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Factors that affect the optimisation of vocational high school facilities and infrastructure

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Abstract

This study aims to examine and prove the factors that affect the optimisation of facilities and infrastructure in vocational high schools. The research design used is a quantitative research method. The study was conducted at vocational high schools. The research sample used was 125 teachers in vocational high schools. Data collection techniques were carried out using a questionnaire. Data analysis was carried out using descriptive statistical analysis and multiple regression analysis through t-test. The results of this study indicate that there is a significant effect on the optimisation of facilities and infrastructure for the rule factor, partnership factor, student needs factor and motivation factor. The findings of this study prove that the optimisation of facilities and infrastructure is very important to be developed and implemented in vocational high schools.

Keywords: Educational facilities and infrastructure, vocational high schools.

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1. Introduction

Education is one of the basic needs for humans. Education can be a way for people to achieve their goals (Akareem & Hossain, 2012). Schools as educational institutions were basically established as a means for teaching and learning processes (Akhihiero, 2011). Standards for implementing learning in schools are supported by four aspects, namely curriculum, teachers, students and facilities and infrastructure. The quality of the implementation of learning or education in one school is directly proportional to the use of these four aspects. Schools receive a quality evaluation assessment with a good, very good or excellent category from an institution that has the authority such as the Indonesian National Accreditation Board, if the four aspects are deemed to have quality that matches or exceeds the standards that have been set. However, if it is less than this standard, it is certain that the school will not be accredited. Improving educational outcomes is a global goal in an educational organisation, for that in improving and maintaining the quality of education, it is hoped that educational institutions can regulate school resources in improving the quality of education (Lynch et al., 2019).

To strengthen the quality of education in the current industrial revolution which demands readiness in all things and in all fields, there are several aspects that must be considered. As new demands on the education system, the education system is required to place more emphasis on the quality of education, especially on school facilities and infrastructure because it is one of the most important aspects. This shift and change are not only happening in developed countries, but also in developing countries of the world. Facilities and infrastructure are supporting things that facilitate the teaching and learning process in schools. Facilities and infrastructure are indicators of the quality of education because they are one of the determinants of the success of education (Akhihiero, 2011; Herwan et al., 2018).

The existence of facilities and infrastructure for learning activities in the school environment plays a role in supporting the creation of success in the implementation of learning activities. Therefore, the existence and role of this factor cannot be ignored because the results of managing school facilities and infrastructure in improving the quality of education have an impact on supporting the educational process and have an important role in improving the quality of education (Wagner, 2010). Good facilities and infrastructure will attract and maintain teacher welfare, support improving student learning outcomes and have a positive economic impact on society. In addition, facilities and infrastructure will affect the quality of education, and students will be better able to accept learning well if they can use the facilities directly (Ngwaru & Oluga, 2015). This has an impact on class conditions that are more pleasant for students, and it can be concluded that complete school facilities and infrastructure can determine students (Vincent, 2012). Thus, the role of facilities and infrastructure is very important as the attractiveness of schools in the eyes of the community (Alkadri et al., 2018).

Ayeni and Adelabu (2011) state that the facilities and infrastructure in carrying out learning activities in the school environment can contribute to a positive learning environment, and quality education includes several things, namely location, building furniture and other equipment. Investment in facilities and infrastructure in the school environment has a good contribution to achieving and improving the performance of school residents, especially students. Optimising the use of school buildings will have an impact on the performance and achievement of students and other school members (Green & Turrell, 2005).

Facilities in education can be interpreted with everything that is a tool or equipment used when carrying out teaching and learning activities. The things that are facilities include buildings for schools, rooms or classes for studying, a collection of tables, chairs, props and much more, while the term educational infrastructure refers to any basic complementary device that is indirectly used to support the implementation of teaching and learning activities. The infrastructure includes roads leading to

schools, school grounds, parks in the school environment and gardens. Adequate educational facilities and infrastructure in every educational institution are important for educational actors. Adequate facilities and infrastructure will greatly support the learning process and enrich learning media, so that learning is easy to achieve and learning outcomes will be as expected (Sulasteri et al., 2021). In addition, facilities and infrastructure play an important role in affecting the implementation of the curriculum which will later be used in these educational institutions (Souck & Nji, 2017). The quality and quantity of facilities and infrastructure that are efficient for all student learning need can be the basis for saying that the facilities and infrastructure are appropriate or adequate. If the facilities and infrastructure are not in accordance with the operational standards of the school, it is possible for students not to receive learning materials properly, because facilities and infrastructure that are indicated to be bad will have an impact on learning activities in the classroom. Poor facilities can also harm students when they study (Ugwulashi, 2017).

Management of school facilities in the form of learning and physical learning environments includes several things, namely water, sanitation, classrooms, libraries and laboratories (Marishane, 2013). The urgency of educational facilities and infrastructure is not only related to the level of conduciveness of schools to student learning, but also at the same time is an inseparable part of the overall operation of educational institutions. The image of educational institutions and public trust in an educational institution is also related to the facilities and infrastructure it has. For this reason, the existence of facilities and infrastructure in schools needs to be managed seriously to help achieve the educational goals that have been determined (Marmoah et al., 2019).

Teachers need learning facilities to support learning activities, in addition to the ability of teachers to organise learning activities; support for learning facilities is very important in helping teachers. More complete and adequate learning facilities owned by a school will make it easier to carry out their duties as educators. The obstacle in optimising school learning facilities and infrastructure is the process of renewing inadequate facilities and infrastructure. Therefore, it is necessary for school members to understand and be able to manage educational facilities and infrastructure professionally and pay attention to the readiness of school learning facilities and infrastructure with the aim that teaching and learning activities can take place properly (Siregar & Aziza, 2021).

Optimal design and maintenance arrangements can increase productivity, and the most important goal of maintenance is to maintain equipment in optimal condition using the most economical method (Ershadi & Shemirani, 2020). The existence of maintenance actions for educational facilities and infrastructure that are held every day can keep the facilities and infrastructure properly maintained so that they are able to support the learning process in schools (Kuuskorpi & Gonzalez, 2011). The efficiency value of using practical work tools in vocational high school before being optimised was 60% or quite efficient; after being optimised, the efficiency value became 87% or very efficient (Tazkia & Suherman, 2016).

Optimisation has an understanding as a process to get the best condition (Michalek et al., 2002). If it is associated with facilities and infrastructure, then optimisation is the best step or method in the utilisation of facilities and infrastructure. This means that the facilities and infrastructure are fully utilised for the interests and needs of providing quality education. There are several aspects needed by schools to realise the optimisation of existing facilities and infrastructure, including first, effective principal leadership; second, partnerships in schools require continuous funding; And third, the need for facilities and infrastructure in the school environment as a form of strategic planning for schools. If these three aspects have been met by the school, the process of optimising facilities and infrastructure can be carried out in order to create an effective learning process (Marishane, 2013).

Seeing the strategic role of school facilities and infrastructure, there are at least four factors that affect their optimisation. First, the rule factor; with strict rules and regulations, of course, the facilities and infrastructure will be utilised optimally. Second, the partnership factor; with a partnership, there will be a symbiotic mutualism between schools and or between the same interests to take advantage of facilities and infrastructure when they are not used. Third, the factor of student needs; this is the primary factor for which facilities and infrastructure are provided in a school, namely to print the quality of graduates. Fourth, motivational factors; this is the most obvious factor to trigger teaching and learning motivation of teachers and students. Some of these descriptions become the basis for conducting research related to factors that affect the optimisation of vocational high school facilities and infrastructure. This study aims to examine and prove the factors that affect the optimisation of facilities and infrastructure in vocational high schools.

2. Method

2.1. Types of research

The approach used in this study is a quantitative approach. This study uses nonprobability purposive sampling as a sample design choice that is used in research activities. This research design uses a cross-sectional survey design, namely a research design that collects data at one time to the sample. The cross-sectional survey design can measure the need for educational services related to programmes, school facilities or involvement in schools or in the community (Creswell & Creswell, 2018).

2.2. Research subject

This research is used as information in the development of educational programmes and services, especially in optimising facilities and infrastructure to help achieve educational goals. The use of a quantitative approach is carried out by utilising a survey method on several 125 respondents consisting of vocational education actors in Yogyakarta. Determination of the respondents is done randomly.

2.3. Data collection technique

Data collection in this study was carried out using a questionnaire. Before using the data collection instrument, a content validity test was carried out first by an expert validator. The research index approach and reliability verification use an inter-rater assessment technique. The results of the assessment indicate that all items are valid and all instruments are reliable with a coefficient more than 0.8 as the standard value (Herwin & Nurhayati, 2021).

2.4. Data analysis technique

The data analysis technique used multiple regression test to determine the various factors or variables that affect the optimisation of vocational school facilities and infrastructure based on the hypothesis statement set out in the research conducted. Previously, for inferential testing, the normality of the data was first tested using the Kolmogorov-Smirnov test. In this study, there are five hypotheses tested as follows.

H1: There is a positive effect of rules on the optimisation of vocational facilities and infrastructure.

H2: There is a positive effect of partnership on the optimisation of vocational facilities and infrastructure.

H3: There is a positive effect of student needs on the optimisation of vocational facilities and infrastructure.
H4: There is a positive effect of motivation on the optimisation of vocational facilities and infrastructure.
H5: There is a positive effect of rules, partnerships, student needs and motivation on the optimisation of vocational facilities and infrastructure.

3. Results and discussion

3.1. Descriptive analysis results

The data from this study used multiple regression data analysis techniques, which were intended to predict the significance of the effect of the four independent variables in this study on the optimisation of facilities and infrastructure in vocational high schools. The affecting factors referred to in this study are the results that affect the optimisation of facilities and infrastructure in vocational high schools. In this study, data for this component score were obtained from 125 respondents. The data score of these variables is 125 with a score range between 50 as the minimum score and 12 as the maximum score. The first quartile is 9, the second quartile is 11 and the third quartile is 12. Descriptive statistical data from the measurement results are presented in Table 1.

Table 1. Descriptive statistical data

Statistics		Scores				
		Rule	Partnership	Student needs	Motivation	Optimisation of facilities and infrastructure
Mean		10.40	10.08	10.37	10.48	11.06
Median		11.00	10.00	10.00	10.00	12.00
Mode		9.00	9.00	11.00	12.00	12.00
Std. Deviation		1.30	1.37	1.19	1.22	1.14
Variance		1.71	1.88	1.43	1.49	1.31
Minimum		8.00	5.00	8.00	8.00	9.00
Maximum		12.00	12.00	12.00	12.00	12.00
Percentiles	25	9.00	9.00	9.00	9.00	10.00
	50	11.00	10.00	10.00	10.00	12.00
	75	12.00	11.00	11.00	12.00	12.00

Based on Table 1, it can be stated that the data from the measurement of the variables showed an average score of 10.40 with a standard deviation of 1.30, which indicates that the tendency of the average score to be in the very good category for the rule variable. The partnership variable shows an average score of 10.08 with a standard deviation of 1.37, which indicates that the tendency of the average score is in the very good category. Student needs variable shows an average score of 10.37 with a standard deviation of 1.19, which indicates that the tendency of the average score is in the very good category. The motivation variable shows an average score of 10.48 with a standard deviation of 1.22, which indicates that the tendency of the average score is in the very good category. While the dependent variable, namely optimising the use of infrastructure, shows an average score of 11.06 with a standard deviation of 1.14, which indicates that the tendency of the average score is in the very good category. The descriptive statistics obtained information that these variables descriptively have an effect with a high or very good score. Based on the results of the analysis, it can be concluded that

descriptively there is an effect of each variable which can be seen directly from the increase in the score on each variable.

3.2. Normality test results

Before proving the effectiveness of the variable, what needs to be proven is the effectiveness of the variable inferentially. This is done to prove the significance of the research variables on optimising the utilisation of infrastructure. To prove it, the variables were tested using T-test. However, before performing the inferential analysis, the normality test data was first assessed as a requirement to use parametric statistics (Senen et al., 2021; Wuryandani & Herwin, 2021).

Based on the results of the normality test, information is obtained, namely on the research variables, the Kolmogorov–Smirnov p-sig coefficient is 0.490 and the coefficient is greater than 0.05 significance level; so the data above shows that the residual data has a normal distribution indicated with a significance value of more than 0.05. In addition to the information from the results of the normality test using the Kolmogorov–Smirnov test described in the previous presentation, other information obtained is related to the normality of the data for research variables, namely the presentation in the form of a normality graph. The presentation of the data in the normality graph aims to observe the position of the data against a straight-line graph derived from the z-score. The normality test graph for these data is shown in Figure 1.

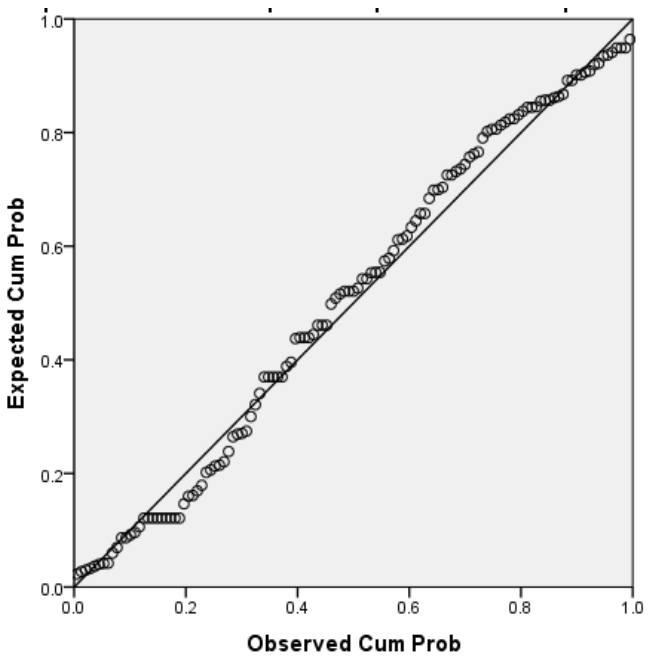

Figure 1. Graph of normality of research variables

Based on Figure 1, information is obtained that the distribution of data is between the lines of the z-score and is surrounded by the distribution of data for research variables. In Figure 1, it is clear that the distribution of the data is close to the ideal line, so this is one of the basics that the data is normally distributed. This indicates that the research variables can be expressed as normally distributed.

3.3. Inferential analysis results

After descriptively proving the relationship of factors that affect the optimisation of vocational high school facilities and infrastructure, the next thing to do is to test and prove the effect of variables inferentially. This verification is done through testing the data using the t-test. Related to this, in this study there is a test using multiple regression analysis which is presented in Table 2.

Table 2. Model summary

Model	R	R Square	Adjusted R square	Std. error of the estimate
1	0.619[a]	0.383	0.362	0.91702

In Table 2, it can be explained that the Adjusted R-squares coefficient shows a coefficient of 0.362, meaning that the independent variables (motivation, student needs, rules and partnerships) are able to explain the dependent variables (optimisation of the use of facilities and infrastructure) of 36.2% while the remaining 63.8% is explained by other variables outside the research model. To explain the effect of all independent variables on the dependent variable, Table 3 presents the results of the analysis of variance (ANOVA).

Table 3. ANOVA

Model	Sum of squares	Df	Mean square	F	Sig.
Regression	62.577	4	15.644	18.604	0.000[b]
Residual	100.911	120	0.841		
Total	163.488	124	15.644		

In Table 3 it can be explained that the results of the F test show a calculated F-value of 18,604 with a small significance of 0.05. This means that together the independent variables (motivation, student needs, rules, and partnerships) have been shown to have a positive effect on the dependent variable (optimisation of the use of facilities and infrastructure). To prove the effect of independent variables in detail on the dependent variables, it is presented in Table 4.

Table 4. Coefficients

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
(Constant)	3.372	0.910		3.705	0.000
Rule	0.164	0.076	0.187	2.174	0.032
Partnership	0.188	0.073	0.225	2.577	0.011
Student needs	0.215	0.079	0.224	2.733	0.007
Motivation	0.177	0.082	0.189	2.165	0.032

Related to the measurement of variables, in this study, there is a hypothesis that is tested, namely the factors that affect the utilisation of vocational high school facilities and infrastructure. If presented in the form of statistical hypotheses, the statistical hypotheses tested in this study are as follows: the standard coefficient of the effect of the rules on optimisation is 0.187 with a t-value of 2.174 and a significance of 0.032. Because the coefficient is positive and has a small significance of 0.05, it can be concluded that the rules have a positive effect on optimising the utilisation of facilities and infrastructure. The standard coefficient of partnership effect on optimisation is 0.225 with a t-value of 2.577 and a significance of 0.011. Because the coefficient is positive and has a small significance of 0.05, it can be concluded that partnerships have a positive effect on optimising the utilisation of facilities and infrastructure.

The standard coefficient of the effect of student needs on optimisation is 0.224 with a t-value of 2.733 and a significance of 0.007. Because the coefficient is positive and has a small significance of 0.05, it can be concluded that student needs have a positive effect on optimising the use of facilities and infrastructure. The standard coefficient of the effect of motivation on optimisation is 0.189 with a t-value of 2.165 and a significance of 0.032. Because the coefficient is positive and has a small significance of 0.05, it can be concluded that motivation has a positive effect on optimising the utilisation of facilities and infrastructure. Thus, it can be concluded that all the hypotheses that have been proposed have been significant. This shows that there is a significant effect of the factors that affect the utilisation of vocational high school facilities and infrastructure.

The findings of this study indicate that the factors that affect the use of facilities and infrastructure are rules, partnerships, student needs and motivation. This is supported by the view (Nurdin, 2021) which states that facilities and infrastructure are some very important sources of education to be managed properly. The existing facilities and infrastructure in educational institutions are related to the educational process in general which is greatly affected by the availability of supporting facilities and infrastructure. Students and teachers must use and maintain various school facilities and infrastructure properly. The relationship between facilities, teachers and students is a very close relationship between each other. Therefore, educational institutions need to develop the availability of other supporting facilities (Naganuma, 2017).

The rules used as guidelines in optimising the use of facilities and infrastructure in educational institutions, sourced from Indonesian Government Regulation No. 19 of 2005 in Chapter VII Article 42 Paragraph 2 state that: Every education unit is required to have infrastructure which includes classrooms, education unit leadership rooms, educator's room, administrative room, library room, laboratory room, workshop and exercise room, place of worship, playground, recreation area and other spaces/places needed to support an orderly and continuous learning process. This provision is also contained in the attachment to the Regulation of the Minister of National Education of Indonesia Number 24 of 2007 dated 28 June concerning Standards of Facilities and Infrastructure for Elementary Schools, Junior High Schools, High Schools and Vocational High Schools services which include standards for education units, land, buildings and completeness of facilities and infrastructure including classrooms, library rooms, laboratory rooms, leadership rooms, administrative rooms, places of worship, counselling rooms, health unit room, student organisation rooms, latrines, warehouses, circulation space and a place to exercise.

This is related to the management of education in schools which is a guideline in developing educational institution facilities and infrastructure (Hafiz, 2019). Facilities are one of the predictors of student satisfaction in educational services (Herwin et al., 2020). These guidelines aim at administering education which regulates the process of the course of education, starting from vertical and horizontal which includes the management of school facilities and infrastructure itself. In addition, the aim is to ensure that the educational process held within the educational institution runs consistently and is relevant to educational goals (Herwan et al., 2018). These rules must function interactively or affect each other to achieve the desired educational goals, so that the educational process can meet the needs and developments of the 21st century.

The most suitable education to face the challenges of globalisation is industry-oriented education with an emphasis on learning approaches supported by an appropriate curriculum. So far, vocational education is seen and expected to be able to produce graduates who have the competence to meet the needs of the industrial world and global challenges. For vocational education, the cooperation that is built with the industrial world is a very appropriate thing, especially in developing resources (Scharmann, 2007). Amey et al. (2007) explained that with the cooperation between vocational

education and industry, it is hoped that there will be utilisation of facilities. McLean and Behringer (2008) stated that the collaboration built between vocational schools and industry has considerable benefits for both parties, especially as an improvement tool. The form of approach that can be taken between the world of vocational education and the world of industry, according to Smith et al. (2006), is a partnership approach. Bernal et al. (2004) and Susan (2004) state that the form of cooperation between the world of education and the world of industry can be developed through a community framework that exists around the school environment to utilise and empower all the potential and resources owned around the school. As a school community and the business world, we can establish mutually beneficial cooperation in solving any problems we face together.

Partnership according to Webster's Dictionary is a relationship that is built by one party to another party that has special characteristics needed by the other party and usually involves close cooperation between and shared responsibility, the important idea in this definition is the sharing and shared responsibility. Both parties with different backgrounds share interests that allow them to work together for mutual benefits, each planned step should be in sync with each other's moves and be synchronised, so that each is aware of the other's steps. The basic assumption of the collaboration mechanism between the community and vocational education institutions is a partnership relationship that is built to have benefits, namely increasing active community participation, especially the industrial world and the success of vocational education programmes. Cooperation partnership (collaboration partnership) according to Foskett (2005) can be understood simply as a bond of cooperation between individuals or organisations, resulting in mutual benefits.

Partnerships can provide both academic and economic benefits. Partnerships can provide academic benefits, if the partnership obtains results that can add scientific substance to learning in vocational high schools. In addition, partnerships can provide economic benefits, if they are carried out by utilising existing resources and facilities together so that the implementation of education is more effective and efficient than if only used by each institution individually. This can be done if educational institutions and the business/industry world work together, where educational institutions provide students with theoretical knowledge, while the business/industry world provides them with practical knowledge through training experience in actual work practice. The results of this study are in line with the findings of research conducted by Okoye and Chijioke (2013) that training in vocational education organised by the industrial world and the private sector helps the industrial sector to obtain skilled, knowledgeable and professional workers. In addition, the facts show that the country's economy does not depend solely on an educated population, but partly on skilled workers who can quickly adapt to the demands of the labour market. To achieve this, of course, a partnership with the private sector is needed to achieve common goals.

Vocational high schools as formal educational institutions are responsible for creating competent, skilled and expert human resources in their respective fields to be deployed to the world of work. Vocational high school education itself has a vision of increasing student competence so that they can carry out self-development in accordance with scientific, technological and vocational developments. In addition, it also participates in preparing students to enter the world of work with an increasing professional attitude. In the school environment, this effort is carried out by increasing or optimising practicum and or practical work (internships) outside of school. The optimisation of the practicum is carried out through optimising the laboratory facilities and infrastructure owned.

Optimising the management of school facilities and infrastructure is a very important activity in educational institutions because its existence will greatly support the success of the learning process and is basically adapted to the student needs (Ahmad, 2021): starting from the role of vocational high schools as a formal educational institution that was created with the aim of preparing graduates to be

able to work in certain fields. Therefore, vocational high schools are expected to receive demands to be able to create human resources as graduates who are useful for schools, the community and the industrial business world. Therefore, various efforts need to be made to meet the aspects of student needs to become superior, expert and skilled resources and equipped with competencies in the fields of science and technology in accordance with the needs of today's industrial development. One of the efforts to meet this need is to optimise the facilities and infrastructure in the school environment using a teaching factory.

Teaching factory is one of the several programmes in vocational high schools that can help create schools that link and match with industry. The implementation of teaching factories carried out in vocational high schools can improve the quality of students to be more productive and able to adapt to the industrial world (Widiyanti et al., 2019). The teaching factory will meet aspects of student needs when carried out and managed properly and integrated by all school components. In the implementation of the teaching factory, facilities are one of the keys to supporting the success of the teaching factory in providing full support in the form of equipment, materials and a supporting environment. The application of a teaching factory using innovative technology can increase support in improving learning and work skills in meeting aspects of student needs (Kuts et al., 2018; Mourtzis et al., 2018a, 2018b; Stavropoulos et al., 2018).

There are three stages in the implementation of the teaching factory, namely planning, implementation and evaluation. First, planning is done to prepare everything that supports the teaching factory. Second is the implementation of teaching factory production and producing goods and services. Third, monitoring and evaluation are carried out to find out the obstacles that occur in the implementation of the teaching factory and to determine alternative solutions that must be taken. In the implementation of the teaching factory, there are several supporting factors and inhibiting factors. Supporting factors in the implementation of teaching factories include industry and educational institutions that have carried out communication and cooperation relationships outside of teaching factory activities, so that good relationships are established between the two. With this good relationship, the industry will fully support the human resources (student needs) and facilities needed in the implementation of the teaching factory. Support from schools will also make the teaching factory run more optimally because schools are an important main part of the collaborative process. In addition, the existence of a teaching factory will make students more enthusiastic and more competent, so that they can adapt to actual industrial conditions.

In addition to supporting factors, there are inhibiting factors that can hinder the implementation of learning and teaching in vocational high schools. One of them is that vocational high schools are late in implementing the teaching factory because they have not found a suitable place for the industry, so there is no socialisation and technical guidance related to the implementation of the teaching factory. In addition, the orders given by the industry or the community are sometimes erratic, so the teaching factory is temporarily suspended (Widiyanti et al., 2019). The results obtained from the teaching factory are meeting the needs of students to be able to enter the industry, gain the trust of the industrial business world and in the end the industrial world gets good output. One way that educational institutions can keep up with the times and meet existing market demands is through the development of qualified facilities and infrastructure that can be utilised optimally. In addition, it is also necessary to indicate the urgency and what indicators to show that the process of optimising the facilities and infrastructure is successful (Siswanto & Hidayati, 2020). Aspects of student needs to have practical skills according to the needs of the business world and the needs of students to socialise and become a significant factor in optimising facilities and infrastructure in the vocational high school environment.

The function of optimising facilities and infrastructure in the world of education is to support students and teachers in conducting learning activities in the classroom.

As the main function of vocational school facilities and infrastructure, especially laboratories, which provide practical education for students' basic skills, the proportion is greater than theoretical. The completeness of the facilities and infrastructure becomes the motivational aspect of the motivational trigger for teachers and students because with the support of complete facilities and infrastructure, learning will be more enjoyable. Therefore, motivation plays an important role for students in learning and is a very big factor and needs to be considered in doing learning (Gustiani, 2020). Student motivation is very high because it is driven by internal factors, where they as learners have a constant personality in developing learning activities because motivation cannot be separated from the learning activities themselves (Keller, 2008; Wighting et al., 2008; Yukselturk & Bulut, 2007). This is based on when students feel they are developing by themselves and feel positive motivation in each lesson (Lepper et al., 2005).

Teachers have an important role in the educational process (Saptono et al., 2021). Professional teachers have good basic teaching skills, understand or master the material and have loyalty to their duties (Tjabolo & Herwin, 2020). The quality of teachers greatly affects the quality of learning (Pratiwi et al., 2021). Teachers to be able to organise their learning activities well (Herwin et al., 2021). Good school facilities and infrastructure will affect teacher performance in improving learning in schools. Facilities and infrastructure are described as the progress of an institution in fully supporting learning activities; facilities and infrastructure indirectly affect the creation of the expected educational process. Optimisation of facilities and infrastructure plays an important role in the progress of education. Lack of support in optimising good facilities and infrastructure will affect teaching and learning activities that do not run optimally. Schools with inadequate facilities and infrastructure for optimisation, both in terms of quality and quantity, cannot be maintained continuously. However, if the school has facilities and infrastructure that are complete but underutilised, it will have an impact on teacher performance that is not optimal. There are also many schools that cannot carry out school activities perfectly because they do not have good facilities and infrastructure (Ratnani et al., 2021).

The facilities and infrastructure for learning activities provided by the school have a positive impact on the formation of student learning motivation and help students obtain results from learning activities effectively and well. Teachers will find it easier in carrying out their duties as educators if in schools there are complete facilities and infrastructure to support what is needed by the school. Learning facilities also have a role in building a learning atmosphere that can motivate students; therefore, facilities also need to be continuously developed by schools for the sake of creating good student learning achievements (Santika et al., 2021).

4. Conclusion

Based on the results of the research and discussion that have been described, it can be concluded that there is a significant effect on the optimisation of facilities and infrastructure for the rule factor, partnership factor, student needs factor and motivation factor. Thus, the optimisation of facilities and infrastructure can be influenced by the application of rules, partnerships, needs and motivation of students in the teaching and learning process in vocational high schools. This is evidenced by a positive increase in the score in each variable. The findings of this study prove that the optimisation of facilities and infrastructure is very suitable to be developed and implemented in vocational high schools. This is based on a good educational process that requires adequate facilities and infrastructure, either directly

or indirectly, because the optimisation of facilities and infrastructure is very important for the success of an education and the progress of achievement for students.

Based on the findings of this study, it is suggested that in the teaching and learning process in schools, the school is expected to implement the optimisation of facilities and infrastructure because it plays a very important role in supporting the achievement of learning success; with the optimisation of appropriate facilities and infrastructure in schools, it is expected to support and facilitate the course of teaching and learning activities both directly and indirectly. Other suggestions were also conveyed to the government and policymakers to participate in strengthening facilities and infrastructure in vocational high schools. The recommendation is the need for further research, especially on other factors that contribute to the success of optimising facilities and infrastructure in schools. In addition, it is hoped that the results of this study can be used as a reference for further research and further develop insight into optimising educational facilities and infrastructure in schools.

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