quality of education, in providing education at vocational high schools in the shipping sector, Politeknik Pelayaran Sorong has the responsibility to ensure quality education by educating graduates in the shipping sector to become skilled and superior graduates in order to meet the needs of the national and international naval fleet (Abritia, R.N. et al, 2021). The Vocational Education Program at Politeknik Pelayaran Sorong has 3 study programs, namely the Nautical Diploma-III Study Program, the Ship Engineering Diploma-III Study Program, and the Marine Transportation Management Diploma-III Study Program.

Politeknik Pelayaran Sorong has a different educational pattern from Vocational higher education institutions in general. This peculiarity can be seen in the application of scientific disciplines which they will later implement in the world of work in accordance with the field of expertise in the shipping sector. This is also reflected in the curriculum, namely the learning curriculum, learning model, and parenting curriculum.

Based on the results of a tracer study on graduates of the Class of 2020/2021, it was identified that the implementation of the knowledge, skills, and services of graduates of the Nautical Diploma-III study program, the Ship Engineering Diploma-III Study Program, and the Marine Transportation Management Diploma-III study program at Politeknik Pelayaran Sorong showed that 72.5% of graduates experienced problems dealing with communication internationally. Some of the graduates became seafarers, most of whom were migrant workers on foreign ships. Stakeholder records stated that there were still many Human Resources (HR) graduates of the Politeknik Pelayaran Sorong still had poor communication skills, especially while using English, as the result, they had weaknesses in the field of

communication and 67% of graduates' output at Politeknik Pelayaran Sorong in the field of ship engineering was currently weak in competence especially in the fields of electrical, refrigeration, air conditioning, and control systems. Thus, it is necessary to improve skills in their fields.

Based on the results of a stakeholder satisfaction questionnaire on the quality of graduates of Politeknik Pelayaran Sorong, it showed that 78.7% of stakeholders were not fully satisfied with the quality of graduates. This led to the performance/quality of graduates which did not meet stakeholder's expectations. The quality of graduates had not been maximized due to the lack of skilled graduates in the field of electrical and shipping control systems and weak communication using the international language, namely English. In addition, some curricula and learning strategies were not appropriate and in accordance with the needs of cadets. Curriculum models and learning strategies had not adjusted to the needs of stakeholders because the quality of graduates were less than optimal, as the result, it has an impact on stakeholders's satisfying level dealing with the quality of graduates at Politeknik Pelayaran Sorong.

Based on the above background, it is necessary to develop a vocational education model at Politeknik Pelayaran Sorong based on holistic and collaborative approach that adapts to the demands of stakeholders and the needs of the industrial world in the shipping sector in order to improve the quality and quantity of human resources (HR) who are superior and skilled in their fields. Holistic and collaborative approaches in higher education focus on learner-center and promote learning by doing, interacting, and sharing ideas with peers. This approach in learning and teaching is responding to the change and challenges in completing the demands of stakeholders need.

Literature Review

The literature review was also carried out by researchers by establishing supporting concepts and theories in the development of holistic and collaborative approach for vocational education models, including stakeholder collaboration theory, learning strategies, and foster collaboration approach theory. Collaboration is an activity of cooperation, interaction, and compromise between related parties either directly or indirectly (Institution of State Administration of the Republic of Indonesia, 2014). Collaborative learning emphasizes on building meaning by students from social processes that are based on the learning context. This collaborative method goes further and deeper than just being cooperative. The basis of the collaborative method is the interactional theory which views learning as a process of building meaning through social interaction (Thobroni, 2016:252).

Matthews (in Barkley, Cross, and Major, 2012: 8) argues that collaborative learning can take place when students and teachers work together to create knowledge. Collaborative learning is a pedagogy whose center lies in the assumption that humans always create shared meaning and the process always enriches and broadens their horizons. A collaborative learning approach that demands cooperation between students and teachers, stakeholders, and the industrial world requires students to be more active and learning by doing. Stakeholders are all parties, internal and external, who can influence or be influenced by the company either directly or indirectly (Nor Hadi, 2011:93).

It can be concluded that learning with a holistic and collaborative approach can be beneficial for learners. Collaborative learning can improve and enrich a vocational college's goal to have adequate sources of knowledge and higher-order thinking skills for students, so students whose skills are still lack will be helped to develop and deepen their understanding. Moreover, holistic and collaborative approach puts more emphasis on building the character of students as a whole and comprehensively focuses on preparing students to face challenges in the world of work.

Research Methods

The research design of this research was research and development. This study used the principles and steps of Borg and Gall. The purpose of this research model was a method for developing and testing a product. Without reducing the meaning of the ten steps, the researcher categorized them into 3 steps for research and development as Sukmadinata (2006:176) modifies it into three stages of research and development, namely: 1) preliminary study stage as needs and content analysis, 2) development stage as design, development and evaluation, 3) feasibility testing stage.

To obtain a comprehensive picture of research methods, a summary of research methods was presented below.

Table 1. Summary of Research Methods

Steps	Research Focus	Source of Data	Data Collection Technique	Data Analysis Technique	Result
Introduction	Planning, Implementation and Evaluation	Youth and Stakeholders	Observation interview guide, and Questionnaire	Qualitative	Factual Model
Development	Planning, Implementation, and Evaluation	cadets, stakeholders, lecturers	Interview guide, Observation, FGD Guide, and Questionnaire	Qualitative, data collection, data reduction, data presentation, and conclusion drawing	Hypothetical Model
Evaluation/Validation Stage	Testing the effectiveness of the model	Expert	Interview guide, FGD assessment guide, practitioner assessment guide, FGD guide	Quantitative descriptive for data from the questionnaire	Final Model

In the preliminary stage, observations were carried out which aimed to identify the research subject and to obtain data on the real condition of the learning model in Vocational Education that already existed (factual model) and the results of this preliminary study also resulted in the design or concept of the learning model in Vocational Education at Politeknik Pelayaran Sorong which was developed as needed.

Then, an analysis was carried out between the results of the relevant literature study (conceptual model) and the findings of the model in the field (factual model) about the implementation of learning in vocational education at Politeknik Pelayaran Sorong in order to produce a design model for shipping vocational education based on a holistic and collaborative approach to increase skilled and superior human resources in their fields.

At the development stage, the researchers carried out the following activities:

- a. Developing a hypothetical model of a holistic and collaborative approach as a guide for carrying out learning activities at Politeknik Pelayaran Sorong
- b. Developing a learning model guide as the basis for developing a learning model for guidelines that will be used to run the developed model

- c. Validating a holistic and collaborative approach as the basis for developing graduate competencies at Politeknik Pelayaran Sorong
- d. Validating the holistic and collaborative approach as the basis for developing the competencies of Politeknik Pelayaran Sorong graduates by involving stakeholders and academics in the Politeknik Pelayaran Sorong environment through Focus Group Discussions (FGD)
- e. Revising the improvement of the holistic and collaborative approach as a complement to the mission of developing graduate competencies
- f. Conducting a limited trial of the feasibility of the model and manual by involving users, stakeholders, and academics in Politeknik Pelayaran Sorong environment.

Data collection techniques in this study were by means of questionnaires, interviews, observations and document studies conducted from March to May 2022. Instrument validation was carried out in March 2022 with learning management model experts. Analysis of validity and reliability used the SPSS release 15 program. Based on the validity analysis above, the learning model development instrument was declared as valid. The results of the reliability test on the learning model development instrument with 10 respondents were as follows:

Table 2. Case Processing Summary (Colum vertica)

	N	%
Cases Valid	10	100,0
Exclude	0	0
Total	10	100,0

Table 3. Reliability Statistic (Colum vertica)

Variable	Alpha Cronbach	N of Items	Description
X	0,935	25	Reliable

Based on the results of the reliability test of 25 questions, a coefficient value of 0.935 is obtained, which means it was very reliable. Judging from the results of the reliability test above, it was stated that the question items on the questionnaire in this study were declared reliable so that they could be used as research instruments.

Results and Discussion

Based on the results of interviews regarding the level of stakeholder satisfaction with the quality of graduates of Politeknik Pelayaran Sorong including: 1) around 37.5% of stakeholders stated that they were satisfied with the quality of graduates at Politeknik Pelayaran Sorong, 2) 55% of stakeholders stated that some graduates have working skills in accordance with the field expertise, 3) 52.5% of stakeholders stated that Politeknik Pelayaran Sorong graduates were still weak in the field of marine electrical engineering, 4) stakeholders stated that only 65% of graduates were able to communicate using active English when interacting with foreigners on the ship. From the results of these interviews, it can be concluded that the level of stakeholder satisfaction with the quality of Politeknik Pelayaran Sorong graduates was only 52.5% on average and it was still in the medium category, not in maximum one.

The learning model that had been applied previously (factual model) at Politeknik Pelayaran Sorong was very important to be discussed because the phenomenon of gaps in the field occurred between expectations and reality both empirically and theoretically. The phenomenon of gaps was also one of the objectives in developing learning models. The phenomenon of these gaps include 1) learning models that were still conventional and only focused on the cognitive domain (knowledge), 2) the previously

implemented curriculum had not been adapted to stakeholder needs, 3) minimum English skills, reinforced by the TOEFL results. The average graduate got score below 450, 4) the duration of the internship was too short, causing less than optimal skill mastery, 5) learning evaluation activities were not well-structured and there was no follow-up act in improving the quality of education in Politeknik Pelayaran Sorong environment, 6) supporting facilities for practice was less than optimal and needed significant improvement.

Based on the results of observations and interviews with educators, the educators at the Politeknik Pelayaran Sorong already had qualifications in their fields but unfortunately, there were still many of them did not have competency certification in specialized areas of expertise. Thus, training was needed to improve the pedagogical abilities of educators. It also required strong motivation from educators to improve their ability to improve the quality of learning. The educational background and work experience of the educators greatly supported the quality of learning activities. The planning process in determining the qualifications or standards of educators must be considered and pursued wisely, including 1) educators were equipped with English language skills, 2) educators had experience in the field of expertise (shipping), 3) educators had commitment dealing with learning competencies, 4) educators had growth mindset.

On the other hand, facilities to support learning activities were good, but facilities to support practical activities still required intensive improvement so that practical activities cannot be carried out optimally.

The results of the preliminary studies were relevant to the findings in the field (factual model) which obtained a hypothetical model. The problems faced which became the obstacles and weaknesses of the previously applied learning model became the basis for developing a model in order to improve the competence and quality of graduates at Politeknik Pelayaran Sorong.

An approach developed by integrating a hiapproach that puts forward intensive collaboration with practitioners/stakeholders based on the original principle of mutualism with stakeholders. The holistic and collaborative approach was an approach that emphasizes learning activities with a learning-by-doing pattern (learning while practicing) by involving stakeholders in which learning activities used Project-based learning, problem-solving, and discussion models that referred to 3 aspects, namely knowledge, skills and attitude. Learning by implementing holistic and collaborative approach was learning by emphasizing aspects of a human's life experience and ways of learning by eliminating boundaries of space and time.

The application of holistic and collaborative approach emphasized on building one's own understanding actively, creatively, and productively based on previous knowledge and from meaningful learning experiences. The creation of a good learning environment and prioritizing field activities such as conducting observations, research, and practice made the cadets at the Politeknik Pelayaran Sorong learned more actively, creatively, effectively and learned in happy atmosphere, so that learning objectives were achieved well.

The development of holistic and collaborative approach included 3 aspects of the management function, including the following:

1. Planning

In the planning aspect, there were several things that were needed to be prepared, including 1) setting qualification standards for educators in Politeknik Pelayaran Sorong academic environment, 2) designing learning models that were tailored to the needs of cadets and stakeholders, 3) designing learning methods and models as an effort to improve the quality of graduates, 4) setting competency standards and learning achievement indicators tailored to the needs analysis of cadets, 5) designing a

syllabus that was tailored to the needs of stakeholders, 6) designing evaluation and monitoring instruments for learning activities so that there were steps to improve the quality of learning.

2. Implementation

The implementation of holistic and collaborative approach at Politeknik Pelayaran Sorong includes: 1) strengthening the competence of cadets, especially in the field of shipping electrical expertise and shipping technical fields most of 75% cadets were doing field activities, 2) strengthening the pedagogic competence of educators, 3) carrying out ongoing internship activities at partners stakeholders, 4) implementation of project-based learning involving practitioners/stakeholders, 5) implementation of the TOEFL test with a minimum standard value of 450.

3. Evaluation

Evaluation activities to measure the success of learning activities were carried out by going through several stages including 1) giving a questionnaire to cadets at the end of the internship to measure the level of satisfaction after participating in the internship and to find out what competencies have been achieved, 2) giving a questionnaire to educators to find out obstacles during guidance and learning, 3) regular monitoring of learning activities. Monitoring was carried out to maintain the quality of graduates. Monitoring was done by giving questionnaires to cadets and educators at the end of learning activities to find out the optimality of learning.

The validation results from experts on the submission of a hypothetical model of a holistic and collaborative approach were obtained from the training model experts and users during Focus Group Discussion (FGD) activities. In the Forum Group Discussion (FGD) discussion, which presented practitioners/stakeholders who had competencies, experiences, and skills in the shipping sector, they were given questionnaire covering the components of learning achievement indicators, level of interest, relevance, and effectiveness of the model as well as guidance on learning models based on the holistic and collaborative approach which was applied by Politeknik Pelayaran Sorong. The results of the questionnaire were used as the basis for analyzing and conducting reflection activities on the design of learning model development in order to improve the ability of the graduates at Politeknik Pelayaran Sorong.

The results of the analysis and reflection were used as the basis for improving the hypothetical model, and which can be seen in the following table:

Table 4. Validation Results of the Foster Collaboration Approach-Based Learning Model

No	Aspect	Amount	Percentage%	Criteria	Description
1	Learning Model Guide Structure	22,1	78,4	Very Worthy	No Revision
2	Content Compatibility	16,4	97,0	Very Worthy	No Revision
3	Construction Suitability	21,8	87,2	Very Worthy	No Revision
4	Language	13,5	90,0	Very Worthy	No Revision
5	Practicality Level	22,4	88,0	Very Worthy	No Revision
6	Writing Organization	12,2	80,4	Very Worthy	No Revision
	Total	100,5	80,5	Very Worthy	

Practitioner validation test aimed to get input from practitioners or stakeholders. The limited group practitioner validation test activity was carried out after receiving validation from experts and was declared feasible to be implemented at Politeknik Pelayaran Sorong. The feasibility level of this holistic and collaborative approach can be seen from the results of the questionnaire given to users, namely

stakeholders, and educators, that was 80.5% of this learning model was feasible to be implemented at the Politeknik Pelayaran Sorong.

The application of holistic and collaborative approach affected the improvement of cadet competencies in the shipping sector. Based on the results of the motivation questionnaire given to the 30 cadets randomly, it showed that the results of the application of the holistic and collaborative approach at the Politeknik Pelayaran Sorong on the cadets showed that learning motivation was very high at 26.67% and learning motivation was in the high category at 73, 33%. This indicated that the holistic and collaborative approach was effective to apply. Another indicator that the model was effective was, if there was motivation of the cadets in participating in learning process.

The results of the correlation between cadets' motivation and holistic and collaborative approach were presented in Table 5 as follows:

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Motivasion ^b	.	Enter
a. Dependent Variable: PostTest			
b. All requested variables entered.			

Table 6. Correlation Analysis of Learning Motivation and Learning Outcomes

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757 ^a	.572	.557	1.37101
a. Predictors: (Constant), Motivation				

Based on the table above, it could be explained that the holistic and collaborative approach was effective to be applied with a correlation of 75.5%. This showed that it was effective with a positive correlation and the correlation was also high. Furthermore, the test for the pre-test and post-test questions were also positively correlated which indicated that the questions made to determine ability were good. The results of the questions used to determine the existence of a good correlation in the foster collaboration-based learning model were also effective.

To determine the level of effectiveness of the model used in this study, a parametric statistical test calculation was carried out using the t-test. The results of the -t test on the data from the pre-test and post-test learning outcomes, using SPSS version 24 from IBM, obtained the following analysis results:

Table 7. Results of Pre-Test and Post-Test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PostTest - PreTest	14.3750	3.12233	.57006	13.20910	15.54090	25.217	29	.000

The results of data analysis showed that the t-value for the statistical test was 25.217 with a significant level of Sig = 0.000 ($p < 0.05$), which meant that there was a difference between the average pre-test score and the accepted post-test score. It can be concluded that "Ha is accepted". This meant that there was a difference between the learning outcomes for the pre-test and post-test, so it was also concluded that holistic and collaborative approach was effective. Based on the conclusion of the statistical test results above, the holistic and collaborative approach was effectively used to improve the competence of cadets at the Politeknik Pelayaran Sorong.

Conclusion

Based on the description related to the findings and discussion, the following conclusions can be drawn:

1. The previously applied learning model at the Politeknik Pelayaran Sorong was still not optimal, it can be seen from several aspects including: (1) learning objectives had not been adjusted to the needs analysis of cadets, (2) the implementation of learning activities still used lecture or conventional methods, (3) evaluation activities were carried out using a paper-based test at the end of the semester. Learning activities were still monotonous, focus on mastering knowledge only and have not touched the psychomotor and affective aspects, so that cadets were less motivated to learn.
2. The holistic and collaborative approach was developed from factual models and adapted to the needs analysis of cadets and stakeholders and then developed in order to create superior human resources in their fields.
3. The feasibility of holistic and collaborative approach was appropriate to support learning activities for superior and professional human resources in the shipping sector. This was evidenced by the expert or expert validation test during the Focus Group Discussion (FGD) activity, which obtained an average score of 85.5%, which was very valid to be implemented in Politeknik Pelayaran Sorong.
4. The effectiveness of holistic and collaborative approach was effective to support learning for superior and professional human resources in the shipping sector. This was evidenced by the results of data analysis showing that the t value for the statistical test was 25.217 with a significant level of Sig = 0.000 ($p < 0.05$) which meant that there was a difference between the average pre-test score and the accepted post-test score. It can be concluded that "Ha is accepted". This meant that there was a difference between the learning outcomes for the pre-test and post-test, so it can also be concluded that there was an effective implementation of holistic and collaborative approach.

References

- Abritia, R.N. et al. 2021. Strategi Pengambilan Keputusan Pengembangan Pendidikan Tinggi Vokasi Kemaritiman. *Majalah Ilmiah Bahari Jogja. Journal of Maritime Issues, sea transportation and management*. Vol.19 No. 2 juli (2021), 64-87. DOI <https://doi.org/10.33489/mibj.v19i2.265>.
- Abu Zahra, N. A. 2016. Using Short Stories in the EFL Classroom. *IUG Journal of Humanities Research*, 24(1), 11-24.
- Allen, K.P. 2012. *Classroom Management, Bullying and Teacher Practice. The Professional Educator*, 34(1), 1-15.
- Anggraini, Y, D. 2010. *A Model Program for Teaching Effective Presentation Skill for Students in the Fifth Semester*. Master Thesis, University of Muhammadiyah Prof, De. HAMKA, Jakarta.
- Auster, E. 2006. Creating Active Learning in The Classroom: A systematic Approach. *Journal of Management Education*, 333-353.
- Barkley, E., P. Cross, and C. Major. 2005. *Collaborative Learning Techniques: A Handbook for College Faculty*. San Francisco: Jossey-Bass.
- Chin, C. 2006. Classroom Interaction in Science: teacher questioning and feedback to the students' responses. *International Journal of Science Education*, 28(15), 1315-1346.
- Education-Indonesia.org. (2022, 25 February). An Introduction to the Indonesian Vocational Education System. Diakses pada 23 oktober 2022 pukul 19.13 dari <https://education-indonesia.org/news/an-introduction-to-the-indonesian-vocational-education-system>.
- Hadi, N. 2011. *Corporate Social Responsibility*. Yogyakarta: Graha Ilmu.
- Hudson, P. 2013. Identifying desirable attributes and practices for mentees. *European Journal of Education Research*. Vol 2, No.3, 107-119.
- Ismail, K., Mohd Nopiah, Z., & Rasul, & M.S. 2018. Challenges Faced by Vocational Teachers in Public Skills Training Institutions: A Reality in Malaysia. *Journal of Technical Education and Training*, 10(2)1.
- Latchem, C. 2014. Informal Learning and Non-Formal Education for Development. *International Journal of Learning for Development*. Vol. 1(1).
- Law of the Republic of Indonesia Number 23 of 2014 on Regional Government, Pub. L. No. 23 (2014). Indonesia.
- Masykur, T. 2019. Analisa Kebutuhan English for Specific Purpose untuk Pendidikan Vokasi. *Vocational and Technology (Vocatech) Journal*. Vol. 1 No. 1 (2019), 47-50. DOI: <https://doi.org/10.38038/vocatech.v1i0.9>.
- Moha, K. 2021. Anatomi Kurikulum. *Jurnal Al Urwatul Wutsqa: Kajian Penelitian Islam*. Vol. 1 No. 1 Juni (2021).
- Nofiantoro, W and Affandi, D.Y. 2018. Vocational Schools and Labour Market: Insights from Indonesia. *KnE Social Sciences / The 2nd International Conference on Vocational Higher Education (ICVHE) 2017*. Pages 625–645. DOI: 10.18502/kss.v3i11.2793.

- Sherlyl, MachMath, Jhon Wallace, & Xiahong Chi. 2009. "Problem Based Learning in Math. A tool of Developing Students " Conceptual Knowledge". The Literacy and Numeracy Secretariat available: 2016.
- Sukmadinata, N.S. 2006. *Mengajar:Metode Penelitian Pendidikan*. Bandung: PT. Rosdakarya, Sinar Baru Algesindo.
- Tanzir, M. 2019. Motivation and Satisfaction Towards Two-Year Vocational Diploma. *Jurnal Pendidikan Vokasi*. Vol.10, No 1.
- Thobroni, M. 2016. *Belajar dan Pembelajaran: Teori dan Praktik*. Yogyakarta: Ar-Ruzz Media.
- Weaver, R. R. 2005. Classroom Ornanization and Participation: College Students Perceptions. *Journal of Higher Education*, 570-601.
- Wrihatnolo, Randy R., & Dwidjowijoto, Riant Nugroho. 2007. *Manajemen Pemberdayaan: Sebuah Pengantar dan Panduan untuk Pemberdayaan Masyarakat*. PT. Elex Mudia Komputindo.
- Wrihatnolo. 2007. *Manajemen Pemberdayaan Sebuah Pengantar*. Tangerang: Efek Media Komputindo Publishing.
- Zolingen, S.J. 2002. The Role of Key Qualification in Transition from Vocational to Work. *Journal of Vocational Education Research*. Vol.27 No.2 (2002), 217-242.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).