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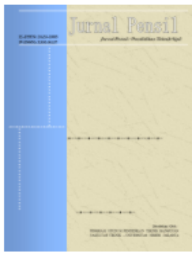

EVALUTION OF LEARNING FACILITIES SUPPORTING CREATIVE PRODUCTS AND ENTREPRENEURSHIP IN MODELING DESIGN AND BUILDING INFORMATION EXPERTISE COMPETENCY

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Abstract

This study aims to gain a general understanding of the state of educational infrastructure and learning facilities for creative and entrepreneurial products, as well as a general understanding of the degree of standard compliance and the appropriateness of the curriculum requirements for Vocational High School Modeling Design and Building Information Expertise Competency. This study employed a descriptive and methodology. An analysis of the infrastructure and learning environments for innovative and entrepreneurial products provides information on the degree of standard compliance,An overview of the condition of learning facilities and infrastructure for creative and entrepreneurial products obtains an illustration that the requirements for facilities and infrastructure for creative and entrepreneurial product learning (PKK) in DPIB expertise competence are in the form of computer graphics, A3 printers, projectors, computer desks, student work chairs, and Split AC. Computer graphics have a quantity proportion of 83.3% and a quality proportion of 33.3%, meaning that in terms of quantity it is sufficient but in terms of quality it needs to be improved. This causes the computer's ability to run software or applications, such as SketchUp and AutoCad, to be limited. Computer capabilities in the laboratory 1 & 2 can only install old software or output, such as AutoCad 2016 and SketchUp 2016, and unable installing rendering software. which will affect the level of suitability and the level of adequacy of the needs of the DPIB curriculum where the demand for vocational expertise competencies, especially DPIB expertise competencies which are closely related to graphics to realize superior global competitiveness.

Keywords: Infrastructure, Learning Facilities, Computer

Introduction

Vocational High Schools (VHS) based on Law Number 20 of 2003 regarding the National Education System (UUSPN) explains that secondary education strives to prepare students for work in specified fields. VHS is a formal educational unit that organizes as a continuation of Middle School, or MTs, or other equivalent forms, according to Government Regulation Number 17 of 2010 concerning Management of Education Implementation. The expertise competency program run by VHS adapts to the demands of the current industrial/work environment. This description is consistent with statement by (Pardjono et al., 2018; Pavlova, 2009), which states that the primary goal of vocational education is to provide students with specialized skills and knowledge of the industrial environment as preparation for finding employment.

The benefits of the importance of vocational education according to (PH, 2013) are as follows: (1) Benefits for students include preparing provisions for work, providing self-concept, developing leadership, preparing for further study, providing basic provisions to achieve income, preparing for a higher career, and being able to adapt to changes that occur; (2) Benefits for organizations / institutions include providing workers who are skilled in the field, have a high work ethic, increase work productivity and quality, and save operational costs; and (3) the community will see an increase in revenue, a decrease in unemployment, and a better population. Indonesia will also be benefited by being in line with development needs. As a result, it is expected that students who graduate from VHS will be prepared to enter the workforce, develop professional attitudes, be capable of choosing appropriate carrers based on their interests and talets, be able to compete, and be capable of developing themselves, and become skilled workers. By offering various forms of stimulus, such as School Operational Assistance known as BOS, Vocational High School Revitalization Program, Teaching Factory Program, and other assistance programs aimed at the public and private VHS, various efforts have been made to continuously improve the quality of schools and graduates (Ghufron, 2018)

One of the elements that needs to be done in order to accomplish these aims is to provide vocational schools with the infrastructure and facilities students need to practice in accordance with the required standards set by the government. This is compatible with (Sudira, 2019) statement that vocational education is dynamic and constantly develops in response to advancements in the industrial sector and standards established to ensure that students' skills and knowledge are valued by employers. Without adequate equipment, from basic to advanced levels, the practice workshop where students study will not allow for the best possible learning. Another viewpoint was expressed by (Aurigemma & etal, 2013; Klotz et al., 2015), who said that by creating an educational model that mixes two settings, namely class and workplace, be it a laboratory or industry, technical information and abilities are easier to learn.

There are minimal requirements for facilities and infrastructure that must be met by each Expertise Competency in VHS according to (Peraturan Menteri Pendidikan Nasional No. 40 Tahun 2008, 2008) concerning Standars for Facilities and Infrastructure for Vocational High School or Madrasah Aliyah/MAK (equivalent form as VHS). The requirements of students for infrastructure and practice facilities can be met by adhering to these minimum requirements. Furthermore, it was stated that "no later than 5 (five) years after this Ministrerial Regulation is stated, the implementation of VHS/MAK is obliged to apply the standard of VHS/MAK facilities and infrastructure as defined in this Ministerial Regulation". As (Storm, 1983) stated it, "Occupatinal skill cannot be taught adequately without the appropriate equipment," learning skills will not go smoothly if it is not accompanied by the suitable equipment. According to that

statement, the curriculum and learning objectives are what are meant when it comes to the necessity for practical workshop equipment and facilities. The importance of facilities and infrastructure was also mentioned by (Agustina et al., 2022; Asnita et al., 2019; Murtinugraha et al., 2021; Setiadi & P.H., 2008; Sirait, 2021; Usiono et al., 2021), who stated that practical facilities and infrastructure had a significant impact on student learning outcomes. The infrastructure and practice facilities that are in good condition will improve student learning results. The infrastructure and facilities at VHS must be complete in order to produce graduates who are competent, and they play a crucial role in the education process (Direktorat, 2020; Sanjaya, 2008).

This definition leads to the conclusion that any educational institution must have the infrastructure and facilities essential to enable a structured and long-lasting learning process (Devi, 2021; Frisdila, 2020; Herman et al., 2021; Ramdhiani & Rahminawati, 2021). The success of students in acquiring the necessary information, knowledge and skills in an effort to prepare themselves for employment in accordance with the demands urged by the job market will be positively impacted by the fulfillment of the completeness of facilities and infrastructure and will provide sufficient opportunities for students to develop themselves and become a contribution to society in general.

According to (Snyder & Hales, 1976), workshop/studio preparation needs to be adaptable in order to accommodate changes in the curriculum. The practice facilities must adapt to changes in the curriculum as well. As a result, practical infrastructure and facilities must not only be modified to the minimal standards but also to the requirements of the curriculum. In vocational education, curriculum development is done with the intention of being able to approach and satisfy the needs of the business and industrial sector. As a result, the infrastructure and facilities used must be able to meet curriculum requirements or provide students a sense of the tools and skills they will need to master while learning.

According to Posser (Dharma et al., 2013; Sudira, 2017; Sudrajat, 2018; Surono & Wagiran, 2016; Wijayanti & Jaedun, 2019), vocational education will be effective in the learning environment is a duplicate of the workplace. If vocational education is delivered utilizing the same techniques, apparatus, and instruments as used on the job, it will be effective. This claim demonstrated the critical role that infrastructure and facilities that are appropriate for the work that students will be doing play in helping them develop the skills required for the workplace. Entrepreneurship-related topics are still being developed and improved. This is indicated by the fact that the entrepreneurship education curriculum has undergone three changes to date: the 2004 revision of the 2006 curriculum, the 2013 curriculum, and the 2017 revision of the 2013 curriculum. Additionally, the names of the VHS's entrepreneurship education courses have undergone three name changes: "Economy and Entrepreneurship (PKWu)", "Crafts and Entrepreneurship", and "Creative Products and Entrepreneurship (PKK)" at the moment.

In contract to the PKWu topic, which has an explicit goal of developing an entrepreneurial spirit in students, the purpose of entrepreneurship education through the PKK topic has not been officially mentioned in the curriculum. In order to develop and have an entrepreneurial viewpoint, PKK learning is a useful subject for applying and exercising knowledge in accordance with areas of expertise. In order for students to grow and collaborate on PKK subjects based on the facilities and infrastructure they have access to, in addition to understanding the lesson's content. This results in the creation of student-produced goods with economic worth in line with market demand. This definition leads to the conclusion that any educational institution must have the infrastructure and facilities essential to enable a structured and long-lasting learning

process. The success of students in acquiring the necessary information, knowledge, and skills in an effort to prepare themselves for employment in accordance with the demands of the working world will be positively impacted by the fulfillment of the completeness of facilities and infrastructure. This will also provide sufficient opportunities for students to frow as individuals and integrate into society as a whole.

Research Methodology

This study is evaluation research, the object of this study is facilities and infrastructure, so it is evaluation research of facilities and infrastructure. The focus of study on the evaluation of facilities and infrastructure is the existing facilities and infrastructure owned by schools. The parameters to be known are the description of the suitability and level of adequacy of facilities and infrastructure with the curriculum. Data collection techniques used in this study using questionnaires, interviews, and documentation.

Results and Discussion

The Modeling Design and Building Information (DPIB) Expertise Competency, in general, concentrates on design learning tasks such as sketching interior and experior building, planning design, development and maintenance management, and calculating material needs and building costs. Construction good and service providers, construction supervisory and maintenance service providers, freelance drafters, planner assistants, supervisor assistants, and construction implementers are just a few of the entrepreneurial opportunities for DPIB graduates, according to the (Direktorat, 2020, 2021). Adequate facilities and infrastructure are required to the greatest extent possible to provide students with skills in accordance with DPIB Expertise Competency. The facilities and infrastructure are in the following conditions as a result of field observations.

Infrastructure of Manual and Computer Drawing Room

One of the practice rooms for completing drawing practical learning utilizing computer equipment is the computer lab. This room is used by students to create a 2D or 3D drawing using software like AutoCAD, SketchUp, and Lumion. Planning the interior and exterior of buildings is a type of task that students frequently complete. The DPIB Laboratory/Workshop's Guidelines for Norms & Standards state that the practice room must have a minimum ratio of 3 m^2/student for a capacity of 18 students. Consequently, 54 m^2 is the required minimum space for practicing digital and computer drawing.

Based on observations, DPIB Expertise Competency at SMK Negeri 2 Yogyakarya has three computer laboratories lined up on the 2nd floor with their respective areas, namely laboratory 1 of 192 m^2, laboratory 2 of 192 m^2, and laboratory 3 of 144 m^2. One laboratory room can accommodate 36 students. Thus, the ratio for each laboratory is around 5.33 m^2 for laboratory 1 and laboratory 2 and around 4 m^2 for laboratory 3.

Table 1. Percentage of quality of computer laboratory infrastructure

Indicator	Standard	Lab.1	Lab. 2	Lab 3.
Capacity per room	18	36	36	36
Minimum ratio	3	5,33	5,33	4
Electic installation	Exist	Exist	Exist	Exist
Internet connection	Exist	Exist	Exist	Exist

Facilities of Manual and Computer Drawing Room

Guidelines for Laboratory/Workshop Norms and Standards for VHS DPIB Expertise Competency describes a list of practical equipment in the practice room for machine and computer drawings with their ratio and specifications. Practical equipment

described in the guideline includes work chairs, work desks, push whiteboards, graphic computers, CAD software, SketchUp software, Lumion software, A4 printers, A3 printers, UPS, projectors, split C, work chairs for students, and automatic level.

Chair

Each computer lab has a number of work chairs for teachers and students that is 100% full. This illustrates how the guidelines and the capacity of laboratory users are taken into account then determining the number of work chairs. The work chairs in computer laboratory 1 are not up to these standards, though, in terms of quality. The work chair is built of wood and does not have any cushion in the seat or back, making it heavy and difficult to sit in for extended periods of time. In the meantime, these rules are followed by the work chairs in computer laboratory 2 and 3. The ability for each user to customize the chair's seat height and the ease of mobility provided by the chair's four wheels are further benefits of this work chairs. Therefore, only 83.3% of teachers and students have access to comfortable work chairs.

Work Table

The work table is one of the facilities set up for teachers in the computer laboratories according to the guidelines. There are four work tables with the following specifications: made from Melamine Faced Chipboard (MFC) wood with dimension of 90 x 50 x 45 cm. Based on the observation, the computer laboratory provides 1 work table for teacher. Work table in computer laboratory 1 and 2 are made of wooden planks with a thichness of 2 cm and have dimensions of 60 x 90 x 76 cm. meanwhile, the work table in laboratory 3 is made of wooden planks with thickness of 2 cm and has dimensions of 42 x 71 x 76 cm. only about 50% of the available work table are in each of the three computer laboratories. The number of work table available is not in accordance with the guidelines. For each computer laboratory, four work tables are typically needed, but only one is really present. Additionally, based on these standards, only 33.3% of work tables are of high quality. The work tables in the computer laboratories are all constructured from solid wood boards that measures 2 cm in thickness. The work table in computer laboratory 3 is not in accordance with the standards in the guidelines.

Computer Desk

The computer desk is used as a surface for storing computer parts. Students use the computer desk to learn at in the computer lab. One room must have a minimum of 18 computer desks or as many as the space can accommodate. The computer desk's features include being made of practical board 25 mm thick with HPL laminate, having a bookshelf area and bag hangers, having unique cable holes, and having measurements of 60 cm by 120 cm by 73 cm.

The computer facility offers students 36 computer desks based on the findings of observations. Computer desks in Computer Laboratory 1 and Computer Laboratory 2 are constructed from 2 cm thick timber planks and have 1 cm thick glass tops. The desk measures 60 cm across, 90 cm long, and 76 cm tall. The computer desk also has shelves for storing books and keyboards, as well as specific slots for connections. The computer desk in laboratory 3 is constructed from 2 cm thick hardwood boards and measures 42 cm broad, 71 cm long, and 76 cm high. There are shelves on the desk for books and keyboards.

In each computer lab, 100% of the available computer desks are used. This demonstrates that the quantity of computer desks is within the permitted range. Computer desks, however, fall short of these norms in terms of quality. According to the recommendations, the computer desk's quality percentage is just 50%. The computer desk can still be a useful workspace for students to use computer equipment.

Whiteboard

To make it simpler for the teacher to explain the written content to the students, the push whiteboard is made to be mobile. There is only one whiteboard per lab, and it has the following features: (1) it is magnetic; (2) it has an aluminum layer on the edge; (3) it has hollow iron legs; (4) it is finished in black powder; (5) it is 240 cm long and 120 cm wide; and (6) it has wheels for legs and a double-faced board. Observations led to the conclusion that each computer lab contains a single whiteboard. The whiteboard has a single side that is 122 x 244 cm in size.

Table 2. Data on the condition of whiteboards in the computer laboratory

Standard	Lab.1	Lab. 2	Lab 3.
1 unit / room	1 unit	1 unit	1 unit
Dimension of 120 x240 cm	122x244 cm	122x24 4cm	122x244 cm
2 face board	1 face	1 face	1 face
Aluminium list	Yes	Yes	Yes
Board magnetic	No	No	No
Hollow iron legs	No	No	No
Wheels on legs	No	No	No

In every computer lab, the percentage of whiteboards reaches 100%. This demonstrates that the number of whiteboards is within the parameters. The whiteboard, however, does not meet the requirements set forth in these recommendations in terms of quality. According to the recommendations, only 50% of whiteboards are of acceptable quality. The thrust whiteboard standard in the guideline makes use of features including wheels, two writing surfaces, and legs constructed of hollow iron. However, the included whiteboard might be useful for learning.

Computer Graphics

A set of tools used in the utilization of computer operations is referred to as computer graphics. According to the specifications, 19 units of computer graphics can fit in one laboratory room. The graphics computer specifications include (1) minimum 2.8 GHz processor with 9 MB cache; (2) RAM capacity of at least 16 GB DDR4 and the capacity can be increased to 64 GB; (3) minimum storage capacity of 128 GB SSD plus 2 TB HDD; (4) VGA Card of at least 4GB DDR5; and (5) a minimum screen size of 23.5" with a multi-touch LED monitor and a minimum resolution of 1920 x 1080. In addition to hardware specifications, computer graphics also need to provide several softwares that support learning, such as CAD, SketchUp, and Lumion. Based on the observation results, there are 36 functional computer graphics for computer laboratory 1; 36 pieces for 2 computer labs; and 10 units for computer labs 3. The graphics computers are also installed with learning support software, namely SketchUp and CAD.

Computer specifications in computer laboratory 1 use Intel Core 3 (i3) and Intel Core 5 (i5) processors with 3.1 Ghz and 6 MB cache. The RAM capacity ranges from 2 to 8 GB and the storage capacity is less than 1 TB HDD. The VGA card used still has a capacity of 2GB and 4GB DDR3, and there are even computers that don't use VGA cards. The computer uses a 20 inch or 51 cm screen with a resolution of 1024 x 768 to 1360 x 768.

Computer specifications in computer laboratory 2 use Intel Core 5 and Intel Core 7 (i7) processors with 3.3 GHz and up to 6 MB cache. RAM capacity ranges from 4 to 8 GB and storage capacity reaches 1 TB HDD. The VGA card used still has a capacity of 2 to 4 GB DDR3. Computers use 20 inch or 51 cm and 19 inch or 48 cm screens with a resolution of 1024 x 768 to 1600 x 900.

Computer specifications in computer laboratory 3 use an Intel Core 7 (i7) processor with 2.9 GHz and 16 MB cache. The RAM capacity is 16 GB DDR4 and the storage capacity is up to 2 TB HDD. The VGA card used has a capacity of 8 GB and is supported by Nvidia GTX 1650 4 GB DDR5. The computer uses a 24 inch or 61 cm screen with a resolution of 1920 x 1080.

Table 3. Data on the condition of computer graphics in the computer laboratory

Standard	Lab.1	Lab. 2	Lab 3.
19 units per room	36 units	36 units	10 units
Prosessor min. 2,9 GHz	3,1 GHz	3,3 GHz	2,9 GHz
Cache 16 MB	6 MB	6 MB	16 MB
RAM min 16 GB DDR4	2-8 GB	4-8 GB	16 GB
VGA Card min 4 GB DDR 5	2 – 4 GB DDR3	2 – 4 GB DDR3	8 GB + 4 GB DDR5
Screen min 23,5" / 60 cm	51 cm	51 cm dan 48 cm	61 cm
Resolution 1920 x1080	1024 x 768 1360 x 768	1024 x 768 1600 x 900	1920 x 1080

The percentage of computer quantity in 3 computer laboratories reached 83.3%. This shows that the number of computers in the computer laboratory is not in accordance with the capacity of laboratory users and guidelines. The computer laboratory that is not yet suitable, namely computer laboratory 3 which only has 10 computers. The number of computers in computer laboratory 3 has not been able to support students in one class. However, the quality of computers in computer laboratory 3 is in accordance with the standards in these guidelines. Meanwhile, computers in computer laboratories 1 and 2 are not in accordance with the standards applied. The computers in the two laboratories have been around since 2010 and have not been upgraded in capacity, such as processors, RAM, storage, VGA cards, and screens/monitors. Even so, the computer can still operate the application properly if the assignment scale is still light. However, the computer will start having problems if the assignment scale is heavy enough. These problems include the application stopping suddenly when operating, the application cannot run smoothly, and exiting the application without a command. Therefore, computers in computer laboratories 1 and 2 need to be upgraded or updated for the convenience of practical learning.

Computer capabilities in the computer laboratory also affect the application or software that will be used to support learning. The guide describes 3 pieces of software, namely CAD software, SketchUp software, and Lumion software. The limitations of computer capabilities, especially in computer laboratories 1 and 2, cause the software that can be operated to be quite limited, namely CAD software and SketchUp software. The selected CAD software versions are AutoCAD 2011 and AutoCAD 2016, while the selected SketchUp software are SketchUp 2016 and SketchUp 2022. Therefore, the percentage of software quality in computer laboratories is only around 50%.

In addition to the limitations of computer capabilities, each computer laboratory does not have a UPS to store electrical power for computers when there is a power failure. In addition, the UPS can prevent loss of student work or provide an opportunity for students to save their work before the computer turns off. The Guidelines specify that a UPS needs to be provided for each computer equipment provided. Therefore, the percentage of UPS quantity and quality in the 3 computer laboratories is 0% or none.

Printer A4 & A3

The printer functions as a printing device with paper as the medium. The guideline mentions two types of printers as standard facilities, namely A4 printers and A3 printers. The number of A4 printers and A3 printers for one laboratory room is 3 each. The specifications for the A4 printer include (1) having the ability to print, scan, duplicate, and can be connected via wifi intermediaries, (2) the printer speed reaches 33 ppm, (3) the printer resolution reaches 5760 dpi x 1440 dpi; and (4) the dimensions of the printer are 47.2 cm long, 22.2 cm wide and 13 cm high. Meanwhile, the specifications for the A3 printer include (1) having the ability to print, scan, duplicate,

and can be connected via a wifi intermediary; (2) configuration of 400 x 2 nozzles black and 128 x 2 nozzles per color; (3) Bi-Directional printing and Uni-Directional printing; and (4) resolution up to 4800 x 2400 dpi. Based on the observations, a total of 7 A4 printers with the Cannon LBP 2900 brand totaled 4, 1 Brother DCP-T710W, 1 Samsung ML-3310ND, and 1 HP Laser Jet P1006. Meanwhile, a total of 2 A3 printers with the Epson L1800 brand.

The Cannon LBP 2900 Printer Specifications, among others, can only print monochrome, print resolution reaches 2400 x 600 dpi, print speed is around 13 ppm, and has dimensions of 370 x 251 x 217 mm. Meanwhile, the specifications of the Brother DCP-T710W Printer, among others, can print monochrome or color, has print, scan, copy and wifi features, has dimensions of 435 x 380 x 195 mm, print resolution reaches 1200 x 2400 dpi, and a print speed of around 12 ppm. Meanwhile, the specifications for the HP Laser Jet P1006 Printer, among others, have dimensions of 349 x 238 x 195 mm, can only print monochrome, print speeds reach 17 ppm, and print resolution of 1200 x 600 dpi. In addition, there is the Samsung ML-3310ND A4 printer which has specifications, including a print resolution of up to 1200 x 1200 dpi, a print speed of around 31 ppm, has dimensions of 368 x 366 x 253 mm and can only print monochrome. The Epson L1800 A3 printer has specifications, including being able to print in color or monochrome, print resolution reaching 5760 x 1440 dpi, configuration of 90 nozzles per color, and Bi & Uni direction printing.

Table 4. Data on the condition of printers in the computer laboratory

Standard	Lab.1	Lab. 2	Lab 3.
Printer A4 3 units	3 units	4 units	0
Printer A3 3 units	2 units	0	0

In the three computer labs, a total of 66.7% of A4 printers were present. The percentage of A3 amount is just about 16.7% at the moment. This demonstrates that the requirements set forth in the recommendations are not being met, particularly in computer laboratory 3 because it lacks A4 printer and A3 printer capabilities. As a result, schools must purchase A4 and A3 printers to enable printing of student assignment results in each computer lab.

According to the specifications in the recommendations, each A4 printer and A3 printer only has a 50% quality percentage. However, both A4 and A3 printers can be effectively used to promote learning. However, the specifications of both printers need to be increased according to the standards in the guidelines in order to produce better images or printed works, especially on A3 printers.

UPS

A UPS device must also be included with the graphics computer. In the event of an unexpected power outage, the UPS serves as a storage device for electrical energy. In a computer lab, 19 units, or the number of machines, are required in terms of UPS. The UPS is equipped with PROLINK PRO 1501SFC/SFCU, and its features include (1) Batteries up to 12 V / 9 AH x 2; (2) charging duration between 2 and 4 hours; (3) and an output power of up to 1500 VA / 900 W. According to observations, not all computer labs have UPSs, which means that if there is a power outage, the computer will shut down immediately.

Projector

Using a laptop or PC to display presentation visuals is how the projector works. One unit of projectors is required for one laboratory space. The projector's specs include (1) using a three-LCD system; (2) a contrast ratio of up to 15000:1 and a brightness of 4000 lumens; and (3) a 4:3 aspect ratio with an XGA resolution of 1024 x 768. Observations show that each computer lab has a single Epson EB-WO5 projector. According to its specifications, the Epson EB-WO5 has a brightness level

of up to 4000 lumens, a contrast ratio of 15,000:1, a 16:10 aspect ratio, a resolution of 1280 x 800 (WXGA), and it employs a 3 LCD technology system.

Table 5. Data on the condition of projectors in the computer laboratory

Standard	Epson EB-WO5
1 unit per room	1 unit per room
3 LCD technology	3 LCD
Brightness Contrast 15.000:1	15.000:1
Brightness 4000 lumens	Brightness 4000 lumens
Aspect ratio 4:3	Aspect ratio 16:10
Resolution XGA 1024 x 768	Resolution 1280 x 800 (WXGA)

In the computer lab, 100% of the available projectors are in use. This demonstrates that the computer lab's projector count conforms with the specifications set forth in the guidelines. Additionally, the projector quality percentage also approaches 100%. This shows that the projector specifications offered in the computer lab complies with the requirements in these recommendations.

Air Conditioner

In order to chill the space and maintain the air's temperature and humidity in the computer room, a sort of split AC is given in the lab. There are two units of air conditioners placed in the computer lab. The split air conditioner includes the following features: standard PK 2.5 with a 2200 Btu/h capacity; air purifying, deodorizing, and bacteria filters; environmentally friendly Freon; and 1950 Watts of power consumption. With the exception of the three computer labs, 2 Daikin brand AC units were placed in each computer lab based on the findings of observations.

Table 6. Data on the condition of air conditioner in the computer laboratory

Standard	Daikin
1 unit per room	2 units per room
PK 2,5	PK 2
Capacity 2200 Btu/h	17100 Btu/h
Air purifying filter, deodorizing and bacteria	Yes
Environmentally friendly freons	Yes
Electricity consumption 1950 Watt	1524 Watt

In the computer lab, split air conditioning makes up 66.7% of the total quantity. This is as a result of the computer lab's lack of Split AC. 3. According to the guidelines, each room or computer lab must have at least one Split AC unit installed. Split AC, on the other hand, has a quality rate of about 50%. However, two Split AC units assist the Split AC in Computer Laboratories 1 and 2, giving each computer lab a total Split AC capacity of 4 PK.

Automatic Level

The primary instrument for conducting leveling surveys is Automatic Level. Up to 4 units of the tool must be available in a single computer lab area. The Automatic Level's specs provide for a 32x magnification, positive imaging, a 40 mm maximum object diameter, an error reading (error) per kilometer round blister of 8'/2 mm, and a dial scale value of 1" or 1 gon. According to observations, the computer lab features six automatic SOKKIA B40 levels. Magnification up to 24x, imaging positively, object diameter up to 32 mm, read errors per kilometer round blister of 2 mm, and a dial scale value of 1 gon are among the specifications for the automatic level.

Table 7. Data on the condition of automatic level in the computer laboratory

Standard	SOKKIA B40
4 units per room	Total 6 units

Standard	SOKKIA B40
Magnification up to 32x	Magnification up to 24x
Image positive	Yes
Diameter up to 40 mm	Diameter up to 32 mm
Error read 8'/2 mm per kilometer	Error read 2 mm per kilometer
Dial scale value 1" or 1 gon	Dial scale value 1 gon

Figure 1. Automatic level in the computer laboratory

In computer labs, Automatic Level quantity makes up about 33.3% of the total. This demonstrates that the number of Automatic Levels does not meet the guidelines in the recommendations. In contrast to the standard of 4 Automatic Levels for a single room or laboratory, only 6 Automatic Levels are available for the three laboratories. Additionally, the Automatic Level's quality rate hovers around 50%. This shows that the Automatic Level specs given do not meet the requirements of these recommendations. The Automatic Level can still be utilized to aid with practical learning, though.

There are many implementation outcomes for each Expertise Competency in the Construction and Property Technology Expertise Program at SMK Negeri 2 Yogyakarta. The competency of Building Information Modeling and Design expertise is focused on service products, such as furniture design, house design, shop design, and service catalogs or pamphlets.

The Modeling Design and Building Information expertise competency uses a computer laboratory as a practical learning space to produce innovative service products. The facilities used in learning Creative Products and Entrepreneurship practices include computers, work chairs for students, computer desks, SketchUp software, V-Ray software, A3 printers, and projectors. However, these facilities have not fully supported learning about Creative Products and Entrepreneurship practices. This is evidenced by the computer specifications being too old in computer laboratories 1 and 2 because these computers have been used since 2010. Therefore, the computer specifications are not sufficient to run the SketchUp software or V-Ray software optimally and the color gradations displayed. Meanwhile, computer specifications in computer laboratory 3 are very adequate for learning. However, the number of computers does not match the number of students in one class. Learning Creative Products and Entrepreneurship requires students to produce innovative products according to their areas of expertise, so that Basic Competency (KD) in learning Creative Products and Entrepreneurship is directed to produce a product. Some of these basic competences include (4.4) making designs/prototypes and packaging of goods/services, (4.6) making worksheets/work drawings for making prototypes of goods/services, (4.8) making prototypes of goods/services, (4.13) perform product/service product assembly, and (4.14) conduct product/service product testing. Therefore, adequate facilities and infrastructure are needed to realize the achievement of KD.

Based on the results of this analysis, the quantity of facilities in the Mechanical Drawing and Computer Practice Room in the Modeling Design and Building Information expertise competency can be categorized as "According" to DPIB Laboratory/Workshop Norms & Standards Guidelines with a percentage of 65.15%. Meanwhile, the quality of the facilities in the room is in the "Appropriate" category with a percentage of 54.54%. Recapitulation of the percentage of each equipment in the Machine Drawing and Computer Practice Room as follows.

Direktorat, (2020) explained that unfulfilled school facilities and infrastructure

could have an impact on disrupting the learning process and students could not practice the knowledge they had acquired. This will cause students to rely only on theory without any real practice in learning, giving rise to difficulties in understanding lessons at school. The gap between understanding theory and practice will result in low quality learning in the end. Learning activities are not going well and learning objectives are also difficult to achieve due to the condition of facilities and infrastructure that are not good. Therefore, facilities and infrastructure that meet the criteria or standards of supporting learning are mandatory for every school so that learning activities can be carried out properly (Direktorat, 2020). The next explanation explains that the fulfillment of learning facilities and infrastructure is not directly fulfilled, but must pay attention to the criteria or standards of facilities and infrastructure. In addition, efforts to develop facilities and infrastructure at SMK, especially laboratory facilities or practical workshops, must be carried out to keep up with the times or be up to date.

The primary purpose of all TVE programs is the acquisition of skills and attitudes for gainful employment in a specific occupation or professional area. One of the most significant aspects of TVE is its inclination towards the world of work and the emphasis of the curriculum on the acquisition of employable skills. TVE delivery systems are therefore; well placed to train the skilled workforces that the nation needs to create employment for the youths and emerge out of poverty (Audu et al., 2013; R et al., 2013).

Mar, (2011) in introducing UNESCO's technical vocational education and training definition and strategy, stated that TVE is defined as a comprehensive term referring to those aspects of the educational process involving, in addition to general education: (1) the study of technologies and related sciences; (2) as well as the acquisition of practical skills, attitudes, understanding, knowledge relating to occupations in various sectors of economic and social life. (Audu et al., 2013) TVE is to be understood as: (1) an integral part of general education; (2) a means of preparing for occupational fields and for effective participation in the world of work; (3) an aspect of lifelong learning and a preparation for responsible citizenship; (4) an instrument for promoting environmentally sound sustainable. Development (Greening TVE International Framework); (5) a method of facilitating poverty alleviation.

Entrepreneurship development programs among Vocational School continue to be developed through various schemes by the Directorate of Vocational High School Development of the Ministry of Education and Culture (Kemendikbud). The program developed by the Ministry of Education and Culture by combining Entrepreneurship Education in Vocational High Schools with the "Working, Continuing Study, and Entrepreneurship" (BMW/ bekerja, Melanjutkan, Wirausaha). The entrepreneurial learning strategy with the program focuses on production and business-based learning. Entrepreneurship learning through the subject of Creative Products and Entrepreneurship (PKK) currently does not only discuss theoretical aspects, but students are also required to produce innovative products according to their areas of expertise (Sudiyono & Alip, 2016).

Entrepreneurship development programs among SMKs continue to be developed through various schemes by the Directorate of Vocational High School Development of the Ministry of Education and Culture (Kemendikbud). The program developed by the Ministry of Education and Culture by combining Entrepreneurship Education in Vocational High Schools with the "Working, Continuing Study, and Entrepreneurship" (BMW) program. The entrepreneurial learning strategy with the program focuses on production and business-based learning. Entrepreneurship learning through the subject of Creative Products and Entrepreneurship (PKK) currently does not only discuss theoretical

aspects, but students are also required to produce innovative products according to their areas of expertise (Direktorat, 2021).

Entrepreneurship subjects which so far have only taught theoretical aspects, however Currently, entrepreneurship subject teachers must collaborate with productive teachers to empower students to produce creative products that have selling points in accordance with their areas of expertise. Opportunities to produce products that have a very large selling value, such as the competence of Building Modeling and Information Design (DPIB) expertise that can produce a product design or service design in designing a building. Creative Products and Entrepreneurship (PKK) subjects are eyes lessons that support students to be ready for entrepreneurship. Learners get learning according to Core Competencies (IC) and Basic Competencies (KD) where students can think creatively in creating an idea or opportunity to realize the design or innovation of a product properly. This is evidenced by KD which directs to produce products, such as KD (4.4) Making designs/prototypes and packaging of goods/services, (4.6) Create worksheets/work drawings for making product prototypes goods/services, (4.8) Making prototypes of goods/services, (4.13) Doing assembling goods/services products, and (4.14) Performing product testing goods/services. The five KDs are a form of concrete skill can be interpreted as a more motoric skill as development of learning in schools independently (Kemendikbud, 2018).

Creative Products and Entrepreneurship (PKK) subjects can be categorized into two major sections, as hard skills are creative products, and soft skills are entrepreneurship. This subject can be classified as knowledge-transscience knowledge, which is to develop knowledge and practice art-based life skills and economic-based technology. The learning begins with practicing expressive-creative abilities to express ideas and ideas to please others, and is rationalized technologically so that these skills lead to appreciation of renewable technologies, agronomic results, and are applicable in utilizing the surrounding environment by taking into account ecosystem, management and economic impacts (Ministry of Education and Culture, 2014). The Ministry of Education and Culture (Kemendikbud) through the Directorate General of Secondary Education and the Directorate of Higher Education has implemented entrepreneurship education as a concrete form to encourage creativity, innovation, sportsmanship and entrepreneurship in educational methodology (Peraturan Presiden Nomor: 6 Tahun 2009, 2009). The hope of holding entrepreneurship education is that SMK graduates can open up fields work independently according to their expertise. Additionally, support government towards SMK can produce graduates who have technical skills and managerial skills.

The implementation of entrepreneurship education requires a thorough planning of the school. the planning consists of 3 parts that need to be prepared, namely (1) related to school commitments stated in the vision and mission of the school as well as explicit goals, (2) provision of facilities practice of students and teachers, and (3) curriculum prepared to be able to implement the contents of the curriculum properly (Hidayat et al., 2018; Nurdina et al., 2019; Prihadi et al., 2021; Winarno, 2015). Creative Products and Entrepreneurship (PKK) subjects in all skill programs can achieve the goals of entrepreneurship education based on the Curriculum which has been announced but with the condition that it is necessary to provide assistance for the knowledge and skills of teachers on the basis of entrepreneurship and selling products or services (Prihadi et al., 2021; Rachmad Prihadi, 2019). Vocational High Schools are able to create creative products or services that are feasible and have selling values that vary according to their competency skills. However, in the case of business activities or start-ups created and managed by groups of students, teachers need assistance from industry in their

implementation. This is also explained (Diwangkoro & Soenarto, 2020) explaining that the factors supporting the success of learning creative and entrepreneurial products in Vocational Schools include (1) standardized facilities, (2) educators or instructors who are certified and have experience, (3) additional experience for students to ensure work readiness, (4) respect for customer satisfaction, and (5) commitment to maintain quality. In addition, the supporting factors for success according to (Sudiyono & Alip, 2016) are (1) the competence of educators or instructors, (2) the readiness of students, (3) the availability of equipment and materials as needed, and (4) sufficient capital.

Conclusion

The description of the state of the learning facilities and infrastructure for innovative and entrepreneurial products in PKK practical learning on DPIB expertise competency, including computer graphics, A3 printers, projectors, computer desks, student work chairs, and Split AC, can be drawn based on the study's findings. The quantity percentage for computer graphics is 83.3%, and the quality percentage is 33.3%. To match the room capacity for students in one group, notably in computer laboratory 3, the number of computers needs to be increased. There are enough computers in computer labs 1 and 2 to occupy the space, but computer laboratory 3 only has 10 units, necessitating the purchase of extra computer hardware. Additionally, computer specs in computer labs, particularly in computer labs 1 and 2, need to be upgraded or improved. computers that do not meet the standards' requirements for standard specs. As a result, the computer can only execute a certain number of programs, including SketchUp and AutoCad. Older software or apps can only be installed on the lab computers; Lumion rendering software cannot yet be installed. While in computer lab 3, the computer's specifications have been satisfied so that it may run the most recent releases of software or programs, provide an overview of the degree of compliance with standards, and provide an overview of the sufficiency of the curriculum requirements.

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