Measurement Model for Determining the Effectiveness Military Capability Towards Society 5.0 on Seskoal

Daniel Setiawan[1(✉)], R. Madhakomala[1], and Ucu Cahyana[2]

[1] Educational Management, State University of Jakarta, Jakarta, Indonesia
danielnavy@gmail.com
[2] Mathematics and Natural Sciences, State University of Jakarta, Jakarta, Indonesia

Abstract. The Community 5.0 worldview gives chances to cooperate in different angles towards better security and prosperity for individuals. Security and solace conditions have been upset since the Covid-19 flare-up [1]. As the Navy professional level school in connected with security and guard, the Naval Command and Staff School (Seskoal) is changing in delivering Student Officers to have successful military capacities to be prepared to confront the Covid-19 episode while simultaneously understanding a general public 5.0 [2]. The exploration related on the adequacy of military capacities in professional schools, for example, Seskoal has never tried the predominant assurance which makes the best difference. The adjustment that will be estimated is connected with learning inspiration techniques and the Student Officers quality with the degree of Major and Lieutenant Colonel. The review plans to decide the impact of learning inspiration methodologies and the nature of understudy staff techniques on the adequacy of military capacities. This exploration is generally connected with the model of understudies' characteristic embroiling the component of their learning inspiration systems and individual characteristics. Specifically, the creator needs to know the relationship among the understudy highlight and the tactical capacity viability, then can give ideas to build the tactical ability adequacy that worry on e-learning technique utilizing Virtual Reality (VR) innovation in the Seskoal scopes and other professional schooling degrees. This study utilized quantitative examination instruments with Structural Equation Modeling (SEM) strategies. This study included 175 respondents from Students Officers (Pasis) as at Seskol. The aftereffects of the review utilizing Analysis of Moment Structure (AMOS) demonstrate that all exploration targets were acknowledged. This study gives proof that the essential learning inspiration have a positive impact toward the viability military capacities and the nature of understudy officials or Pasis has a beneficial outcome toward the adequacy military abilities.

Keywords: effectiveness military capabilities · quality of student officers · strategic learning motivation · vocational education

S. Sulastri et al. (Eds.): PICEMA 2021, ASSEHR 683, pp. 239–250, 2023.
https://doi.org/10.2991/978-2-494069-11-4_24

1 Introduction

In creating a Navy Officer who has a portfolio of strategic abilities, academic skills, excellent physical fitness and have the personality of a Sapta Marga (the seven principles) Indonesian soldier are needed [3], so that military capability is achieved effectively (effectiveness military capability). The Navy Command and Staff School which is the highest vocational school in the Navy [2] tasked with developing skills and potential strategic capabilities as intermediate officers with the grade of Major and Lieutenant Colonel to carry out TNI duties in War Military Operations and Non-War Military Operations. This strategic ability, which is then translated as the achievement of military capability qualification standards, must be possessed by every Student Officer during the education process until he is declared to have graduated from Seskoal.

Effectiveness requires measurement in the sense of achieving predetermined goals [4]. Besides, adequacy is connected with the capacity to complete assignments, capabilities (tasks, program exercises or missions) of an association or the like where there is no strain or pressure between its execution [5]. Military is a terminology related to the military field, and is a political tool that is prepared to deal with conflicts up to war. The military field includes military tools and all that is related to both personnel and military doctrine. Capability is understood as the potential ability or capacity of a person. Capacity is often distinguished between general capacity and special capacity. General capacity is referred to as intelligence or intelligence (intelligence) and special capacity is also known as talent (aptitude). In theory, Marcu Bucur defines effectiveness military capability as follows: manpower is an important military resource. Just with qualified and exceptionally energetic individuals can spending plans and weapon frameworks be transformed into the successful military capacities that are expected to accommodate a country security [6]. Thus, an operational definition can be drawn that the effectiveness military capability is the development of potential capabilities (portfolio) of Pasis during general military development education at Seskoal in accordance with the objectives set by educational institutions, namely the achievement of educational qualifications in the form of staff and command capabilities ready to carry out Indonesian armed forces/Indonesian Navy duties in carrying out War Military Operations (OMP) and Military Other Than War (OMSP).

Strategic learning motivation theory is the development of two-factor motivation theory (Herzberg), needs theory (Maslow), and motivation of Colquitt, Bernadin, Mosley and so on and learning theory (McMilan), national learning theory (Law No. 20/2003) which is integrated with the theory of defense management (Marcu Bucur) by paying attention to the level or level of education in military schools starting from the tactical level (ranks of enlisted officers and non-commissioned officers), technical (ranks of First Officers) and strategic (ranks of Middle and High Officers). Jason A. Colquitt, Jeffery A. Lepine, and Michael J. Wesson define motivation as an internal and external drive to do diligently in obtaining achievement, progress and having a personal life [7]. With regard to learning, in the book Research in Education, McMilan gives his theory of "Being wrong is not one size fits all" [8]. Being wrong is not a one size fits all. This is stated to tell from mistakes that give birth to motivation to act better in accordance with the goals to be achieved. From the point of view of intellectual development and motivation, it is very important for outstanding students to experience

challenges. They need to know that their thinking may be illogical or that they need to consider alternative points of view to correct or correct a thought that may be wrong. More importantly, they need to know that engaging in challenging tasks increases their knowledge and thinking. This theory is very suitable, considering that Student Officer comes from various corps and different educational experiences, especially at the rank of strategic with the level of Major and Lieutenant Colonel who always faced with dynamic tasks that cannot be separated from mistakes during the learning and training process at Seskoal. Thus, an operational definition can be drawn that strategic learning motivation is an encouragement from within (intrinsic) and from outside (extrinsic) the individual is temporary (can change) which can affect his enthusiasm in a process because he feels the functional usefulness of his existence in Seskoal educational institutions which can be directed to strategically increase the portfolio of military capabilities at the Intermediate Officer level according to the duties of the Indonesian armed forces/Indonesian navy.

According to Joseph Juran "quality as fitness for use" quality is reasonableness for use, this implies that an item or administration ought to be as per what is required or expected by clients [9]. His book entitled Total Quality Control, he said that quality is seen as a system that needs to be thoroughly controlled to be effective in integrating development, maintenance, and various improvement efforts within an organization so as to enable production and services to achieve customer satisfaction and be carried out economically. Quality in the context of education refers to the achievements achieved by students or schools at any given time. One of the factors that influence the quality of good education comes from outside the organization, namely the students. The quality of learning outcomes is strongly influenced by the elaboration of digital literacy that fully connects technological and pedagogical capabilities [10]. In this case, students at Seskoal are Student Officers obtained from the selection process for Middle-ranking Officers of Major and Lieutenant Colonel. Understudies are expected to can obtain great outcomes while doing their investigations. Therefore, individual qualities are very important for every Pasis, both at the time of recruitment and during the education process. Thus, an operational definition can be drawn that quality of student officers are Pasis who have academic scientific competence, excellent physical abilities and have the personality of Sapta Marga.

In the process of preparing Pasis, Seskoal has a teaching and learning program that includes ten components of education which include curriculum, instruction package, teaching staff or lecturers, educational staff, Student Officers, teaching aids or 'alins alongins', educational methods, evaluation, facilities and education budget. In its implementation, there are several things that are very crucial and are considered very important and need to be deepened related to learning motivation at the strategic level and the quality of the student officers self, and the curriculum related to Seskoal organizational policies in an effort to increase the effectiveness military capabilities (Indonesian Navy soldiers). Maintaining the motivation and quality of soldiers in an effort to increase the effectiveness of military capability, It is hoped that it will provide awareness (mindset) that as a soldier is always required to have and maintain the three aspects: cognitive, psycho-motor and affective aspects with excellence which in the end can be relied upon in carrying out the duties of the Indonesian armed forces/Indonesian Navy. The phenomena and problems in Seskoal are quite unique. From the literature review above,

there are similarities to the theory stated by Bucur, for that it is necessary to confirm in knowing the gap from the determination of each variable. Furthermore, the results of this confirmation are expected to be able to contribute to vocational schools within the Indonesian Navy.

This study expects to decide the learning inspiration techniques impact on the understudy staff quality toward the viability military abilities of Seskoal understudies. This exploration is cooperative quantitative examination (logical exploration), the exploration controlled utilizing an overview strategy with information investigation methods used to answer the speculation with the Structural Equation Modeling procedure. The sample in this study was 175 respondents consisting of Student Officers, Lecturers, Educators, Heads of Work Units and Seskoal Officers who were selected using random sampling with d = 0.05 with a 95% confidence level. Data analysis technique using AMOS software. The research focused on aspects of learning motivation strategies and the condition of student staff toward the effectiveness military capabilities. The consequences of the examination infer that (1) there is an immediate impact of key learning inspiration toward the viability military capacities, (2) there is an immediate impact of the nature of understudy officials toward the adequacy military abilities, (3) there is a simultaneous direct influence of strategic learning motivation and the condition of student staff toward effectiveness military capabilities.

2 Method

2.1 Types of Research

This study points first, to figure out how Strategic Learning Motivation fundamentally affects Effectiveness Military Capability. Second, to figure out how the impact of the Quality of Students Officer on the Effectiveness of Military Capability. Third, to figure out how Strategic Learning Motivation and Quality of Students Officer together altogether affect Effectiveness Military Capability. This study utilizes information investigation that altered to the factors considered and the exploration conspired. The plan worn in this study is a causality model and to look at the speculation submitted in this exploration, the scientific model worn is Stuctural Equation Modeling (SEM) which is worked through the Analysis of Moment Structure (AMOS) program.

2.2 Participants

This study included Pasis, Lecturers, Teachers, Seskoal Officials in Jakarta, and up to 175 persons from the Work Unit. Members in this research ranged in age from 33 to 56 years old and had more than 12 years of job experience. The Simple Random Sampling Technique was used to choose these respondents, which is a subset of a measurable population in which every individual in the subset has an equal chance of being picked. The investigation lasted from January through June of 2021.

2.3 Instrument

This study used instrument in the form of a questionnaire with a scale of Likert. The answers to the scale of Likert consist of: 1 (Strongly Disagree), 2 (Disagree), 3 (Quite Agree), 4 (Agree), 5 (Strongly Agree/Strongly Appropriate). Effectiveness Military Capability is measured through the following dimensions: 1). Clarity of purpose; 2). Clarity of the method of achieving goals; 3). Careful planning; 4). Implementation process according to plan; 5). Work program as a guideline for implementing activities; 6). Availability of work facilities and infrastructure; and 7). Monitoring and control system.

Indicators to be tested on the variable Strategic Learning Motivation include: 1). Physical needs; 2). Security needs; 3). Social needs; 4). The need for appreciation; and 5). Self-actualization needs. Likewise for the Quality of Students Officer variable, the indicators include: 1). Academic aspects; 2). Aspect of compatibility; and 3). Personality aspect.

2.4 Data Analysis

Information examination in this study utilizing SEM examination strategy is utilized to portray the association among factors in research isn't to plan a hypothesis, however to investigate and legitimize a model. So the primary prerequisite for utilizing SEM is to construct a speculative model comprising of an underlying model and an estimation model as a way graph in view of hypothetical defense. SEM with a bunch of measurable strategies is accepted to have the option to at the same time test a progression of connections. The relationship is fabricated comprising of one or a few free factors. Moreover, in the review, the examination of test information on the reasonableness of the model through an investigation of different rules of decency of fit [11]. Coming up next are a reasonable pointers and removed values to inspect that model can be acknowledged or dismissed, that is knowing the outcomes, to be specific:

1) Chi-square test is considered great or satisfy if the Chi-square value is low. If the chi-square value is smaller, so the design is better and the significance value is greater than the cut off value ($p > 0.05$).
2) RMSEA or The Root Mean Square Error of Approximation indicates the expected fit when the model projected in the population. The RMSEA value less than or equal to 0.08 is an index of model acceptance that displays the suitability of the model constructed on its degrees of freedom.
3) GFI or Goodness of Fit Index is a non-statistical measurement with a range of values between 0 (poor fit) to 1.0 (perfect fit). A high value indicates a "more suitable".
4) AGFI or Adjusted Goodness of Fit Index is the suggested grade of approval greater than or equal to 0.90.
5) CMIN/DF is defined as the Minimum Sample Discrepancy Function divided by the Degree of Freedom. The relative chi-square is the chi-square divided by the DF. If the corresponding chi-square values are less than 2.0 or 3.0, the indicator of model-data congruence is acceptable.
6) TLI or Tucker Lewis Index is an incremental index that compares the tested model with the basic model, where the model is 0.95 and a value close to 1 indicates a very suitable.

7) CFI (Comparative Fit Index), which close to 1, indicates the highest fit. The suggested level is CFI 0.94.

This study utilized a connection structure model, in which the model conjectures that the framework of relationship has a particular shape. The plan outline is made sense of in Fig. 1.
Information

X1: Strategic Learning Motivation

X1.1: Physical needs
X1.2: Security requirement
X1.3: Social needs
X1.4: Need for esteem, and
X1.5: Self-actualization

X2: Qualities of Student Officers

X2.1: Academic aspect,
X2.2: Equality aspect, and
X2.3: Personality aspect

Y: **Effectiveness Military Capability**

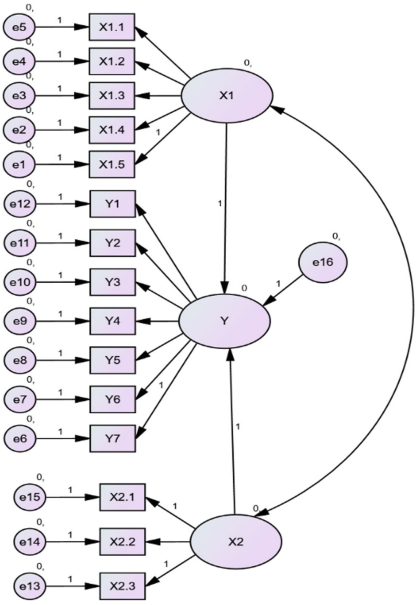

Fig. 1. Structural Model of the influence of strategic learning motivation and the quality of student officers on the effectiveness of military capabilities (Source: Researchers)

Y1: Clarity of purpose,
Y2: Clarity of the method of achieving goals,
Y3: Careful planning,
Y4: The implementation process according to the plan,
Y5: Work program as a guideline for the implementation of activities,
Y6: Availability of work facilities and infrastructure, and
Y7: Supervision and control system.

Based on output Regression Weights in Table 1, the effect of X1 toward Y obtained an estimate value of 0.798, this value can be categorized significant, while the effect of X2 toward Y obtained an estimate value of 0.701, it can be categorized significant, while the effect of X1 and X2 together on Y can be categorized as significant, because the value estimate $0.02 < 0.05$ in Fig. 2. Measurement and Structural Model. Close to figure out Standardized Regression Weights: (Group number 1 - Default model) should be visible in the accompanying table.

Table 1. Standardized Regression Weights: (Group number 1 - Default model)

Influence			Estimate
Y	<---	X1	.798
Y	<---	X2	.701
X1.5	<---	X1	.874
X1.4	<---	X1	.916
X1.3	<---	X1	.892
X1.2	<---	X1	.669
X1.1	<---	X1	.774
Y7	<---	Y	.949
Y6	<---	Y	.953
Y5	<---	Y	.981
Y4	<---	Y	.971
Y3	<---	Y	.977
Y2	<---	Y	.953
Y1	<---	Y	.936
X2.3	<---	X2	.895
X2.2	<---	X2	.858
X2.1	<---	X2	.913

(Source: Researchers)

3 Research Result

3.1 Model Fit Test (Goodness of Fit/GoF)

This study plans to give data on the reasonableness of the model by coordinating the appropriateness standards with the counting result. Likewise with way examination, a resume of estimation of the reasonableness test boundaries could be seen as in "Model Fit" a piece of the text yield in AMOS. Coming up next is a pith of the consequences of the model reasonableness beware of this SEM model, to be specific.

Table 2 serves outline information on GoF (Goodness of Fit) test outcome in the research design as attend: (1) Chi-square parameters 0.248 ≥ 0.05 show great criteria, (2) parameters Probability value 0.028 ≥ 0.025 indicates great result criteria (3) parameters GFI value 0.968 ≥ 0.090 show great result criteria (4) Parameters AGFI 0.912 ≥ 0.90 indicates favorable criteria (5) parameters CFI 0.968 ≥ 0.95 show great result criteria (6) TLI parameters 0.901 ≥ 0.90 show great criteria (8) RMSEA parameter 0.041 ≤ 0.08 show great criteria. Based on the acquisition of the model suitability test can be concluded that the SEM design can be recapitulate in Table 3 and Fig. 2.

3.2 Dominant Variable Indicator in Structural Model

From the fifteen pointers in the three examination factors (in Tables 1, 2 and 3), not every one of them meet the meaning of the stacking factor > 0.05. There is one marker variable that is less predominant, to be specific X1.2 or a sign of safety needs. Moreover, the marks of the predominant and less prevailing factors of the exploration model can be depicted as follows.

3.2.1 There are 5 Dominant Indicators in the Strategic Learning Motivation Variable (X1), They are

a) It exceeds the loading factor (>) 0.700 since X1.1 is 0.774 that implies that is absolutely required an indicator of the physical needs of Student Officers.

Table 2. Goodness of Fit Results

Parameters	Criterion	Result
chi-square	≥0.05	0.248
Probability	≥0.05	0.280
GFI	≥0.90	0.968
AGFI	≥0.90	0.912
CFI	≥0.95	0.968
TLI	≥0.90	0.901
RMSEA	≤0.08	0.041

(Source: Researchers)

Table 3. Result of Theoretical Testing Regression Weights: (Group number 1 – Default model)

			Estimate	SE	CR	P	Label
Y	<---	X1	1,000	…			
Y	<---	X2	1,000	…			
X1.5	<---	X1	1,000				
X1.4	<---	X1	1.333	.094	14,134	***	par_1
X1.3	<---	X1	.934	.069	13,480	***	par_2
X1.2	<---	X1	.853	.103	8.255	***	par_3
X1.1	<---	X1	1.040	.101	10,256	***	par_4
Y7	<---	Y	1,000				
Y6	<---	Y	.835	.054	15,453	***	par_5
Y5	<---	Y	.822	.044	18,693	***	par_6
Y4	<---	Y	.902	.052	17,391	***	par_7
Y3	<---	Y	.774	.043	18,089	***	par_8
Y2	<---	Y	.732	.047	15.525	***	par_9
Y1	<---	Y	.675	.048	14,084	***	par_10
X2.3	<---	X2	1,000				
X2.2	<---	X2	1.133	.078	14,435	***	par_11
X2.1	<---	X2	1,000				

(Source: Researchers)

b) It is below the loading factor (>) 0.700 since X1.2 is 0.669, which implies that is not absolutely required an indicator of security needs from Student Officers.
c) It exceeds the loading factor (>) of 0.700 since X1.3 is 0.892, it implies meaning that it is absolutely necessary to have indicators of social needs from Student Officers.
d) It outpaces the loading factor (>) 0.700 since X1.4 is 0.916, which implies meaning that an indicator of the need for appreciation to Student Officers is absolutely necessary.
e) It outpaces the loading factor (>) 0.700 since X1.5 is 0.874, which implies that an indicator of the need for self-actualization of Student Officers is absolutely necessary.

3.2.2 On the Variable Quality of Student Officers with 3 Indicators, the Dominant Indicators are

a) X2.1 achieves 0.913 implies that it outpaces the loading factor (>) 0.700. It indicates that it is absolutely required for an indicator of the academic aspect of Student Officers.
b) X2.2 achieves 0.858 implies that it outpaces the loading factor (>) 0.700. It indicates that it is absolutely required for an indicator of the compatibility aspect of Student Officers.

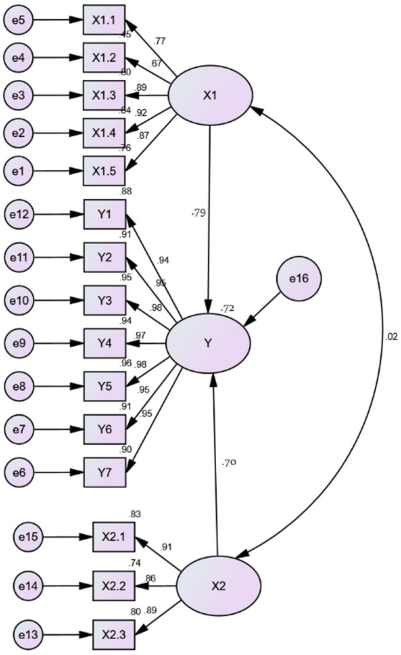

Fig. 2. Measurement and Structural Model (Source: Researchers).

c) X2.3 achieve 0.895 implies that it outpaces the loading factor (>) 0.700. It indicates absolutely required to have an indicator of personality aspects from Student Officers

3.2.3 The Effect of Strategic Learning Motivation or the Student Officers Quality on the Military Ability Effectiveness Variable, Provides Data That

a) X1 is 0.798, which imply below the loading factor (>) 0.700, meaning that the strategic learning motivation variable does have a significant effect on the effectiveness of military capabilities.
b) X2 is 0.701 which imply below the loading factor (>) 0.700, meaning that the quality of student officers does have a significant effect on the effectiveness of military capabilities

4 Recommendation

This article provides several recommendations to Seskoal as the Navy highest school that is responsible for producing officers who have military capabilities to be ready to do their duties. The state is required to always innovate by involving experts outside the Navy in opening up insights from a defense perspective. Second, with regard to the quality of the Pasis, Seskoal should pay attention to the framework of thinking formulated by Joseph Juran stating "quality as fitness for use" and personality towards the candidate Pasis really qualified. The organizational needs in question can be adapted to research

results that are relevant to current conditions, for example the quality of Pasis during the Covid-19 pandemic requires better technology-based learning (TB learning) in the Seskoal environment [12, 13]. Third, related to the effectiveness of military capabilities, there can be adjustments to the mechanism for the relationship between military demand (MD) and military supply (MS) in the development of TNI personnel.

5 Conclusion

In view of the consequences of information handling portrayed above, it was observed that there was a positive impact of learning inspiration techniques and the understudy officials quality on the viability of military capacities. Further research will be more comprehensive with innovation and the involvement of other parties, which are expected to be able to improve military capabilities in dealing with various kinds of threats. The innovation in question can be in the form of elaboration of digital literacy that connects technological and pedagogical mastery skills in improving learning results in the three domains which consist of attitudes, skills and knowledge. The best option for Seskoal is to seek new ways of continuous learning and training in dealing with any changing threats. The new strategy can be as another calculated model for creating academic capabilities that is established in educational information, intelligent capacities, the ability to understand anyone on a deeper level and informative correspondence designs.

Corresponding to the learning inspiration systems and the understudies quality in fulfilling the needs of War Military Operations and Military Operations Other than War, there are still chances to direct research connected with the force and association of specialists outside the Navy and use innovation based learning in it [12, 13]. It also needs attention, especially with regard to social needs between lecturers and students as well as between students by using a socio technology approach that is in accordance with the needs of the school [14, 15].

The final part relates to the effectiveness of military capabilities entering retirement, there is still an opportunity to conduct research on psychological adjustment capabilities in civil society.

Acknowledgment. Deepest gratitude to the Seskoal Staf, Student Officers, Professor R. Madhakomala, Professor Ucu Cahyana, Dr. Paulus Basuki KS, Dr. Line and other parties who indirectly support this research.

References

1. Agus, S. (2020). *Ekonomi Pertahanan Mengahadapi Perang Generasi Keenam*
2. Seskoal. (2019). Kep_118 Tentang Politeknik Angkatan Laut Sebagai Penyelenggara Pendidikan Vokasi di Lingkungan TNI Angkatan Laut.
3. Seskoal. (2018). Kep_710 Tentang Penetapan Visi, Misi dan Tujuan Prodi Magister Strategi Operasi Laut Seskoal.
4. Daniarsyah, D. (2019). Efektivitas Pelaksanaan Kebijakan Program Kartu Kusuka Pada Kementerian Kelautan Dan Perikanan. *Journal of Indonesian Public Administration Government Study, 3*(2), 628–643.

5. Witartih, A. (2019). Perencanaan Strategis Dan Koordinasi Sebagai Determinan Dalam Mencapai Efektivitas Program Adipura Di Kota Soreang Kabupaten Bandung. *Jurnal Ilmiah Magister Ilmu Administrasi*, *13*(1).
6. Marcu, H. B., Fluri, P., & Tagarev, T. (2009). *Defence management - an introduction.*
7. Leimena, J. T., Zulaikha, S., & Santosa, H. (2020). Pengaruh Gaya Kepemimpinan Kepala Sekolah Dan Motivasi Terhadap Kinerja Guru Di SMK Negeri Kota Ambon Provinsi Maluku. *Jurnal Visipena, 11*(2), 427–441.
8. McMillan (2017). Using students' assessment mistakes and learning deficits to enhance motivation and learning. Accessed May 2, 2021, from https://books.google.co.id/books?hl=id&lr=&id=Z9wrDwAAQBAJ&oi=fnd&pg=PT10&dq=mcmillan+j.h.+(2016).+fundamentals+of+educational+research+7th+ed.+boston+ma+pearson&ots=UBRsokhe2X&sig=rSZTgUhvKaM6ppNB8FrRiV4wxik&redir_esc=y#v=onepage&q&f=false
9. Rif'an, A. (2018). Quality dalam Prespektif Pendidikan Islam. *Journal PIWULANG 1*(1), 19–32.
10. Susanto, R., Rachmadtullah, R., & Rachbini, W. (2020). Technological and pedagogical models: Analysis of factors and measurement of learning outcomes in education. *Journal of Ethnic and Cultural Studies, 7*(2), 1–14. https://doi.org/10.29333/ejecs/311
11. Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures, *8*(2), 23–74.
12. Herlina, H., Widodo, S. E., & Madhakomala, R. (2019). Schools and communities: A partnership to enhance the quality of alternative education in Indonesia. *Int. e-Journal Educational Studies, 4*(7), 111–121. https://doi.org/10.31458/iejes.615697
13. Nabilah, S., Madhakomala, R., & Matin. (2019). Sustainability challenges: An analysis of the effectiveness of the assistance program for vocational schools, *337*(Picema 2018), 167–173. https://doi.org/10.2991/picema-18.2019.34
14. Cahyana, U., Purwanto, A., & Adawiyah, Y. M. H. (2020). Development of mobile learning based on socio technology approaches in reduction and oxidation, *491*(Ijcah), 46–51. https://doi.org/10.2991/assehr.k.201201.008
15. Cahyana, U., Yusmaniar, Y., & Zahari, P. A. (2019). Development of mobile learning on acid and base to improve student performance. *Journal of Physics: Conference Series 1402*(5). https://doi.org/10.1088/1742-6596/1402/5/055062