



## Research Article

© 2020 Sobandi et al..  
This is an open access article licensed under the Creative Commons  
Attribution-NonCommercial 4.0 International License  
(<https://creativecommons.org/licenses/by-nc/4.0/>)

# Learning Facilities: Can It Improve the Vocational School Productivity?

A. Sobandi\*

Tjutju Yuniarsih

Rasto

Adman

*Office Management Education Study Program,  
Faculty of Economic and Business Education,  
Universitas Pendidikan Indonesia, Bandung, Indonesia  
\*Corresponding Author*

DOI: <https://doi.org/10.36941/jesr-2020-0074>

## Abstract

*This research aims to investigate the effect of learning facilities on the productivity of vocational school in the area of business and management expertise in Bandung. In this research is used explanatory survey method using ordinal scale questionnaire. The total respondents are 1,236 productive teachers from 40 vocational schools in the area of business and management expertise in Bandung. The data collection technique used questionnaire and analyzed by using regression. The results show that learning facilities have positive and significant effect on the vocational school productivity in the area of students' business and management expertise in Bandung. To improve the vocational school productivity in the area of business and management expertise in Bandung, the suggested recommendation is that principal have to optimize more the learning facilities.*

**Keywords:** *learning facilities, school productivity, vocational program*

## 1. Introduction

A graduate of education institution is vital component who will decide the advancement of a nation. School is a formal education institution has function to educate and drive the student's potency, so it can generate a qualified and competitive human resource. The quality of human resources which is qualified and capable to advance the nation becomes the expectation of all parties. Therefore, to answer that expectation and challenge need more efforts for school to find the way to continually improve facing the various challenges and threats to reach the high category in school productivity. Facilities are one of the factors that influence academic performance in the school system (Akinfolarin, 2008; Akinsolu, 2004, Akomolafe & Adesua, 2016). School facility is one of the parameters used to measure the effectiveness of a school system (Alimi et al., 2012). School facilities that have the potential to improve learning that affect school productivity (O'Neill, & Oates, 2001; Gbollie & Keamu, 2017). Learning facilities have positive and significant effect on the vocational school productivity in the area of business and management expertise in Bandung. The suggested recommendation is that principal have to optimize more the learning facilities.

School as a system has component related and affected to each other such as input, process, and output. The component in that system will decide the success of school's aim achievement. Among the linkages of input, process, and output, school productivity becomes one of vital performance components. School productivity is vital because it is the main requirement for a qualified education (De Witte et al., 2014; Witte & Lopez-Torres, 2017; Uline & Tschannen-Moran, 2008). To fulfill society's expectation, school have to be capable to face the global challenge by equipping the alumnus with the capability which can be used when they are in society and working realm. Formal education institution which functions in preparing students to have spirit and adaptation ability in working is vocational school. As stated in Law of National Education System No. 20 of 2013 that vocational school is secondary education which prepares students particularly to work in certain area in which their education is based on the expertise development. Vocational school should develop students becoming more creative, having capability to follow the science and technology advancement, and mastering the competency which can be a provision to be utilized in work (Ansah & Ernest, 2013; Mulder et al, 2007). Vocational school not only develops cognitive ability, more than that it fosters the students' mental which integrates into practical and theoretical capability or the compilation of both. Hence, vocational school can bridge the medium level problematic of working in Indonesia.

However, the fact, vocational school productivity is not optimal. The study result stated by Thomas (2013) that Indonesia education realm faced four main crisis such as quality, external relevance, elitism, and management. In particular, external relevance of vocational school still becomes problem that the total unemployment of vocational school graduate is still high. The high rise of open unemployment number from vocational school graduate reported by Central Bureau of Statistics (2015) reached at 1,258,201 people per August 2013 or it increased about 191,192 idlers compared with the same period in the previous year. In West Java in February 2015, the elementary school alumnus or lower placed had the highest number unemployment at 9,989,606 people (37.23%). Then, the idlers form secondary education (senior high school and vocational school) was 5,275,046 people (19.66%). The working people from higher education graduate was only 2,209,201 people (8.23%). Besides, the open unemployment in the level of secondary education in West Java was high at 11.54% for senior high school alumnus and 11.67% for vocational school alumnus. In contrast, for the higher education level, the open unemployment was only 4.71%. The data show that productivity in several vocational schools in Bandung on the area of business and management expertise are not optimal. There are many graduates who cannot be absorbed by business or industrial realm because the quality of graduate competency is still not optimal which one of indicators is school productivity.

Globalization era demands the high school productivity to survive in the tight competition. The decrease of school productivity hampers the achievement of Human Development Index (HDI). As stated by UNDP (2014), Indonesia was in 108<sup>th</sup> from 187 states, under Singapore in 9<sup>th</sup>, Brunei in 30<sup>th</sup>, Malaysia in 62<sup>nd</sup>, and Thailand in 89<sup>th</sup>. It can be seen also in global competitiveness index, based on The Global World Competitiveness Report 2012-2014 reported by Schwab (2014) was in 50<sup>th</sup> in 2012-2013 and Indonesia rank became 38<sup>th</sup> in 2013-2014. Despite that fact, that rank was still under the other South East Asian Countries such as Singapore, Brunei, Malaysia and Thailand (Table 1).

**Table 1.** The Global World Competitiveness Report 2012-2014

Country/Economy	GCI 2012-2013		GCI 2013-2014	
	Rank	Score	Rank	Change
Oman	33	4.64	32	-1
Chile	34	4.61	33	-1
Spain	35	4.57	36	1
Kuwait	36	4.56	37	1
Thailand	37	4.54	38	1
Indonesia	38	4.53	50	12

**Source:** The Global World Competitiveness Report 2012-2014

The human development index and global competitiveness index shows the condition that the quality of human resources is low. That fact becomes a big problem for Indonesian in globalization competitive era because the human resources quality really determines the competitiveness in globalization era. If Indonesia has the eager to have role in global competition, the improvement of national education quality have to be a serious concern by implementing the qualified education system. Therefore, the improvement of human resources quality has to comprehensively include aspect of intellectual, emotional, spiritual, creativity, moral, responsibility and other aspects.

Based on the explained condition, it certainly needs to be done various improvement efforts which one of those is through the improvement of education management towards the increase of school quality and it is directed to be productive school in order to generate the qualified human resources. Learning facilities give the improvement of education quality through school productivity. The availability and optimal utilization of learning facilities can well support the learning activity. School has compulsory to provide all facilities which support the curriculum implementation such as laboratory, library, sport center, art and other facilities. Gie (2005) emphasize the availability of adequate learning facilities such as a place to learn, tools, time and the others. Glen (2006) shows the differences were between 14 percentile rank points-17 percentile rank points. Therefore, basically what we call as learning facilities is all kinds which can give simplicity and continuity in learning process. It is expected that by the availability of adequate learning facilities, learning process can be well conducted in the process of material delivery.

## 2. Research Method

### 2.1 Research Design

This research uses survey method using quantitative approach on certain representative population or sampel.

### 2.2 Sampling

The population in this study were all vocational secondary schools in the field of business and management expertise in Bandung, which numbered 66. The sample size in this study was determined by the formula of Slovin (in Riduwan, 2008), so that a minimum sample size was obtained 40 business and management vocational high schools.

### 2.3 Variable Measurement

As for the dimensions becoming focus in this research are as following. The variable of learning facilities in this research are all facilities which are directly used in learning to achieve the determined learning goal. In this research, the dimensions of measured learning facilities are 1) classrooms, 2) teaching aid, 3) laboratory and 4) library (Djamarah, 2005; Fry et al, 2008; Glen, 2013). The dimension of classroom was measured by 3 indicators of classroom capacity (sub indicator: classroom capacity is filled in according to the total students), completeness (LCD and computer can be utilized in every classroom), and utilization (classroom equipped by LCD and computer can be used for learning process). The dimension of teaching aid was measured by 4 indicators of completeness (sub indicator: the teaching aid is available and complete according the learning goal), and usefulness (the teaching aid can be used for every learning process), utilization (the teaching aid can be utilized for every learning process), and maintenance (the teaching aid can be regularly maintained). The dimension of laboratory was measured by 4 items of laboratory capacity (sub indicator: laboratory capacity is related with the student ratio), tools/materials completeness (the lab tools/materials are complete according to the learning goal), tools/materials utilization (the lab tools/materials can be utilized for every learning process), and tools/materials maintenance (the lab tools/materials which

are directly used in learning process are regularly maintained). Lastly, the dimension of library was measured by 4 indicators, which are library capacity (sub indicator: library capacity is related with the student ratio), book completeness (the library book is complete according to curriculum need), library book utilization (library book can be utilized by every student), and library book maintenance (library book directly used in learning process is regularly maintained).

The variable of productivity is about how much output can be produced per unit of input. School productivity is whole process of planning, arrangement and utilizing the resources to manifest the school goal. School productivity is school capability in maximally performing its function in economic, political, social, cultural as well as educational function. One of school social functions is a media for student to adapt with the society's lives. School economical function is to give the provision for students in order for them to perform economic activity, so the students have prosperous life. One of school political functions is school as mode for student to acquire knowledge regarding rights and obligations as citizen. School cultural function is school as mode for students to transmit and transform the culture while education function is school as mode for students to process maturity and form the character for this current time and in the future. School productivity in this research can be observed from three dimensions such as the administrator production function, the psychological production function, and the economical production function (Thomas, 1971; Hoy & Miskel, 2008, Mali, 1978). The dimension of administrator production function was measured by 6 indicators which are (1) quality of teaching (with sub indicators of planning the learning according to the curriculum need; conducting learning according to curriculum need; conducting learning evaluation according to curriculum need), (2) the smoothness of learning service (conducting learning according to schedule; the change in learning schedule is previously done), (3) teacher service on students (giving learning service according to students' need; giving learning service outside working hour; guidance service is conducted on working hour), (4) student satisfactory (giving concern to teachers' need; giving guidance to the students), (5) classroom convenience (giving concern on the classroom convenience; equipping the classroom with learning tools), (6) the use of school facilities by students (giving simplicity to use school facilities; school facilities can be used outside school time). The dimension of psychological production function was measured by 3 indicators which are (1) service function in changing students' cognitive (with sub indicators of learning service is directed on the improvement of students' knowledge; learning service is directed on students' academic achievement), (2) service function in changing students' character (learning service is directed on the creativity change according to students' knowledge; learning service is directed on the students' character change in loving their science), (3) service function in changing students' skill (learning service is directed on the skill mastering according to students' knowledge; learning service is directed on skill mastering in working life). The dimension of economical production function was measured by 3 indicators which are (1) graduates absorption (with sub-indicators of the graduates are absorbed by working realm more than 80%; graduates work according to their expertise; regularly observing the graduates), (2) the graduates continue to higher education ( every year is accepted in higher education), (3) students' academic achievement (the average score of national examination is more than the national average score; students' academic and non-academic achievement shows the improvement)

#### 2.4 Data Analysis

The research process is inductively in which to answer the problem formulation is used concept or theory in order to formulate the research hypothesis. That hypothesis is subsequently examined through field data collection using research instrument. The collected data from the field is analyzed using descriptive and inferential statistics in order to conclude the formulated hypothesis can be proven or not. The quantitative research is conducted using random sample collection technique, so the conclusion can be generalized.

### 3. Results

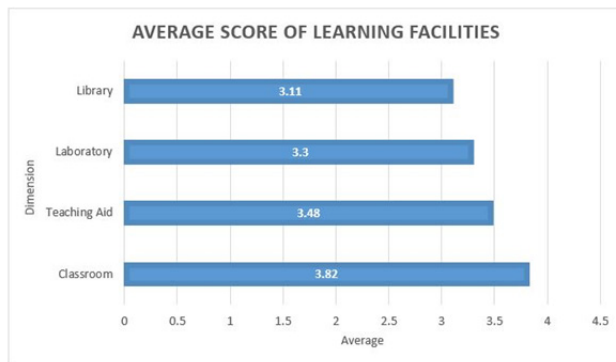
#### 3.1 Learning Facilities

Learning facilities is all facilities directly used in learning to achieve the planned learning goal. Description of this variable is obtained based on average score of respondents' answer perception on learning facilities in vocational school in the area of business and management expertise in Bandung using 13 questioners. The result from respondents' feedback based on average score of achievement, presentation, and category on learning facilities is shown in Table 2.

**Table 2.** Recapitulation of Respondents' Feedback on Learning Facilities Variable

Dimension	Average	Category
Classroom	3.82	High
Teaching Aid	3.48	High
Laboratory	3.30	Medium
Library	3.11	Medium
Mean	3.43	High

Respondents' feedback on learning facilities variable on Table 2 showed that average score at 3.43. Referring to interpretation scale table, the average score is on the range of 3.40- 4.19. This result shows the learning facilities on vocational school in the area of business and management expertise in Bandung is perceived by respondents in high category. Learning facilities is measured through four dimensions as following: (1) classroom; (2) teaching aid; (3) laboratory, and (4) library. The average score from each dimension shows the attainment level of learning facilities shown on Figure 1.



**Figure 1.** Average Score of Learning Facilities

Figure 1 shows that classroom dimension has the highest average score at 3.82 while library dimension has the lowest average score at 3.11. This result shows school has facilitated classroom which can be well utilized supported by classroom capacity, classroom completeness, and classroom utilization. However, the learning facilities which have not been optimal both in terms of completeness and management need more serious attention for school to consider that the benefit of library well contributes on students' learning process, so it is expected learning process can be well implemented by the improvement of library completeness in the school.

Classroom dimension on learning facilities is the completeness given by school to student in form of room functioning as place for study in the learning process activity. The average score of

respondents' feedbacks for classroom dimension is 3.82. If it is consulted using interpretation scale, that score is in the range of 3.40-4.19. It shows respondents perception towards classroom dimension on learning facilities is in high category. It means vocational school in Bandung has provided sufficient classroom for learning process in the school. The classroom availability on learning facilities is showed by the classroom capacity, classroom completeness, and classroom utilization.

Teaching aid dimension on learning facilities is all of things which can be used to deliver the message and stimulate students' mind, feeling, attention, and will, so it encourages the learning process in the students. The average score of respondents' feedbacks for teaching aid is 3.48. If it is consulted using interpretation scale, that score is in the range of 3.40-4.19. It shows respondents perception towards teaching aid dimension on learning facilities is in high category. It means vocational school in the area of business and management expertise in Bandung has facilitated adequate teaching aid to support the students' learning process. The completeness of learning facilities in this term includes completeness, usefulness, utilization and maintenance of teaching aid.

Laboratory dimension on learning facilities is a place in which is conducted learning process to produce something. The average score of respondents' feedbacks for laboratory dimension is 3.30. If it is consulted using interpretation scale, that score is in the range of 2.60-3.39. It shows respondents perception towards laboratory dimension on learning facilities is in medium category. It means the laboratory in vocational school in the area of business and management expertise in Bandung is adequate however it needs laboratory improvement in order the learning can be effectively conducted. The learning facilities in this term includes laboratory capacity, tools/materials completeness, tool/materials utilization, and tools/materials maintenance.

Library dimension on learning facilities is one of work units in the form of mediums to systematically collect, save, manage, and arrange the collection of library material to be used by school member as service and information resources as well as learning medium. The average score of respondents' feedbacks for library dimension is 3.11. If it is consulted using interpretation scale, that score is in the range of 2.60-3.39. It shows respondents perception towards library dimension on learning facilities is in medium category. It means vocational school in the area of business and management expertise in Bandung has adequate library however it needs completeness addition and source books utilization to support the learning activity in order to be effective and efficient includes library capacity, the book completeness, the library book utilization, and the library book maintenance.

### 3.2 School Productivity

School productivity is the whole process from planning, developing and maintenance of resource to manifest the school goal. School productivity is the school capability in implementing every academic activity according to its function such as economic, political, social, and cultural as well as education function. This variable description is obtained based on the average score of respondents' feedback perception on the productivity of vocational school in Bandung using 27 questioners. The result from respondents' feedback based on average score of achievement, presentation, and category on school productivity is shown in Table 3.

**Table 3.** Recapitulation of Respondents' Feedback on School Productivity Variable

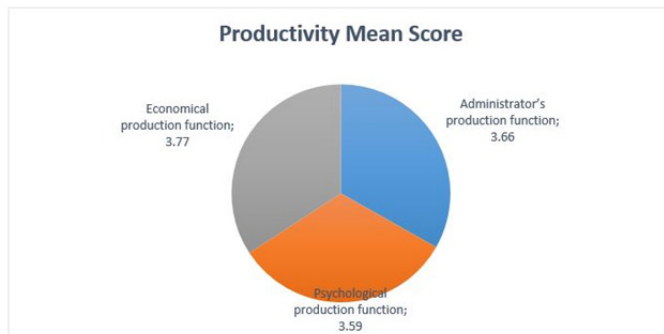
Dimension	Average	Category
The administrator production function	3.66	High
The psychological production function	3.59	High
The economical production function	3.77	High
Mean	3.67	High

Respondents' feedback on productivity variable showed average score at 3.67. Referring to interpretation scale table, the average score respondents' is on the range 3.40-4.19. This result shows

the learning facilities in vocational school in the area of business and management expertise in Bandung is perceived by respondents in high category. If it is compared with previous phenomenon, it is contrast with vocational school productivity which has not been optimal yet. The researcher looks at several factors affect that condition. For instance, data of vocational school graduate absorption phenomenon in several vocational schools in the area of business and management expertise in Bandung, after confirmed with the related school party, is mostly alumna do not report their status after graduate from vocational school in the area of business and management expertise. Hence, school party create graduate's absorption presentation based on graduate fraction who report their status. It affects the absorption of vocational school graduate in the area of business and management expertise is not wholly detected. Besides, the described phenomenon is obtained for field data while productivity description in data processing is obtained based on teacher perception as respondent. Therefore, it occurs the difference between data in the field and the obtained research result.

The absorption of graduate has not been optimal yet in the phenomenon which is suspected not only affected by the graduate low competency but also affected by the limited available jobs. Mostly vocational school graduate in the area of business and management expertise who should work choose to continue in higher education to fulfill the work demands which require the job seeker has at least bachelor certificate. That requirement makes vocational school graduate is less confidence in the working competition, so continuing to higher education is believed as the best solution.

School productivity is measured through three dimensions as following: (1) administrator's production function, (2) the psychological production function, and (3) the economical production function. The average score from each dimension shows the attainment level of school productivity shown on Figure 2.



**Figure 2.** Attainment level graph of vocational school Productivity in the area of business and management expertise in Bandung

Figure 2 shows that economic production function dimension has the highest average score at 3.77 while psychological production function dimension has the lowest average score at 3.59. This result can be concluded vocational school in the area of business and management expertise in Bandung can implement education and skill program according to the work need and demand, so school can equip its graduates to be ready for working in business and industrial realm which in the end graduates can gain salary that exceeds education cost which was issued while studying in the school. However, the other school parties need to improve the service in behavioral function referring on service function which can change student's character in cognitive, skill, and manner.

Administrator production function dimension on school productivity is managerial function related with various services for the need of students and teachers. This dimension includes quality of teaching, the smoothness of learning service, teacher service on students, student satisfactory,

classroom convenience, and the use of school facilities by students. The average score of respondents' feedbacks for Administrator production function dimension is 3.66. If it is consulted using interpretation scale, that score is in the range of 3.40-4.19. It shows respondents perception towards Administrator production function dimension on school productivity is in high category. Therefore, it can be concluded school can implement managerial function which closely relates with various services on school activity. School productivity in administrator production function dimension is pointed by vocational school in the area of business and management expertise in Bandung by facilitating various learning facilities considered as input in this dimension such as learning facilities and infrastructures which is classroom, learning tools, media and teaching aid both in the class and in the laboratory, learning material and other need, consumable things, and time for teacher used for teaching the student.

Psychological production function dimension is behavioral function having output which refers on the service function. This function can change students' characteristic in cognitive, skill and manner. This dimension includes the service function in changing students' cognitive, manner and skill. The average score of respondents' feedbacks for psychological production function dimension is 3.59. If it is consulted using interpretation scale, that score is in the range of 3.40-4.19. It shows respondents perception towards psychological production function dimension on school productivity is in high category. Based on that respondent's perception, it means vocational school in the area of business and management expertise in Bandung has implemented service function which can change students' character in cognitive, skill and manner. It is showed by school service by generating character change, directing and forming character, motivation, esthetic improvement, positive knowledge change, science and technology, critical thinking deepening and students' skill improvement.

Economic production function dimension on school productivity is an economical function which the output can be identified as graduates who have high competency. If they work, they can gain high salary which exceeds education cost that they have spent in higher education. This dimension includes graduate absorption, the graduates who continue to higher education and students' academic achievement. The average score of respondents' feedbacks for economical production function dimension is 3.77. If it is consulted using interpretation scale, that score is in the range of 3.40-4.19. It shows respondents perception towards economical production function dimension on school productivity is in high category. Based on that perception, it means vocational school in the area of business and management expertise in Bandung can equip the graduate ready to work in business and industrial realm. That thing shows from the graduates' ability in academic and can be easily accepted in working life according to their relevant expertise. The research result relating with school productivity in fact is different with the school productivity which is explained in the background. This is indicated that phenomenon relating with the productivity is based on the real number from the field obtained by researcher while the research result stating high in school productivity is obtained from teacher perception. Therefore, there are differences between the phenomenon from the research result perceived by the teachers. Based on that, researcher can conclude the related problem regarding productivity is school quality which is not productive, so it does not produce the output which relates with the expected competency. It affects the number of unemployment is high or jobs is not available, so the unemployment number is still high even though the graduate absorption has reached the fixed standard competency.

#### **4. Discussion**

Empirical findings on the research problem of how learning facilities affects towards school productivity on vocational school in the area of business and management expertise based on field data which has been processed using simple regression show that the learning facilities positively and significantly affect on school productivity.

The result shows learning facilities have significant impact on school productivity. This result



identifies school productivity is affected by learning facilities. The learning facilities variable are 1) classroom, 2) teaching aid, 3) laboratory, and 4) library (Djamarah, 2005; Fry et al, 2008; Glen, 2013). In general, teacher as respondent in this research assumes learning facilities affect on school productivity. Learning facilities is one of supporters in the creation of an effective learning process. This helps teacher to well deliver the material content, so student can easily understand the message delivered by the teacher. Learning facilities encourage student to be more creative and innovative in conducting learning process (O'Neill, & Oates, 2001). The role of learning facilities is the supporter in creating effective learning. School productivity can be accelerated if those learning facilities support on learning activity in the classroom or outside the classroom.

This tested hypothesis result also indicates school productivity in the school is also decided by learning facilities. The higher quality of learning facilities variable will improve the quality of school productivity (Suleman & Hussain, 2014). In empirical, based on the field data which has been processed using simple regression, the test of fourth hypothesis shows that learning facilities affect on school productivity positively and significantly. That result shows learning facilities have significant effect.

Learning facilities are all things which can ease and smooth the implementation of efforts (Ekundayo, 2012; Amboningtyas, 2018). Learning facilities can improve the student learning process (O'Brennan et al., 2014; Walberg, 1984; Olutola, 1998) such as (1) it more attracts student attention, (2) the meaning of learning material is more clearly, (3) teaching method will be varied, (4) students more conduct activity learning such as observing, performing, demonstrating, etc. (5) the level of human thinking follows the development stages started from concrete thinking to abstract thinking and started from simple thinking to complex thinking. The use of education infrastructure really relates with that thinking steps. Based on the explanation above regarding learning facilities, it can strengthen the learning facilities position as supporting medium to the creation of effective learning process. The learning process effectiveness improves the quality of graduates and implicates on the improvement of school productivity. Regarding learning facilities, it can be concluded research result and empirical fact collected from field are related with theory, expert opinion, and previous research result which states school productivity is significantly affected by learning facilities.

## 5. Conclusion

Learning facilities in vocational school in the area of business and management expertise in Bandung has not been optimal yet on library aspect. This illustrates school has facilitated classroom which can be well utilized supported by classroom capacity, completeness and utilization. However, the un-optimal learning facilities in library aspect in terms of completeness or maintenance needs more serious concern from school considering the benefit of library really well contributes on students' learning process, so it is expected the learning process can be well implemented by the improvement of library completeness in the school. Learning facilities in vocational school in the area of business and management expertise in Bandung are generally in good condition by the completeness and usefulness of the used facilities in effective and efficient learning process.

Vocational school productivity in the area of business and management expertise has not been optimal yet on the psychological function. It can be interpreted vocational school in the area of business and management expertise in Bandung can apply education and skill program relating with the need and demand of working life, so school can equip the graduates ready to work in business and industrial realm which in the end graduates can gain salary that exceeds education cost which was issued while studying in the school. However, the other school parties have not fully given the best service in behavioral function referring to service function which can change students' character in cognitive, skill and managerial expertise. Learning facilities affect the school productivity positively and significantly. This indicates school productivity is determined by learning facilities. Therefore, the higher quality of learning facilities, the higher school productivity as well.

## References

- Akinfolarin, C. A. (2008). *Resource utilization in Vocational and Technical Education in Colleges of Education in South-West Nigeria*. Unpublished Ph.D Thesis. University of Ado-Ekiti, Ado-Ekiti.
- Akinsolu, R. A. (2004). Provision and management of facilities in Nigerian primary schools, In EO Fagbemiye, JB Babalola, M. Fabunmi and Ayeni (eds). *Management of Primary and Secondary Education in Nigeria*. NAEAP publications.
- Akomolafe, C. O., & Adesua, V. O. (2016). The Impact of Physical Facilities on Students' Level of Motivation and Academic Performance in Senior Secondary Schools in South West Nigeria. *Journal of Education and Practice*, 7(4), 38-42.
- Alimi, O. S., Ehinola, G. B., & Alabi, F. O. (2012). School Types, Facilities and Academic Performance of Students in Senior Secondary Schools in Ondo State Nigeria. *International Education Studies*, 5(3), 44-48.
- Amboningtyas, D. (2018). Influence of learning discipline, methods of teaching teachers and school facilities on improving student achievement in SMK Negeri 1 Pringapus. *Journal of Management*, 4(4).
- Ansah, S. K., & Ernest, K. (2013). Technical and vocational education and training in Ghana: a tool for skill acquisition and industrial development. *Journal of Education and Practice*, 4(16), 172-180.
- Central Bureau of Statistics. (2015). Official News of Statistics of West Java Province No. 31/03/32/XVII, May 5, 2015
- De Witte, K., Geys, B., & Solondz, C. (2014). Public expenditures, educational outcomes and grade inflation: Theory and evidence from a policy intervention in the Netherlands. *Economics of Education Review*, 40, 152-166.
- Djamarah. (2005). *Psikologi Belajar*. Jakarta: Rineka Cipta.
- Ekundayo, H. T. (2012). School facilities as correlates of students' achievement in the affective and psychomotor domains of learning. *European scientific journal*, 8(6), 208-215.
- Fry, H., Ketteridge, S., & Marshall, S. (2008). *A handbook for teaching and learning in higher education: Enhancing academic practice*. Routledge.
- Gbollie, C., & Keamu, H. P. (2017). Student academic performance: The role of motivation, strategies, and perceived factors hindering Liberian junior and senior high school students learning. *Education Research International*, 2017, 1-11.
- Gie, T.L. (2005). *Cara Belajar yang Efisien*. Yogyakarta: Liberty.
- Glen I. E. (2006). *School Facility Conditions and Student Academic Achievement*. Los Angeles: UCLA Institute for Democracy, Education, and Access.
- Glen I. E. (2013). *Planning Educational Facilities*. Rowman & Littlefield Education.
- Hoy, W. K. & Miskel, C. G. (2008). *Educational Administration Theory, Research, and Practice 6th ed*. Singapore: McGraw-Hill Co.
- Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System
- Mali, P. (1978). *Improving Total Productivity; MBO Strategy for Business, Government, and Non profit Organization*. New York: John Wiley & Sons.
- Mulder, M., Weigel, T., & Collins, K. (2007). The concept of competence in the development of vocational education and training in selected EU member states: a critical analysis. *Journal of Vocational Education & Training*, 59(1), 67-88.
- O'Brennan, L. M., Bradshaw, C. P., & Furlong, M. J. (2014). Influence of classroom and school climate on teacher perceptions of student problem behavior. *School mental health*, 6(2), 125-136.
- Olutola, A.D. (1998). Educational Facilities and Student Performance in WASC Examination. *Journal of Educational Management* 1(1), 17-25.
- O'Neill, D. J., & Oates, A. D. (2001). The impact of school facilities on student achievement, behavior, attendance, and teacher turnover rate in Central Texas middle schools. *Educational Facility Planner*, 36(3), 14-22.
- Riduwan. (2008). *Dasar-dasar Statistika*. Bandung: Alfabeta.
- Schwab, K. (2014). *The Global Competitiveness Report 2012-2014*. World Economic Forum.
- Suleman, Q., & Hussain, I. (2014). Effects of classroom physical environment on the academic achievement scores of secondary school students in kohat division, Pakistan. *International Journal of Learning & Development*, 4(1), 71-82.
- Thomas, J. A. (1971). *The Productive School - A System Analysis Approach Educational Administration*. New York: John Wiley & Sons Inc.
- Thomas, P. (2013). Faktor Determinan Produktivitas Sekolah. *Jurnal Penelitian dan Evaluasi Pendidikan*, 17(1), 55-71.
- Uline, C., & Tschannen-Moran, M. (2008). The walls speak: The interplay of quality facilities, school climate, and student achievement. *Journal of educational administration*, 46(1), 55-73.
- UNDP. (2014). *Human Development Index 2014*. Retrieved Dec 5, 2014 from <http://www.undp.org/content/undp/en/home/librarypage/hdr/2014-human-development-report.html>.
- Walberg, H. J. (1984). Improving the productivity of America's schools. *Educational leadership*, 41(8), 19-27.
- Witte, K. D., & López-Torres, L. (2017). Efficiency in education: a review of literature and a way forward. *Journal of the Operational Research Society*, 68(4), 339-363.