Support of Computer Laboratory Facilities and Infrastructure in Achieving Drawing Competence in DPIB Expertise Program at SMK Negeri 3 Kuningan

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ABSTRACT

Facilities and infrastructure are supporting facilities that can support the process of activities to achieve the goals of learning. In the instrumental input factor, the facilities and facilities are divided into 2, namely internal and external. Internal means facilities and facilities that are inside the school and external is the existence of facilities and facilities owned by students at home or can also be referred to as students' personal facilities and infrastructure. This study aims to determine the level of suitability of the availability of DPIB computer laboratory facilities and infrastructure SMK Negeri 3 Kuningan and its level of support in learning activities. This research uses a descriptive quantitative research type. The population in this study were students of class XII Design Modeling and Building Information at SMK Negeri 3 Kuningan with a total of 90 students. The data collection techniques used in this study were observation, documentation and questionnaires. The analysis technique used in this study is descriptive statistical analysis of percentages. The results showed that: (1) the availability of DPIB computer laboratory facilities and infrastructure at SMK Negeri 3 Kuningan with a conformity level of 80% according to the minimum standards of Permendiknas No. 34 of 2018 and UKK Instrument 2021/2022. (2) the availability of laboratory infrastructure to support learning activities by 89% strongly supports this as evidenced by the results of the achievement of computer drawing competencies in Software Applications and Design lessons where the average acquisition of skill scores is at 80.3 and 80.1 in Construction Cost Estimation lessons with the competent category . The availability of DPIB laboratory facilities and infrastructure is in accordance with standards so that the availability of computer facilities and infrastructure is able to support the achievement of drawing competence for DPIB students at SMK Negeri 3 Kuningan. Based on the research results, it is hoped that teachers can improve students' skills in using computer devices and students are expected to be able to utilize school facilities efficiently and improve learning discipline in order to achieve good learning outcomes.

Keywords: Support, Facilities and Infrastructure, Competency.

1. INTRODUCTION

Each level of national education aims to educate the nation and develop Indonesian people who have faith and are devoted to God Almighty, and have knowledge and skills, physical and spiritual health, strong and independent personalities as well as a sense of social and national responsibility as stated in the Law. No. 2 in 1989 [1]. This proves that education has an important role in creating the future of a more advanced nation and state. The educational process is divided into several stages starting from the stages of basic education (SD), junior high school (SMP), upper/vocational high school (SMA/SMK), and tertiary education (PT). According to Nasution, E [2] in his research entitled Educational Problems in Indonesia said that national education has a function to be able to develop capabilities, character, and national civilization in educating the nation's life. Thus, education in Indonesia tends to prioritize the development of social and religious attitudes in its implementation as revealed by Sujana, IWC [3].

In Law Number 20 of 2003 [4] Article 15 states that vocational education is secondary education that prepares

students especially to work in certain fields. Vocational schools guide students not only to focus on the world of work but are also directed to be able to continue their education and be able to create jobs. According to Suprihadi [5], vocational education is an expensive investment, but very strategic in producing skilled and skilled Indonesian resources in their fields according to the needs of society and the nation, especially the needs of the business and industrial world [6].

Fatmawati, et al [7] stated that in order to improve the quality of human resources, successful learning in schools is of course supported by adequate educational facilities and infrastructure. Facilities and infrastructure must be managed properly so that during the learning process the facilities and infrastructure can be used optimally, effectively and efficiently, so as to support improving the quality of learning. Conversely, if the facilities and infrastructure are inadequate, this will hinder the teaching and learning process, because students are less assisted by the facilities provided.

According to Ismaya [8], facilities and infrastructure are supporting facilities that can support the process of activities in any organization including educational units or schools. One aspect of the eight National Education Standards, facilities and infrastructure are useful as a support for Teaching and Learning Activities (KBM) in schools. Complete facilities and infrastructure really help teachers to convey learning material to their students.

Minarti [9] stated that if viewed from its function and role in the learning process, infrastructure is grouped into two types, first, infrastructure that is directly used, for example, theory rooms, libraries, laboratory rooms. Second, infrastructure that is not directly used for the learning process but still supports the teaching and learning process, namely canteens, prayer rooms, restrooms, UKS rooms, teacher rooms, principal rooms, and vehicle parking lots.

Typical facilities and infrastructure owned by vocational high schools are the availability of laboratories and workshops, such as computer laboratories, drawing laboratories, building practice laboratories, machine repair shops, light vehicle repair shops, and other workshops. In the vocational design, modeling and building information classes, students need computer laboratory facilities and infrastructure provided by the school.

In the 2018 SNP SMK, the practice room for Modeling and Building Information Design Expertise Competence functions as a place for implementing learning activities such as drawing building interior design designs with computers, understanding road and bridge construction, calculating materials and costs using computer programs.

The availability of facilities and infrastructure in each school certainly has differences or varies. The DPIB

the computer laboratory at SMK Negeri 3 Kuningan has 4 rooms with different distribution of facilities. So based on the statement above, the researcher is interested in measuring the suitability of infrastructure facilities in the computer laboratory at SMK Negeri 3 Kuningan in supporting the competence achievements of the students so that they are in accordance with the needs of the industry.

2. RESEARCH METHODS

The research method used in this study is a descriptive research method using a quantitative approach. The descriptive method in this study is used to measure the level of suitability of facilities and infrastructure as well as the minimum competency achievements of students who are in the DPIB expertise program at SMK Negeri 3 Kuningan. The objects in this study were the facilities and infrastructure of the computer laboratory and the achievement of students' drawing competence in the use of computer devices.

The population in this study were class XII DPIB students with a total of 90 students. Sampling using a confidence level of 5% of the samples taken were as many as 72 students.

In this study, data collection techniques were carried out by observation, questionnaires and documentation. Observations were made to find out the availability of facilities and infrastructure in the field, questionnaires were used to find out how the students used and used the facilities and infrastructure, and documentation was used to capture data in the form of portraits and documents of student competency achievements owned by the school.

The research instrument test aims to find out whether the research instrument is feasible or not used in a study so that the results of the research can explain a population well and can be accounted for. The instrument test was given to 18 respondents who were a sample of the study population. Validity test is used to assess whether a questionnaire is valid or valid.

Data analysis techniques are used to analyze and determine the level of suitability and support for facilities and infrastructure in supporting student competence achievements. The analysis technique used in this study is descriptive statistical analysis of percentages.

3. RESULTS AND DISCUSSION

The data that has been collected from the observations will be described using descriptive analysis with the data that has been taken regarding the infrastructure in the DPIB computer laboratory. So that it can be known later about what aspects have not been fulfilled or have been fulfilled based on the standards that have been used. The following are the results of

observations and documentation that have been carried out.

Table 1. Condition of computer laboratory facilities and infrastructure.

Indicator	Sub indicators	Observation results	Student assessment results
Furniture	Chair	91.10%	97.00%
	Table	87.30%	97.00%
	Cupboard	72.00%	94.00%
	Whiteboard	85.30%	93.00%
ICT equipment	Computer hardware	84.00%	91.00%
	Internet connection	23.00%	50.00%
	Printers	88.00%	83.00%
	LCD projector	70.00%	95.00%
	Electric socket	93.00%	95.00%
Etc	Cleaning tool	80.00%	89.00%
	K3 tools	79.00%	89.00%
	Props	61.00%	89.00%
	Conditioning	98.00%	97.00%
Infrastructure	Laboratory	80.00%	90.00%
Average		80.00%	90.00%

The table above shows the percentage scoring results from the observation of facilities and infrastructure as well as a questionnaire regarding the use of infrastructure by students. In observing infrastructure facilities, observations are made by referring to or referring to the standards stated in the Regulation of the Minister of National Education (Permendiknas) No. 34 of 2018 [9] while in the questionnaire filled out by students referring to or based on the experience of students in using facilities and infrastructure in the DPIB computer lab.

According to Bafadal [11] a facility is a piece of equipment made of materials or furniture that can be used in activities or activities. Infrastructure is all the basic physical equipment of an area, environment, city or area that allows the space to function.

From the results of the observations that have been made, the data for facilities and infrastructure is obtained as follows. First of all, regarding the presence of furniture in the laboratory room, there are chairs for students who get a percentage of 82%, which states that the chairs are in accordance with the predetermined minimum standards, teacher chairs get a percentage of 84%, which states that the availability of teacher chairs is in accordance with predetermined minimum standards. , student desks get a percentage of 86% stating that according to predetermined minimum standards, teacher desks get a percentage of 88% stating that the teacher's desk is in accordance with predetermined standards, cupboards get a percentage of 67% which means the presence of cupboards is quite in accordance with specified minimum standards, the blackboard gets a percentage of 86%, which means that the blackboard is in accordance with a predetermined minimum standard. Then on ICT equipment there are computer equipment

with an acquisition percentage of 81%, which means that computer equipment meets the specified minimum standards, UPS gets an 86% percentage, which means that the UPS is in accordance with predetermined minimum standards, printers only get 59% so the presence of the printer is not in accordance with a predetermined minimum standard, the LCD Projector obtains a percentage of 65% that the LCD Projector is sufficient in accordance with a predetermined minimum standard, the socket obtains a percentage of 93% which means that the outlet is in accordance with the specified minimum standard.

Furthermore, for other equipment, there are cleaning tools with a percentage of 80%, which means that cleaning tools are in accordance with predetermined minimum standards, K3 tools get a percentage of 77% which based on criteria is in accordance with predetermined minimum standards, visual aids only get a percentage 60% stating that the presence of teaching aids is not in accordance with predetermined minimum standards, air conditioning gets a percentage of 85% in accordance with predetermined minimum standards.

And the laboratory space infrastructure gets 87% in accordance with predetermined minimum standards. The suitability of all aspects in the computer laboratory or the suitability of the computer laboratory in the competence of Building Information Modeling and Design when referring to the standards in the Regulation of the Minister of Education and Culture Number 34 of 2018 Overall facilities and infrastructure obtain an average percentage of 79%. This shows that each aspect assessed is in accordance with the minimum standards that have been set.

In data collection through a questionnaire / questionnaire which is an assessment of students regarding the condition of infrastructure facilities in supporting learning to achieve learning outcomes The percentage of support obtained from each aspect in the computer laboratory that has been included in the questionnaire is as follows. Chairs, students give a percentage of assessment based on the criteria given by 97% very supportive, on the table aspect with the criteria given a percentage of the assessment is 97% very supportive, cabinets with the criteria given get a percentage of 94% very supportive, on the computer aspect with the criteria those given get a percentage of 91% very supportive, personal computers of students with the criteria given get a percentage of 79% very supportive,

Retrieval of data on student learning outcomes in the ability to practice using computer devices is obtained through documentation. The achievement of student learning outcomes is reviewed in 3 (three) aspects of assessing the competency of students in using computer devices seen in the value of Cognitive, Psychomotor and Affective learning outcomes.

Based on the results of the research, it was found that the availability of DPIB computer laboratory facilities and infrastructure at SMK Negeri 3 Kuningan was in accordance with the minimum standards stated in the regulation of the minister of national education no. 34 of 2018 [9] so that it can be used to support practical learning activities in using computers, especially in building image competencies for students. This is also evidenced by the opinions of students regarding the use of these facilities and infrastructure. They stated that its availability was able to support the process of their practical learning activities. Learning motivation is the tendency of students to carry out learning activities that are driven by the desire to achieve the best possible learning outcomes. So the condition of the facilities that are above the minimum standard category will be able to provide more motivation and enthusiasm for learning in their learning activities. Because better facilities will support more learning activities.

According to Rusmono [12] (2017) learning outcomes are changes in individual behavior which include the cognitive, affective, and psychomotor domains. The results of student competence achievements in using the Laboratory Computer Design Modeling and Building Information are shown in the value of students' practical skills or abilities [13][14][15][16]. Student competency achievements during learning have been adjusted to the Indonesian National Work Competency Standards (SKKNI 2013-207) [17] and Decision Number 029 Learning Outcomes of SMK Centers of Excellence [18]. Both cover aspects of knowledge, skills, work attitudes that are relevant to the implementation of the duties and terms of position to be assisted.

Students learn about the planning, implementation and repair of buildings starting from land measurements, building pre-plans, construction calculations until the final design is presented accompanied by the results of the calculation of the budget plan, work plans, and work implementation requirements (RKS).

In using computer devices, students must be able to master the ability to calculate budgets and draw using computer devices. The results of the documentation regarding the skill scores in using computer devices seen in the Building Information Modeling Design Software Application (APLdPIG) subject show that the overall skill scores of the sample students are in the range of 77 – 88. This proves that the entire sample of students is in the competent category. Then the results of the documentation regarding the value of skills in using computer equipment in the Estimating Construction Cost (EBK) subject, there are 2 students in the 89-100 score range in the very competent category, 64 students in the 77-88 score range in the competent category, 2 students with a score range of 65-76 in the fairly competent category and 4 students with a score range of 53-64 in the incompetent category. The average score of students' skills is in the range of 77-88 so that students are in the competent category.

4. CONCLUSION

Based on the results of the analysis in the discussion of this study, it can be concluded that;

1. The level of suitability of DPIB computer laboratory facilities and infrastructure at SMK Negeri 3 Kuningan includes student chairs, teacher chairs, student desks, teacher desks, cupboards, whiteboards, computer equipment, UPS, printers, LCD projectors, power outlets, cleaning equipment, K3 tools , teaching aids, air conditioning, and computer laboratory room infrastructure on average for 4 computer laboratory rooms a percentage of 80% is in accordance with the standards of the Minister of Education Regulation No. 34 years. 2018.

2. The level of support for facilities and infrastructure includes the condition of the chairs, the condition of the desks, the condition of the cupboards, the condition of the computer, the computer equipment used, the use of personal computer devices, the school's internet connection, the condition of the A3/A4 printer, the condition of the socket, the condition of the LCD projector, the condition of the practice module, the condition of the blackboard, the condition of the laboratory room and other aspects which include cleaning equipment and K3 in supporting the learning outcomes of students obtain an average percentage score of 89% in other words the condition of the facilities and infrastructure of the

DPIB computer laboratory SMK Negeri 3 Kuningan is very good. support.

The availability of DPIB laboratory facilities and infrastructure is in accordance with standards so that the availability of computer facilities and infrastructure is able to support the achievement of drawing competence for DPIB students at SMK Negeri 3 Kuningan.

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