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ANALYSIS OF THE FEASIBILITY OF WOOD WORKSHOP FACILITIES AND INFRASTRUCTURE THROUGH THE VIRTUAL LABORATORY CONCEPT IN PREPARING EMPLOYABILITY SKILLS FOR PROSPECTIVE VOCATIONAL SCHOOL TEACHERS

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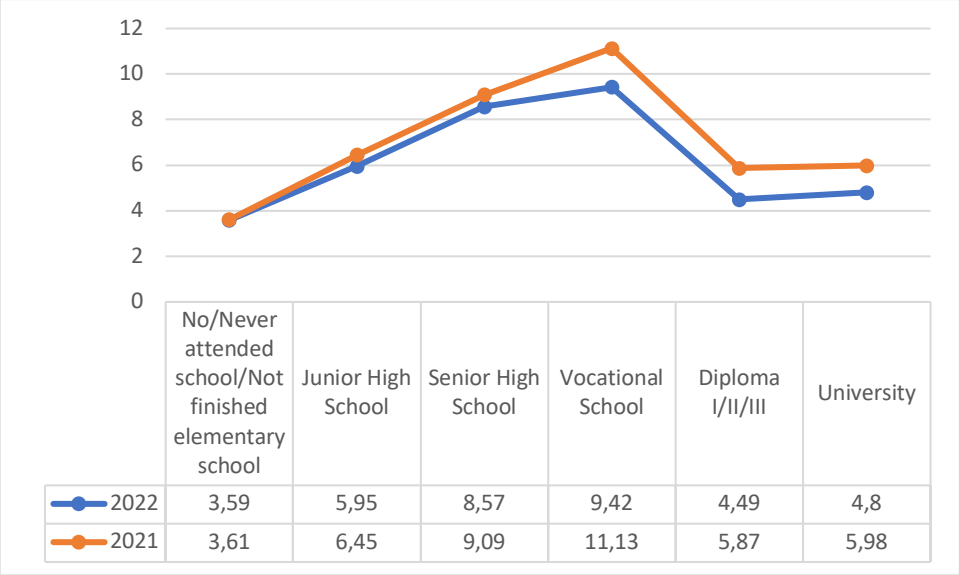
Abstract

This study aimed to determine the feasibility of the wood workshop area in the Wood Stone and Plumbing Workshop, Faculty of Engineering, State University of Medan, based on the required standards. This is done to provide comfort for users of the Wood Stone and Plumbing Workshop, Faculty of Engineering, State University of Medan. This study is a type of research with a descriptive, evaluative method. The subjects in this study were the Wood Stone and Plumbing Workshop, the Faculty of Engineering, the State University of Medan, and the Wood Workshop. In contrast, the object of the study was the area of the Wood Workshop workspace, Faculty of Engineering. Data collection methods were by interview, observation, and documentation. The data analysis technique was carried out using a quantitative method, namely comparing the research data at the Wood Stone and Plumbing Workshop, Faculty of Engineering, State University of Medan, with existing standards and supported by the results of field observations. The results of this study are that the area of the Wood, Stone and Plumbing Workshop workspace at the Faculty of Engineering, State University of Medan meets the space standards, namely 128 m2, which is smaller than the standard size of 256 m2, and the area of the instructor's room at the Wood, Stone and Plumbing Workshop, Faculty of Engineering, State University of Medan does not meet the space standards, 40 m2, which is smaller than the standard size of 48 m2.

Keywords: Feasibility Analysis, Wood Workshop, Virtual Laboratory, Employability Skills

Introduction

Vocational secondary education is education at the secondary education level that prioritizes the development of students' ability to carry out certain types of work. Vocational secondary education prioritizes students' readiness to enter the workforce and develop a professional attitude. By its form, vocational high schools organize educational programs tailored to the types of employment (Masnu'ah et al., 2023).



	No/Never attended school/Not finished elementary school	Junior High School	Senior High School	Vocational School	Diploma I/II/III	University
2022	3,59	5,95	8,57	9,42	4,49	4,8
2021	3,61	6,45	9,09	11,13	5,87	5,98

Figure 1. Open Unemployment Rate by Education Level

Vocational high schools will produce students ready to work in secondary educational institutions, namely vocational schools. This also aligns with the educator who created an educator from higher education (Rudi et al., 2024). Vocational high schools have a concentration in wood construction in high school. Wood construction in vocational high schools has facilities and infrastructure to create a product from learning outcomes (Subiyantari et al., 2024). An educator with expertise in wood workshop management and facilities is needed to produce good products. So, of course, building engineering students are prepared to become professional teachers, especially in the management of wood workshops (Atika et al., 2023).

The availability of sufficient infrastructure and educational facilities that can be used optimally through a good learning process is one of the factors for the success of educational programs (Woga et al., 2023). Educational institutions will be realized if adequate facilities and infrastructure accompany them, for we can ensure that the available facilities and infrastructure are relevant to the needs (Atika et al., 2024). The education program's success will significantly support the implementation of effective and efficient learning that can develop human resources in schools. Objectives. For the educational goals as well as the vision and mission of the school to be realized, further studies are necessary on the management of facilities and infrastructure (Susanti, 2013).

Educational facilities are needed in the mobile and immobile learning process to achieve educational goals smoothly, orderly, effectively, and efficiently (Nurhayanti et al., 2021). Educational infrastructure is a facility that indirectly supports the course of the educational or teaching process, such as school yards, gardens or gardens, roads to school, school rules, and so on. Educational facilities and infrastructure need proper management to produce graduates suitable for use in the community (Wardina et al., 2019).

Educational infrastructure is one of the supporting factors in achieving the success of the teaching and learning process in educational units (Rahayu et al., 2024). Of course, this can be achieved if adequate facilities and facilities are available and accompanied by optimal management. Good facilities and infrastructure management are expected to create a clean, neat, and beautiful environment to create comfortable and pleasant conditions for lecturers and students in the Kagyu workshop in producing a project (Abdi Nugraha et al., 2021). In addition, there is also the availability of learning tools or facilities that are adequate and according to needs and can be used optimally for the benefit of the education and teaching process on campus, both by lecturers as teachers and students as users of wooden workshops (Simamora et al., 2023).

The purpose of managing educational facilities and infrastructure is to provide services professionally so that the learning process can occur effectively and efficiently (Yulanto et al., 2024). The teaching and learning process will be more effective and of higher quality if supported by adequate facilities and infrastructure (Hikmah et al., 2017; Sahid & Rachlan, 2019). The teaching and learning process is a series of activities by lecturers and students using the available facilities and infrastructure to obtain optimal learning outcomes (Hasan Mustofa et al., 2023). Based on the problems presented, the purpose of this study is to determine the concept of the Virtual Laboratory Wood Workshop in preparing the Employability skills of prospective vocational school teachers and to analyze the feasibility of the standard facilities and infrastructure of the wood workshop at Medan State University (Novyanti et al., 2024).

Wood Workshop Room

The gathering place of objects and events in a three-dimensional space is called space, especially our existence in an area that has been designed in such a way as to fulfil a particular purpose. Human activities to perform physical and emotional needs are in a space. Meanwhile, workshops are places used for practical activities to hone skills and to realize a teaching project in various types of work (Pratama, 2021). The space's quality requirements consist of general and unique requirements. General requirements are requirements that, in general, must be developed according to the circumstances and conditions of the local environment. Special requirements contain standard sizes to handle the procurement of space facilities. The size of the wood workshop practice room is determined based on the Number of practical lessons listed in the SMK program structure (Rahmah, 2023).

Lumber workshops should be used by several classes/working groups. In addition to the main room called the workshop (Rahman et al., 2023)it still needs to be supported by other rooms, namely: (a) Teacher/instructor room, (b) Explanation/tutorial room, (c) Tool room (d) Workshop/toolman room (e) Material research warehouse (f) Storage warehouse (g) Changing rooms for women and for men (h) WC/sink for women and men respectively (i) WC/sink for teachers.

All practical activities take place in the workshop. Workshops and practical facilities are essential elements, even becoming a characteristic of vocational education (Maharani et al., 2023). In Ministerial Regulation No. 40 of 2008, there are various rules regarding the standards of facilities and infrastructure that must be met in each department in each vocational / MAK educational institution. The following is the standard data on facilities and infrastructure of the wood practice room/workshop according to the Minister of National Education No. 40 of 2008: (1) The practice room of the Wood Construction Engineering Expertise Program functions as a place for learning activities: basic work/manual woodworking, woodworking-machinal, essential work of building construction, construction of space partitions, and wood construction. (2) The minimum area of the practice room of the Wood Construction Engineering Expertise Program is 304 m^2 to accommodate 32 students, which includes 128 m^2 wood-hand work area, 64 m^2 wood machine work area, 64 m^2 wood construction work area, 48 m^2 storage and instructor space. (3) The practice room of the Wood Construction Engineering Expertise Program is equipped with infrastructure as listed in the following Table Type, Ratio, and Description of Infrastructure Standards for the

Practice Room of the Wood Construction Engineering Expertise Program (Hasan Mustofa et al., 2023).

Table 1. Type, Ratio, and Description of Infrastructure Standards for the Practice Room of the Wood Construction Engineering Expertise Program

No.		wide	Description
1	Woodworking area	8 m2	Capacity for 16 students The minimum area is 128 m2 The minimum width is 8 m2
2	Woodworking machine area	8 m2	Capacity for 8 students The minimum area is 64 m2 The minimum width is 8 m
3	Timber construction work area	8 m2	Capacity for 8 students The minimum area is 64 m2 The minimum width is 8 m
4	Storage room and instructor	4 m2	The minimum area is 64 m2 The minimum width is 8 m

The practice room of the Wood Construction Engineering Expertise Program is equipped with facilities as listed in Table 2 to Table 4.

Table 2. Standards of Facilities in Hardwood Work Areas

No.	type	ratio	Description
1	Workbench Desk Chair/stool Tool and material storage cabinets	1 set/area	To drink16 peseta educated on the essential work of hand woodworking
2	Woodworking area	1 set/area	To drink16 peseta educated on the essential work of hand-woodworking
3	Timber construction work area	1 set/area	To support drinking16 peseta edutain in essential carpentry work
4	Storage room and instructor	1 set/area	To support the use of 16 students in the implementation of theoretical teaching and learning activities
5	Contact Box	Minimum 2 pieces/area	To support the operationalization of equipment that requires electrical power
6	Trash can	Minimum 1 piece/area	

Table 3. Standard facilities in the woodworking area

No.	type	ratio	Description
1	Workbench Desk Chair/stool	1 set/area	To drink 8 peseta education on woodworking machine work

	Tool and material storage cabinets		
2	Equipment for woodworking machine work	1 set/area	To drink 8 pesetas distilled in wood-based work using a machine
3	White board	1 set/area	To support drinking16 peseta edutain in essential carpentry work
4	Storage room and instructor	1 set/area	To support drinking 8 students in the implementation of theoretical teaching and learning activities
5	Contact Box	Minimum 1 piece/area	To support the operationalization of equipment that requires electrical power

Table 4. Standard facilities in storage rooms and instructors

No.	type	Ratio	Description
1	Workbench Work chair Tool and material racks Tool and material storage cabinets	1 set/area	To drink 12 instructors
2	Equipment for storage and instructor rooms	1 set/space	To drink 12 instructors
3	Data board	1 set/space	For data collection on student progress and practice rooms
5	Contact Box	Minimum 2 pieces/space	To support the operationalization of equipment that requires electrical power
6	Trash can	Minimum 2 pieces/area	

Workshop Equipment

Workshop facilities are synonymous with practical infrastructure. Government Regulation Number 19 of 2005 concerning National Education Standards, Chapter VII Article 42 emphasizes emphasizes Stating that (1) Each educational institution must have facilities that include furniture, educational equipment, learning media, books and other learning resources, consumables, and other equipment necessary to support the smooth and sustainable learning process, (2) Each educational institution must be equipped with infrastructure that includes land, classrooms, educational institution leadership rooms, teaching staff rooms, Administration rooms, libraries, laboratories, workshops, production unit rooms, canteens, electrical and service installations, sports facilities, places of worship, play areas, creative rooms, and other facilities needed to support the smooth and sustainable learning process. (Rahardiani, 2017).

The facilities in the available workshops affect the process and practice results. The completeness of workshop facilities can be interpreted as the availability of everything (objects) owned by students and can support both directly and indirectly) in the practice process. Without adequate facilities, the teaching and learning process will not run smoothly (Mufhidin & Chaniago, 2023). A tool is a means used to process, inspect, observe, test, make, measure, check, disassemble, install, and others from an object to obtain the desired result, whether it is in the form of a finished product, a reading of numbers, an indicator, or an inevitable conclusion (Anisah et al., 2023) . The tools here can be software, hardware, or a combination. Software is in the form of a specific program or table reading, while hardware is usually in the form of machines or manual tools that are lightweight or portable (Setyawan et al., 2023). The tools in school workshops are mainly in the form of hardware or tools in the form of hardware, while those in the software are relatively small (Atika et al.2020).

Classifying practical facilities by type into three types: 1) the leading equipment is a tool/machine where students learn one or several skills/skills (commonly called working stations), 2) standard equipment is the completeness of an equipment that is as many as the leading equipment, 3) additional equipment is the completeness of an equipment that is not as much as the leading equipment (Silitonga & Jin, 2023). Regarding the calculation of the ratio of the Number of practical tools and the Number of students as follows:

$$\text{ALT (a)} = \frac{SPT\ x\ JAD\ (a \ldots z)}{JAZ\ (a \ldots z)}$$

$$\text{ALT (b)} = \frac{RGK\ x\ JAD\ (a)}{\sum JAZ\ (a \ldots z)}$$

ALT(a) = Number of single working stations
ALT(b) = Number of double working stations
STP = Number of students practising
RGK = Number of work teams
JAD(a...z) = Practice tool clock
∑ JAD (a...z) = Number of hours the tool is used

According to Bustami Achir in (Widiantara et al., 2023a), in determining the ratio of the Number of tools to the Number of students/working groups in the calculation above, three things must be taken into account, namely:
1. Presenting practical lessons must be performed rotationally for individuals and groups.
The efficiency of using the tool is equal to:

$$\frac{\text{Number of students in the workshop x tool usage time}}{\text{number of tools x How long the tool can be used}}$$

For each student in one group to practice, the Number of single working stations in one practice room equals the Number of practical students. In contrast, the Number of double working stations in the room equals the Number of work squads in the practice room (Negara et al., 2023).

2. Equipment is one of the facilities that affects the teaching and learning process. In producing graduates who are ready to work and able to compete in the world of work, it is hoped that the equipment in vocational schools is the same or not much different from what is used in the world of work today. Equipment required for work practice in a wood workshop, namely Measuring and checking tools (Setout tools such as meters, right angles and protractors, cutting tools (cutting tools, saws/splitters, shavings / levelling tools (plane), such as hand crab types (Alaska et al., 2023a). Scraping tools, such as wood chisels, and Borring tools, such as hand drills. Special tools, such as pencils, hammers, cockatoos, and screwdrivers. Electric hand drill, explaining hand drills with several drill bits used, Electric hand saws, Circle saws, including electric hand saws with their welding procedures, Electric hand crabs / Hand planer, containing about electric hand crabs and how to use them, Electric hand routers, explaining hand routers and how to use them, Electric hand jig saws, explaining fordable jig saws, saw jig bit and its uses, Electric hand sandpaper includes the types of electric hand sanding equipment and its uses (Widiantara et al., 2023)

Workshop Furniture

Facilities or furniture that must be in the wood workshop have been regulated in Permendiknas No. 40 of 2008. Furniture, according to its placement, can be grouped into 2 parts, namely furniture that has a permanent place (permanent) and furniture that can be moved (permanent) (Prabowo et al., 2023).

1. Permanent Furniture

The permanent furniture in the wood workshop is a cabinet. The function of the closet is to store things. In the wood workshop, the cabinet is used to store the equipment and materials needed for practical purposes in the wood workshop (WURJANTI, 2023). The standard size of cabinets for storing practical materials is height 129.5 cm to 186.48 cm, length 101.01 cm to 139.86 cm, and width 77.7 cm to 121.73 cm (Alaska et al., 2023b).

2. Remanen Furniture

The furniture that can be classified as a type of remanent furniture includes (Prasetya et al., 2021):

a. Work Desk The desk has many functions, one of which is to serve as a place to put things and as a base for doing a job. Usually, in a workshop, a workbench is not only used for one person but can be used for several people. In addition to work desks for students, the workshop also provides teachers' desks. The teacher's desk should be strategically placed to supervise students during practice, but its presence should not interfere with the practice course. The teacher's desk is usually made of wooden construction with a length of 140 cm, a width of 70 cm and a height of 75 cm. The teacher's desk should be given a drawer to store the student's attendance list and essential notes belonging to the teacher.
b. The work chair generally has the same function: a place to sit. The height of the seat for work is 35.6 cm to 48.2 cm, the width of the seat is 43.2 cm, the height of the backrest from the surface of the seat is 12.7 cm to 19 cm, and the height of the backrest is 10.2 to 20.3 cm. However, in the workshop, student work chairs can also take other forms, namely rectangular seats or cage arcs. The seat base is 28 x 28 cm, made of hardwood with a 2.5 – 3 cm thickness.
c. Whiteboards are one of the essential educational media in the teaching and learning process. The ideal size of the whiteboard is not too small or too large. The minimum size of a good whiteboard is 120 cm x 240 cm, made of multiplexes, usually hung at a hanging point as high as 2 m from the floor. However, now, the use of whiteboards in workshops is more using push whiteboards, which can be moved easily. In addition to being easy to move, push whiteboards usually have two fields that can be used for writing (can be rotated).

Other equipment here is a contact box and a trash can—the contact box stores keys related to the needs of the workshop. Meanwhile, the garbage can has a function for temporary garbage storage (Rinaldi et al., 2022).

Virtual Laboratory

A virtual campus is a digital space where students and teachers can talk, learn, plan, and socialize. Students on the virtual campus can attend classes, hold meetings, attend conferences, and even take a campus tour as part of the college admissions process (Atika et al., 2024). Virtual campuses combine the advantages of digital and physical pedagogic approaches by making them work with each other. Therefore, this study contains the concept of a virtual laboratory in analyzing the facilities and infrastructure of wood workshops so that they are packaged more attractively and digitally based and easy to analyze by readers or beneficiaries of this research (Saputra et al., 2022a).

Figure 2. Virtual wood workshop display on the Millea Lab application

Research Methods

Data collection techniques are carried out in four stages:tion, interviews and doc, and augmentation. Observations are conducted to determine the initial conditions of the subjects to be studied. Observation is a complex process consisting of various biological and psychological processes (Wagino et al., 2022). Observations in this study are direct observations of the conditions of the workshop space and facilities in the field. The things that will be observed include the facilities and infrastructure in the wood workshop room of the Faculty of Engineering, State University of Medan. Observations are used to validate data obtained through documentation. This research instrument is validated using expert validation tests (Rahmah, 2023). An interview is a conversation with a specific purpose. The conversation is carried out by two parties: the interviewer, who asks questions and the interviewee, who answers the questions (Woga et al., 2023). Interviews are used to obtain more in-depth data about the wood workshop. The interview data in this study support data that already exist. The documentation method is used to find data on things or variables in the form of notes, transcripts, books, newspapers, magazines, inscriptions, meeting minutes, agendas, etc (maulana & Juliafad, 2022). In using this documentation method, the researcher holds a checklist to find the variables that have been determined. If there is or appears to be the variable being searched for, The researcher can use free sentences to record things that are free or not yet determined in the variable list. Documentation is used to clarify or validate observation data. In this study, an investment tool that the wood workshop manager has made was used (Saputra et al., 2022) Research instruments are used to measure the value of the variables being studied. The Number of instruments to be used depends on the Number of variables to be examined. The instruments in this study are the space standards contained in Government Regulation No. 40 of 2008 concerning Standards for Facilities and Infrastructure of Vocational High Schools/Vocational Islamic Senior High Schools (SMK/MAK) and SNI 03-6572-2001. The primary data collection tool is the researcher himself, and the supporting tool in this study is a meter (Hermawan et al., 2022). The instrument used to determine the size of the wood workshop space is obtained by taking measurements in the field and is supported by interview guidelines. The instrument to define the area of the room is adjusted to the area standard of Permendiknas No. 40 of 2008, which is used as a reference for the development of wood workshop space. The instrument to determine the area of ventilation and lighting systems is adjusted to SNI 03-6572-2001.

We can find the minimum standard requirements for practical equipment by calculating the ratio of the Number of helpful equipment and the Number of students using the formula.

$$\text{ALT } (\alpha) = \frac{STP \ x \ JAD \ (a...z)}{\sum JAZ \ (a...z)} \qquad Eq.\ 1$$

$$\text{ALT (b)} = \frac{RGK \ x \ JAD \ (a...z)}{\sum JAZ \ (a...z)} \qquad Eq.\ 2$$

Where ALT (a) is the Number of single working stations, ALT (b) is the Number of double working stations, STP is the Number of students practising, RGK is the Number of work teams, JAD (a…z) is the hours the equipment is used for practice and JAZ (a…z) is the Number of hours the tool is used (Wijaya et al., 2024).

Data Analysis Techniques

Data validity proves that the results of interviews and observations are reality. DataData validity checking techniques can be implemented based on the degree of trust (credibility) criteria. Based on these criteria, the checking technique can be carried out with the extension of 44 participation, observation diligence, peer checking, referential adequacy, negative case studies, and member checking. The data validity checking technique used sources to study workshop space, types and quantities of equipment and furniture in the Wood workshop space of the Faculty of Engineering, State University of Medan (Haruna & Darwis, 2020).

In quantitative research, the data analysis technique used is statistics. The statistics used in this study are descriptive statistics, which are statistics used to analyze and analyze data by describing or depicting the data that has been collected as it is without intending to make conclusions that apply to the public or generalization. So, in descriptive statistics, there is no significant test and error rate because this study does not intend to conclude the public or generalize. This data analysis uses a percentage scale, a calculation in data analysis that will produce a percentage that is then interpreted based on the value obtained. The percentage calculation process is carried out by multiplying the results of dividing the field quantity by the standard quantity by one hundred per cent, with the following formula:

$$condition = \frac{field\ size}{standard\ size}\ x\ 100\ \%$$

If the manuscript is considered unfit for publication, it has shortcomings, including research quality, uns (Supriyono et al., 2023) structured and challenging understanding language, plagiarism, and others. The editing and production process will be carried out for articles that have been accepted. The revised manuscript is resubmitted by the author to the same manuscript system (do not start submitting from the beginning again). To make it easier for reviewers and editors to check the review results, the author should also upload supporting files that explain what parts have been revised to meet the reviewer's suggestions. At the editing and production stage of the article, the author is no longer allowed to make any changes to the article (Suarim & Neviyarni, 2021).

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Table 5. Criteria for Achieving Wood Workshop Eligibility

Percentage Value	Eligibility Category
85-100%	Satisfying
70-84%	Less than satisfactory

50-69%	Not satisfactory

The criteria for achieving this feasibility are based on architectural assumptions and usage characteristics. Each space plan has a tolerance value for possibilities within a certain period. The tolerance value affects the level of comfort in using the tool, which depends on the suitability of the tool size to the size of the human (Wati & Kusmariyatni, 2021).

Research Results and Discussion

In this study, the wood workshop was designed using virtual reality media that complies with the standards of government regulation no. 40 of 2008. Through this media, prospective teachers can analyze the situation realistically by comparing virtual products with actual conditions. According to the Attachment of the Minister of National Education Regulation No. 40 of 2008, the area of the wood workshop is included in the total area of the wood workshop, the ratio of area per student, and the minimum width of the wood workshop. In the regulation, the capacity is planned for 16 students, while the conditions in the field, namely the wood workshop of the Faculty of Engineering, State University of Medan, are used by 32 students.

Figure 3. Comparison between workshop space area and standard

Therefore, the analysis in this study uses the calculation of the ratio of area per student. If the size of the wood workshop in the field is less than the existing standard size, then the workshop does not meet the standard. Conversely, if the workshop size in the field is the same as or more than the existing standard size, then the workshop can be said to be by the standard. The following is a comparison table between the area of the wood workshop at the Faculty of Engineering, State University of Medan and the standard size of the workshop in the Attachment of the Minister of National Education Regulation No. 40 of 2008 for a capacity of 32 students.

Table 6. Comparison between workshop space area and standard

	Room Size in the Wood Workshop, Faculty of Engineering, UNIMED				Standard	
Room Name	L (m)	W (m)	H (m)	Area (m^2)	W (m^2)	Area (m^2)
Work Area	16	8	4	128	8	256
Storage	12	3	4	36	6	48

Instructor	4	4	4	16		
	Total Wood Workshop			180		304

Information: L: Length; W: Width; H: Height

The percentage of achievement of the standard area of the wood workshop space based on the Regulation of the Minister of National Education No. 40 of 2008 with the area in the Wood Workshop of the Faculty of Engineering, State University of Medan is 50%, does not meet the standard. The percentage of achievement of the storage and instructor area with the standard area is 108.3%, which does not meet the standard (excessive storage space).

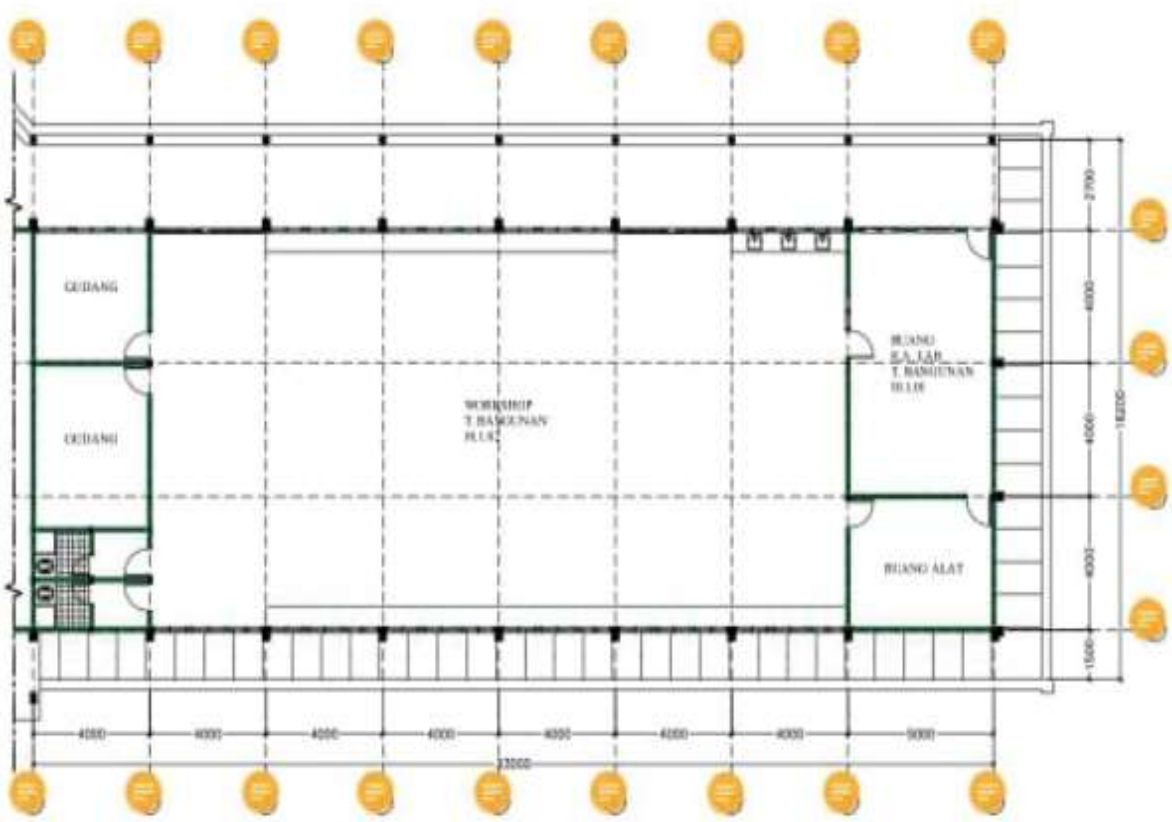

Figure 4. Wooden workshop plan

Based on the analysis of the difference between the standard area and the reality in the field, it can be seen that the wood workshop space of the Faculty of Engineering, State University of Medan, has not met the standards to be used as a woodworking practice space. This is because the area does not meet the criteria based on the achievement percentage. The woodworking area in the woodworking workshop space of the Faculty of Engineering, State University of Medan obtained an area of 128 m2 while the minimum standard work area is 256 m2. So, the dimensions of the work area do not meet the standards. The percentage of achievement of the standard area with that in the field is 50%. The storage and instructor space area obtained a percentage of achievement of the standard area with that of 108.3%. This explains that the storage and instructor space area meets the standards. Moreover, the storage room is too long. The total area of the woodworking workshop space is obtained as a percentage of achievement of the standard area with that in the field of 59.21%. So, the overall area of the woodworking workshop space does not meet the

standards set by Permendiknas No. 40 of 2008. For this reason, the school is expected to immediately add to the deficiencies so that they are by the standards.

Figure 5. Virtual wood workshop on AP. Millea Lab

The limited space of the wood workshop for this practice resulted in the activities being carried out in the work area and the workshop yard. During practice, some benches and work chairs are sometimes placed in the wood workshop yard. Meanwhile, seen from the room, the wood workshop should not be ceramic. Meanwhile, the wood workshop room at the Faculty of Engineering, State University of Medan, has a ceramic floor. This can trigger work accidents. Slippery floors increase students' alertness in carrying out practical activities. The school provides special shoes for practice to improve work safety, but students do not use these shoes.

Conclusion

Based on the results and discussion of the research that has been presented, it can be concluded. The area of the wood workshop does not meet the standard, with an area of 128 m2 smaller than the standard of Permendiknas No. 40 of 2008 using the calculation of the ratio per student of 256 m2 with a percentage of achievement of 50%. The area of the equipment storage room and the instructor's room of the wood workshop does not meet the standard, with an area of 52 m2 smaller than the minimum standard of Permendiknas No. 40 of 2008 of 48 m2 with a percentage of achievement of 108.3%. The total area of the wood workshop at the Faculty of Engineering, State University of Medan, does not meet the standard with an area of 180 m2 smaller than the minimum standard of Permendiknas No. 40 of 2008 of 304 m2 with a percentage of achievement of 59.21%.

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