

## The evaluation of facilities and infrastructure standards achievement of vocational high school in the Special Region of Yogyakarta

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### ABSTRACT

The objectives of the study are to determine (1) the achievement of standard facilities and infrastructure for vocational high school in the Special Region of Yogyakarta, (2) the supporting factors for achieving the standard of facilities and infrastructure, and (3) the inhibiting factors for achieving the standard of facilities and infrastructure. This study employed an evaluation research method with a survey approach. The research sample was six vocational high schools in the Special Region of Yogyakarta, which was chosen through purposive sampling, taking into Cluster 1, Cluster 2, and Cluster 3. Data collection techniques used were Focused Group Discussion techniques, questionnaires, documents, observations, and interviews. The validity of the questionnaire instrument used expert validation. Analysis of quantitative data was conducted through descriptive analysis techniques and qualitative data with interactive analysis models. The results of the study show that (1) the standard of facilities shows that the average school data has met facilities and infrastructure standards, (2) the supporting factors for achieving the standard of facilities and infrastructure are (a) the principal's policy in developing facilities and infrastructure, (b) government support through programs to develop and achieve national education standards, (c) community support through school committees, (d) education board support, and (3) the inhibiting factors for achieving facilities and infrastructure standard are: (a) the lack of teacher media innovation developed in vocational high school; (b) the lack of maximization and maintenance of infrastructure in vocational high school; (c) the lack of support in classrooms and workshops, especially in the connectivity aspect.

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## INTRODUCTION

Education is a systematic process to improve human dignity become a lifelong learner. Education must include (1) affective dimensions which are reflected in the quality of faith, noble character and superior personality, (2) cognitive which is seen in the capacity of thinking and intellectual power to explore, develop and master the science and technology, and (3) psychomotor which is reflected by skills and technical abilities (Bansal, 2004).

Education should be a strategic vehicle for efforts to develop all potential that exists in each student. Students are the subjects of education, not objects of education as is currently happening in Indonesian education world. Students are considered as empty bottles that are ready to be filled with curriculum material. The learning process conducted is teacher-centered learning. This is what in the future causes graduates who are not critical of their era because students are accustomed to accepting in one direction what they get at school. Students are seen as passive object who do not understand and are required to understand the material presented by the teacher. Therefore, students' opportunities to develop abilities according to their

interests and talents and even to be able to learn according to their learning styles are limited (Alba, 2011).

Currently, Indonesia has to develop student-centered learning. Teachers and schools with government and community support must be able to develop learning methods such as problem-based learning, collaborative learning, project-based learning, etc. The goal is that students can learn more, learn to be more alive and learning is not a burden for students but a necessity, so that they can become lifelong learners (Rourke & Coleman, 2011).

As a reference point for looking point of departure, it can be seen the position of Human Life Development Index (HDI) in Indonesia in 2019 which is in the 121st of 187 countries in the world. HDI is a comparative measure of life expectancy, literacy, education, and standard of living for all countries around the world. This condition is still far below neighboring countries and other countries in the Southeast Asian such as Singapore (18), Brunei Darussalam (30), Malaysia (64), Thailand (103), and Philippines (114). Our country is only a few notches above Vietnam (127), Laos and Cambodia (138), and Myanmar (149) (Raharjo, 2013).

To make these noble become ideals, the government established 8 Indonesian national education standards which serve as guidelines for educators and education personnel to develop abilities and shape the character and civilization of a dignified nation to educate the nation's life. [Law of the Republic of Indonesia No. 20 of 2003](#) explains that the national education standards are the minimum criteria regarding the education system in all jurisdictions of the Republic of Indonesia (Article 1 Paragraph 17). National education standards consist of standards of content, process, competency of graduates, education staff, facilities and infrastructure, management, financing, and assessment of education which must be improved on a planned and periodic basis (Article 35 Paragraph 1) with the enactment of [Government Regulation Number 19 of 2005](#) concerning National Education Standards. The eight Indonesian National Education Standards referred to: (1) Graduate Competence Standard; (2) Content Standards; (3) Process Standards; (4) Standards of Educators and Education Personnel; (5) Facilities and Infrastructure Standards; (6) Education Management Standards; (7) Education Financing Standards; and (8) Educational Assessment Standard.

However, through the dynamics of community development, local, national, and global to realize the functions and goals of national education, the government has issued the latest Government Regulation as an amendment to Government Regulation Number 19 Year 2005. On 7 May 2013, the President of Republic of Indonesia, Susilo Bambang Yudhoyono, signed a new regulation, namely Government Regulation Number 32 Year 2013 concerning Amendments to the Government Regulation Number 19 Year 2005 concerning National Education Standards.

Through the issuance of Government Regulation on the national education standard, which has been in effect for about eight years, prompts the need for a study on the achievement of the national education standards. Therefore, this study helps the policy directions for realizing quality education at the central, regional and educational units to be achieved effectively and efficiently in accordance with development of science and technology, needs, and characteristics of educational units and regions.

A strategic view of an educational organization must include considerations of goals and objectives for the organization. This means that the goals of an educational institution will lead to ideas related to improvement, increasing effectiveness or research on quality (Rourke & Coleman, 2011; Saputra & Sukirno, 2020).

Strategic planning, according to Bryson (2004), is a process that produces decisions and actions to guide what the program is, what is done, and why it is done. Strategic planning is a practical process to help adapt a product, service, and activity according to the needs of the community for the program. The advantages of strategic planning include improving program performance, resource use, understanding of the program context, decision making, commu-

nication with users/customers, and political support for the program (Nurfaisal, 2017). Therefore, the strategy for achieving the national education standard program is a stage of activity that involves systematic components that result in important actions regarding the achievement of the national education standards in order to suit the needs of the community through strengths analysis, weakness, opportunity, and treat (Lestari & Purwanti, 2018). It has an impact on improvements, increasing effectiveness, improving quality, improving program performance, resource use, understanding the program context, decision making, communication with users, and political support for the program.

Facilities and Infrastructure Standards are criteria regarding study rooms, places to exercise, places of worship, libraries, laboratories, workshops, which are needed to support the learning process, including the use of information and communication technology. This research is specifically focused on achieving the standard of facilities and infrastructure as part of the national education standard by taking the case at vocational high school in Yogyakarta. The purpose of this research is to find out (1) how to achieve the standard of facilities and infrastructure for vocational high school in the Special Region of Yogyakarta, (2) what are the factors that hinder and support the achievement of standard facilities and infrastructure.

## RESEARCH METHOD

This research employed an evaluation research method with a survey approach to explore data both qualitatively and quantitatively. The sample in this research were six vocational schools in the Special Region of Yogyakarta which were taken by purposive sampling, taking into account the superior cluster, medium cluster, and low cluster in vocational high school. The schools with superior clusters are Vocational High School 1 Yogyakarta and Vocational High School 2 Depok Sleman, the middle cluster is Vocational High School 4 and Vocational High School 6 Yogyakarta, and the lowest school is Vocational High School 2 Kasihan Bantul and Vocational High School Sedayu Bantul. Data collection techniques used were FGD techniques, questionnaires, documents, observations, and interviews. The validity of the questionnaire instrument used expert validation. The validity of the qualitative data was validated by an informant review model, and data triangulation. Analysis of quantitative data was conducted through descriptive analysis techniques and qualitative data with interactive analysis model Milles and Huberman. An interactive model was used to analyze the qualitatively quantitative data. Facilities and infrastructure standards were used as criteria regarding study rooms, places to exercise, places of worship, libraries, laboratories, and workshops.

## FINDINGS AND DISCUSSION

### Findings

Referring to the [Government Regulation Number 19 of 2005](#) concerning National Education Standards, Article 42 Paragraph (1) is that every educational unit is required to have facilities which include furniture, educational equipment, educational media, books and other learning resources, consumables, and other equipment needed to support an orderly and continuous learning process. Paragraph (2) is that each education unit is required to have infrastructure which includes land, classrooms, education unit leadership room, educator room, administration room, library room, laboratory room, workshop room, production unit room, canteen room, power installation and services, places to exercise, places of worship, places to play, places to be creative, and other spaces/places needed to support an orderly and continuous learning process.

Furthermore, the [Regulation of the Minister of National Education of the Republic of Indonesia Number 24 of 2007](#) concerning Standards for Facilities and Infrastructure explains

that the implementation of learning in national education is centered on students so they can: (a) learn to have faith and fear God Almighty, (b) learn to understand and live, (c) learn to be able to implement and act effectively, (d) learn to live together and be useful to others, and (e) learn to build and find identity through an active, creative, effective, and fun learning process. Therefore, it is necessary to have adequate facilities and infrastructure. Adequate facilities and infrastructure must meet the minimum provisions that have been set in the standard of facilities and infrastructure.

For the availability of facilities, the data was taken from schools based on the selected classification, namely Vocational High School 1 Yogyakarta, Vocational High School 2 Depok Sleman, Vocational High School 5 Yogyakarta, Vocational High School 6 Yogyakarta, Vocational High School 2 Kasihan Bantul, and Vocational High School 1 Sedayu Bantul. Each from category 1 (K1) is ranged to category 5 (K5). The categories start from very good, good, quite good, less good, and not good (5-4-3-2-1) based on the average score of national examination. The average score of national examination in Vocational High School 1 Yogyakarta is 91.2; Vocational High School 2 Depok Sleman is 90.7; Vocational High School 5 Yogyakarta is 87.3, Vocational High School 6 Yogyakarta is 79.1, Vocational High School 2 Kasihan Bantul is 68.2; and Vocational High School 1 Sedayu Bantul is 63.9. Facilities and Infrastructure Standards concern criteria regarding study rooms, places to exercise, places of worship, libraries, laboratories, workshops are described in the following graphic form.

### Study Room

Figure 1 shows that the overall distribution of library facilities availability in the K1 to K5 categories in the available category is between 88.89% to 93.62%, while the unavailable category ranges from 7.41% to 12.12%.

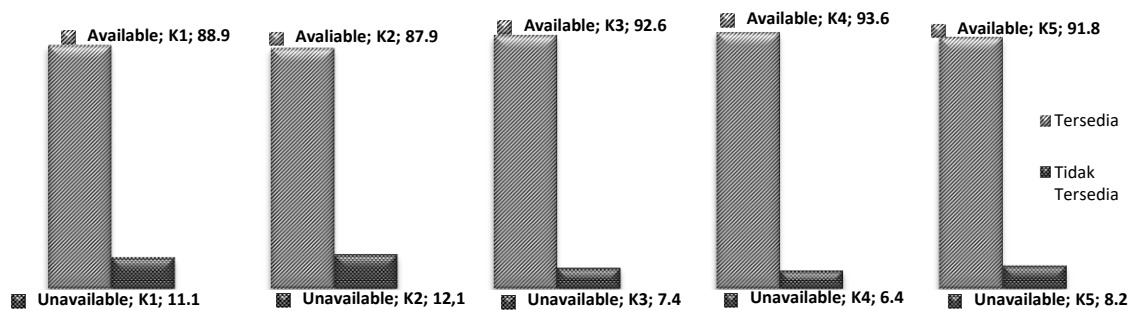


Figure 1. The availability of learning room

The availability of learning room facilities shows that the data in the available category is higher than the unavailable category. This availability is evenly distributed in all categories so it can be stated that almost all schools have learning space facilities. Availability of study room facilities shows the higher the category, the greater the ownership of learning room facilities.

### Workout Place

Figure 2 shows that the distribution of sports facilities in K1 to K5 categories in the available category is on average between 70.37% to 91.49%, while the unavailable category ranges on between 8.51% to 29.63%. Therefore, the availability of sports facilities shows that the data in the available category is greater than the data unavailable. This availability is evenly distributed in all categories, so it can be stated that almost all schools have sports facilities. The availability of sports facilities shows the higher the category, the greater the ownership of sports facilities.

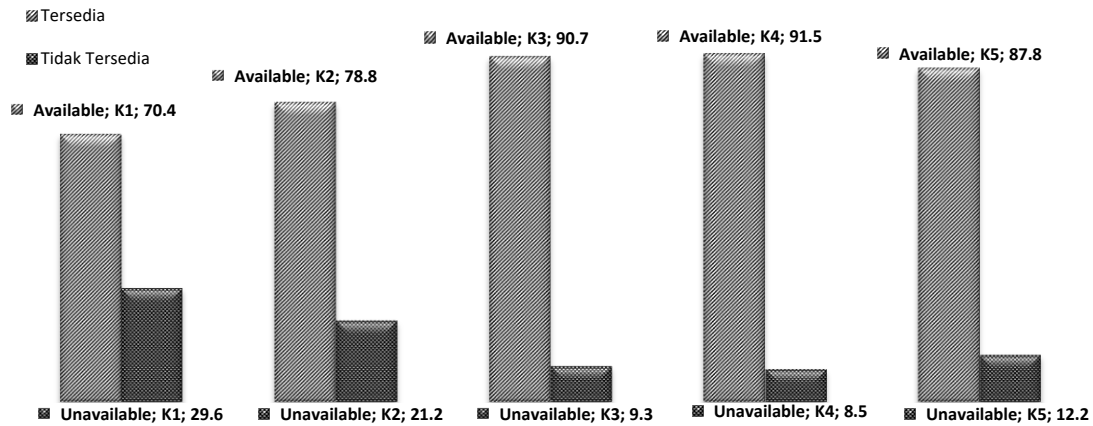


Figure 2. The Availability of Sports

The availability of sports facilities shows that the data in the available category is higher than that in the unavailable category. This availability is evenly distributed in all categories so that it can be stated that almost all schools have sports facilities. The availability of sports facilities shows the higher the category, the greater the ownership of sports facilities.

**Place of Worship**

Figure 3 shows that the distribution of the availability of worship facilities in the K1 to K5 categories is between 66.7% to 87.8, while the unavailable category ranges from 12.2% to 33.3%. Thus, the availability of worship facilities shows that the data in the available category is greater than the data unavailable. This availability is evenly distributed in all categories, so it can be concluded that almost all schools have facilities for worship. The availability of worship facilities shows the higher the category, the greater the ownership of worship facilities.

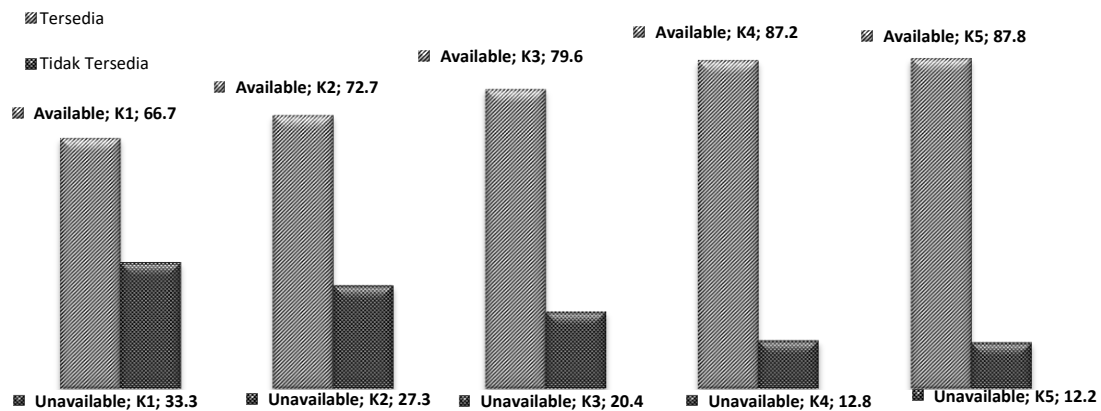


Figure 3. The Availability of Worship

**Library**

Figure 4 shows that the distribution of library facilities availability in the K1 to K5 categories is between 66.7% to 87.8%, while the unavailable category ranges from 12.2% to 33.3%. Therefore, the availability of library facilities shows that the data in the available category is greater than the data not available. This availability is evenly distributed in all categories so that it can be stated that almost all schools have Chemical Laboratory facilities. The availability of library facilities shows the higher the category, the greater the ownership of library facilities. In its management, the results of data collection show that the main obstacle is that the computer infrastructure is still inadequate, especially on internet and network connections.



This is the same as the research results conducted by Purwanto and Annisa (2020) that poor Internet connections and Wi-Fi networks are locked and the accumulation of the number of books that must be processed and input to the data base.

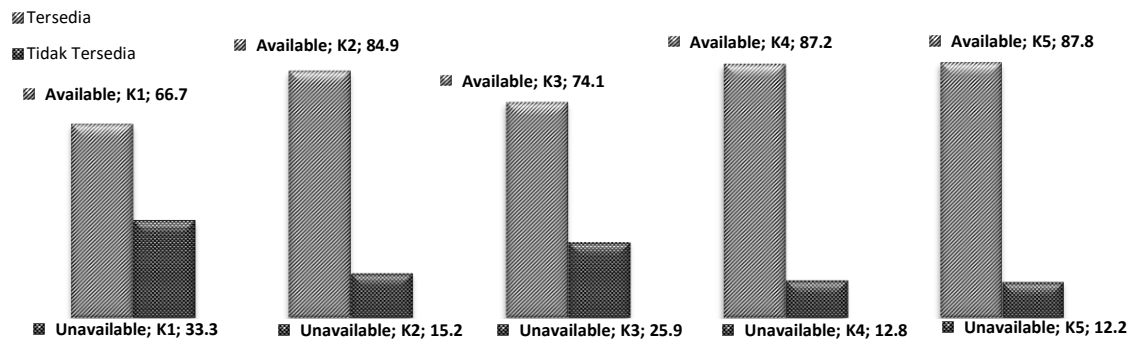


Figure 4. Library Facilities Availability

**Laboratory**

Figure 5 shows that the distribution of the availability of laboratory facilities in the K1 to K5 categories is between 66.6% to 87.8%, while the unavailable category ranges from 12.2% to 33.3%. Therefore, the availability of laboratory facilities shows that the data in the available category is greater than the data unavailable. This availability is evenly distributed in all categories, so it can be stated that almost all schools have laboratory facilities. The availability of laboratory facilities indicates the higher the category, the greater the ownership of laboratory facilities.

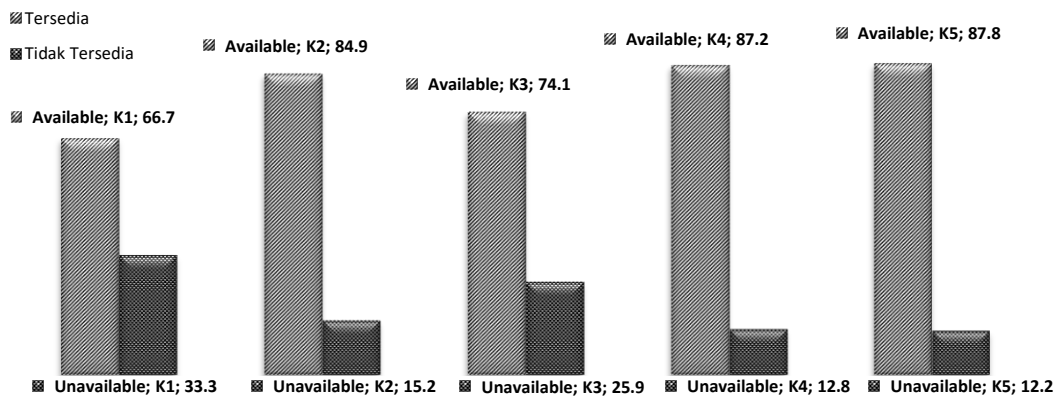


Figure 5. Availability of Laboratory Facilities

The availability of laboratory facilities shows that the data in the available category is higher than that in the unavailable category. This availability is evenly distributed in all categories, so it can be stated that almost all schools have laboratory facilities. The availability of laboratory facilities shows the higher the category, the greater the ownership of the laboratory. The results of the laboratory evaluation by Masril et al. (2020) who evaluates using the CIPP model results that laboratory management is in the good category with the score of 77.06%.

**Workshop**

Figure 6 shows that the distribution of workshop availability in the K1 to K5 categories is between 37% to 59.2%, while the unavailable category ranges from 40.8% to 63%. Therefore, the availability of workshop facilities shows that the data in the unavailable category is greater than the available one. Although the unavailability of workshops is quite large, the

availability data shows that the higher the category, the greater the ownership of the workshop. Nugroho (2015) also examines the evaluation of workshop practiced at BLPT Yogyakarta, the results of which were contributed by the influence of the variables of implementation, assessment, and learning outcomes of workshop practices so they could be maintained.

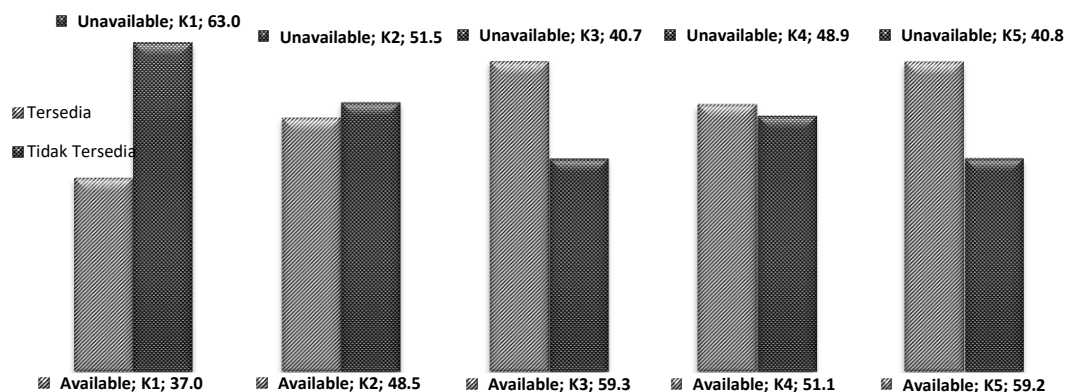


Figure 6. Availability of Workshops

## Discussion

The standard of facilities seen from the availability and adequacy of facilities shows the data on average schools already have these facilities. Although, it is still found that there are schools which do not have these facilities. The data also shows that the distribution of categories 1 to 5 provides information that the higher the category, the higher the tendency for the availability and adequacy of facilities. Thus, the standard of facilities seen from the availability of all facilities indicates that the average data is available. The distribution of categories 1 to 5 shows that the higher the category of availability of facilities. Besides, it also shows that the national examination is high.

The factors that support the achievement of standard facilities and infrastructure are described as follows: (1) At the policy level, the government's attention to vocational high school is increasingly becoming a priority. The principal's policy on the concentration of school program development includes the development of facilities and infrastructure. With the assistance of the Director General of Vocational High School, the procurement of tools and the construction of a work practice laboratory will be optimized; (2) government support through development programs and the achievement of national education standards and minimum service standards. The development programs applied in the observed vocational high schools are vocational teacher training programs, religious values development programs, and school integration programs with the world of work and industry; (3) community support through school committees through programs to develop school facilities and infrastructure to support educational activities through the withdrawal of voluntary donations without pressure from school committees playing an important role in the development of facilities and infrastructure; (4) education council support which is a liaison between schools and the government in this is recommending education policies, recommending education financing, and supervising the education system at the level of education units and education offices, both district and city.

Meanwhile, the inhibiting factors for achieving the standard of facilities and infrastructure are described as follows: (1) the lack of teacher media innovation developed in vocational high school. This causes students' motivation in learning to be low; (2) the lack of maximizing and maintaining infrastructure in vocational high school. For example, a class or workshop room that does not have cooling so that it looks hot and students become less concentrated in

learning; (3) the lack of support in classrooms and workshops. Connectivity and networks are the main supports in communication technology that will maximize learning outcomes. In most of the vocational high school, the observations show that the connection and bandwidth on the Internet network is still low, which makes the learning process less than optimal.

In the theoretical and empirical study as stated in the data, the standard of facilities and infrastructure is a national standard of education related to minimum criteria regarding study rooms, places to exercise, places of worship, libraries, laboratories, workshops, places to play, places to be creative, and other learning resources that needed to support the learning process, including the use of information and communication technology. Standards for facilities and infrastructure are developed by National Education Standards Agency and determined by Ministerial Regulation (Raharjo, 2013). Thus, the facilities and infrastructure owned by schools must have a minimum feasibility to support the development of learning activities, and improve the quality or quality of education both on a macro and micro scale.

Therefore, every educational unit is required to have facilities that include furniture, educational equipment, educational media, books and other learning resources, consumables and other equipment needed to support an orderly and continuous learning process. Each education unit is required to have infrastructure which includes land, classrooms, leadership rooms, education units, educator rooms, administrative rooms, library rooms, laboratory rooms, workshop rooms, production unit rooms, canteen rooms, power and service installations, places to exercise, places of worship, places to play, places to be creative, and other places needed to support an orderly and continuous learning process (Nye et al., 2004). Schools must have standard types of science laboratory equipment, language laboratories, computer laboratories, and other learning equipment in educational units stated in a list containing the minimum types of equipment and media that must be available. These standards are expressed in the ratio of the minimum amount of equipment per student.

Learning facilities and media have the main function as teaching aids, influencing the creation of an atmosphere, condition, culture, and learning environment managed by teachers. The use of learning media in the learning process can arouse desire and interest, arouse motivation and stimulate student learning activities (Kalolo, 2015; Lee et al., 2010). Optimizing the use of learning media can enhance the quality of the process and student learning outcomes. This happens because: (a) the use of media in learning activities will attract more students' attention to foster learning motivation; (b) learning materials will have a clearer meaning to be better understood by students; (c) teaching methods will be more varied, not merely verbal communication through the words of the teacher, so the students do not get bored; (d) students do more learning activities, because they do not only listen to the teacher's description, but also other activities such as observing, doing, demonstrating and others. Thus, optimizing the use of learning media can improve the quality of learning (Devi et al., 2012; Rusman, 2015).

An equally important component of facilities is ownership of standard tools and media as well as learning resources. There are several things that need to be considered by teachers in utilizing learning media to enhance the quality of learning. First, teachers need to have an understanding of learning media, including the types and benefits of learning media, criteria for selecting and using learning media, using media as teaching aids, and following up on the use of media in the learning process. Second, teachers must be skilled in making learning media for learning purposes such as maps, time-charts, pictures, transparent, etc. (Doherty, 2008; Hampf & Woessmann, 2017). This is reinforced from interview data with one of the teachers who explained that so far learning in vocational schools has tended to use media from those already available on the Internet or YouTube. Therefore, innovation and creativity of teachers in developing media are not a priority.

The purpose of education basically leads students to changes in behavior both intellectually, morally, and socially so they can live independently as individuals and social beings.



In achieving these goals, students interact with the learning environment regulated by the teacher through the learning process. In this conception, learning facilities are included in the category of the physical environment. Schneider's research (Morrison et al., 2006) shows that the physical environment of the classroom has a significant influence on student learning and teacher performance. Uncomfortable classrooms, hot, cold and lots of traffic are obstacles to achieve better learning. To be able to teach optimally, teachers need to be calm, security, comfort, sufficient and free from crowd disturbances (Celik, 2011; Munro, 2005).

Based on this description, it can be concluded that learning facilities are everything that facilitates the implementation of learning activities. Learning facilities include study rooms, learning media and learning resources. Optimal use of learning media can enhance the quality of the teaching and learning process which in turn can improve the quality of student learning outcomes. Learning facilities also affect the teaching performance of teachers in improving the quality of learning. Good learning facilities to improve the quality of learning include adequate or representative classrooms, complete and adequate learning media, and the availability of supporting learning resources. Learning facilities are generally interpreted as everything that supports the learning process activities (Admiraal et al., 2014).

## CONCLUSION

Based on the results of the research and discussion above, it is concluded that the results of the study are described as follows: (1) the standard of facilities seen from the availability and adequacy of the facilities shows the data on average schools have these facilities, although it is some schools that do not have these. The data also shows that the distribution of categories 1 to 5 provides information that the higher the category, the higher the tendency for the availability and adequacy of facilities. (2) Factors supporting the achievement of standard facilities and infrastructure are: (a) principal's policy in the development of facilities and infrastructure, (b) government support through development programs and achievement of national education standards, (c) community support through school committees, (d) education board support. (3) The inhibiting factors for achieving standard facilities and infrastructure are: (a) the lack of teacher media innovation developed in vocational high school; (b) lack of maximization and maintenance of infrastructure in vocational high school; (c) lack of support in classrooms and workshops, especially in the aspect of connectivity.

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