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Implementation of 5S and Safety Awareness in the Classroom Environment at Telkom University Surabaya

Huki Chandra*, Yashmine Mela Ardianto, Norma Novika, Febrin Claudia Angeli, Nilna Agnia
Telkom University, Fakultas Rekayasa Industri, Program Studi Teknik Industri Kampus Surabaya, Jl. Ketintang No. 156, Surabaya 60231 Indonesia

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A B S T R A C T

The application of 5S culture is now an obligation that must be implemented by every place for the convenience of users or building occupants. The implementation of 5S that has been designed can produce an effective, efficient, productive work culture and uphold work safety. 5S culture is a culture of one of the concepts of industrial engineering. This concept is simple, easy to understand, and is the first step in the dissemination of industrial engineering culture. 5S itself is not only applied to office buildings but can also be applied to classes where various activities are carried out and also require 5S to avoid danger. There is one effective approach to increasing security awareness and ensuring a conducive work environment through implementing 5S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke). This 5S implementation provides insight into work safety around us. Data analysis by collecting data sourced from related journals and also by observing the object to be studied. Implementation of the 5S concept and safety awareness is very important, especially in classrooms on campus consisting of many people, so the risk of work accidents will be high if not balanced by the implementation of 5S and safety awareness.

***Corresponding Author**
Huki Chandra
E-mail: hukichandra@telkomuniversity.ac.id

1. INTRODUCTION

In carrying out activities in daily life, sometimes humans tend to ignore various safety factors and implement safe and responsible work practices. The fast-changing times and increasingly complex situations must be supported by individual awareness of the importance of paying attention to risk factors that may harm themselves and the surrounding environment. Hazards and threats can occur anytime and anywhere. It cannot be denied that doing certain activities can carry dangerous risks that can threaten personal safety (Widodo, 2021). There is one effective approach to increasing security awareness and ensuring a conducive work environment through implementing 5S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke). This approach can be applied to sustainable practices that are responsible for the environment and minimize the risk of work accidents and the resulting losses, both material and non-material (life). The Telkom University

Surabaya classroom environment is a place/room for students, lecturers, and academic staff to carry out lecture activities where most of their time is spent. Safety and comfort factors are very important to note, considering that clean, safe, and comfortable environmental conditions determine the mood and feel at home to do lecture activities for a long. One effective approach to achieving this goal is through the application of the 5S concept (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke). 5S is one way to turn on the environment to be more orderly avoid dangerous risks and increase safety awareness. The application of safety awareness is very important for education and implementing activities properly to ensure safety during activities (Lumanauw, 2020).

To provide a secure and comfortable working environment, 5S is used. The letters 5S stand for sort (Seiri), set in order (Seiton), shine (Seiso), standardize (Seiketsu), and sustain (Shitsuke). The 5S approach and process are used to establish and maintain a high-performance, safe, organized, and clean work environment. To guarantee that the goal of improving the workplace culture is achieved, evaluation of the 5S implementation is crucial. The pine gum industry's 5S evaluation resulted in a total score of 47, below-average 5S implementation, and a review was required to improve the implementation of the weakest 5S component (Rizkya et al., 2019). A 36% overall score on the 5S checklist form for manufacturing laboratories denotes poor 5S implementation (Sholihah et al., 2019). A Japanese approach to creating a clean, efficient, and safe workspace organization called the 5S methodology is a lean idea that aims to create a productive working environment. The five S's stand for Sort, Set in Order, Shine, Standardize, and Sustain in English. Properly adopting the 5S model in the organization, can save production time, waste, expense, and searching time while increasing safety and efficient resource use. The previous project focused on applying the 5S practice in the foundry shop to improve the working environment's safety and to boost productivity and employee morale (Elango et al., 2020). The adoption of the 5S workplace culture will successfully give workers security and comfort as they go about their everyday business without sacrificing productivity. Following are a few of the key reasons or significant issues identified by the fault tree analysis: Not understanding the significance of OSH, the lack of an accountable party, and 5S not being implemented (Sholihah et al., 2020).

In its approach, the 5S method can analyze the work environment to reduce waste and utilize the work environment which includes (equipment, documents, buildings, and space) to train to improve the discipline of human resources. The analysis of PT XYZ's warehouse workplace produced the following findings: Seiri, Seiketsu, and Shitsuke are above 60% implemented, Seiton is 40% implemented, and Seiso is above 80% implemented. Thus it is clear that improvements must be made to all existing concepts in the 5S concept, especially to concepts that are still below 70% implemented which must be given special attention in their improvements such as Seiri, Seiton, and Seiketsu concepts to increase effectiveness and company efficiency (Putra and Momon, 2023). 5S is a way that can be used to create a comfortable work area in a company or work environment. The implementation of 5S begins with sorting used and unused items (seiri), determining how to store spare parts and equipment in an orderly manner (seiton), cleaning the warehouse area and spare parts and equipment from dust and dirt (seiso), strengthening sorting activities, arranging as well as cleaning (seiketsu) and making 5S a work culture in every work activity (shitsuke). The result is that the t-value is greater than the t table (2.145) so it can be concluded that the search time for spare parts is faster than before implementing 5S (Iswantoro et al., 2022).

The application of this method is expected to increase work productivity and effectiveness. As a form of awareness of the importance of the state of the work environment, this should be included as one of the occupational health and safety programs. The 5S method is expected to minimize existing waste resulting in increased work productivity and effectiveness. From this previous research, there is 1 aspect of 5S that has not been fully implemented, namely shitsuke, so it can be concluded that the implementation of shitsuke has not run optimally (Felani and Prasetyo, 2019).

This approach may be used as a template for creating a secure, cozy, productive, and efficient learning environment in schools. Schools can manage their infrastructure and instructional facilities more effectively and efficiently by implementing the 5S approach. The 5-S method is a revolutionary approach to managing infrastructure and facilities in a school (Oktafiani et al., 2022). A messy tool setup, a poor work atmosphere, and an ineffective process flow are the company's current problems. The main goal of this study is to assist businesses in adopting 5S tools to not only rearrange, but also reset, and improve the process flow in the workplace. Based on that research, the inspection department's time was saved by 39.60% after applying 5S, and some process wastes were also decreased.

The workplace's inspection department organized itself and became productive. The 5S philosophy emphasizes waste reduction, efficient workplace organization, and workplace environment simplicity in order to increase productivity, efficiency, and safety. As a result of the 5S implementation, irregularities were brought to light, issues were visually detected, and an action plan was created to address the issues. Accidents in the sector happened less frequently. The production time was reduced (Karthik and Silksonjohn, 2019). The main reasons for the introduction of the 5S system in machine repair shops are identified and identified as follows: Make a good impression, get noticed, and speed up the process. The nature and content of each step in the 5S system "Seiri, Seiton, Seiso, Seiketsu, and Shitsuke" are defined and related to a clean and orderly workplace and better conditions for machinery to be repaired and also better quality (Nikolov and Todorov, 2022). This system helps to organize an efficient workplace, reduce waste, and optimize quality and productivity by monitoring an organized environment (Anggraini, 2020). The goal of 5S adoption is to give workers a secure and comfortable environment to work in. The findings of the study indicate that there is still room for improvement in the 5S implementation in furniture manufacturing, thus 5S training must be set up. Employing 5S can help businesses produce goods with fewer errors and establish a reliable, orderly, and disciplined workplace. Employee performance and the adoption of a 5S culture are significantly correlated. The Meubel's adoption of 5S is not a good example. Based on the significance of applying the 5S culture, socialization should be carried out (Oktafiani and Subiyantoro, 2022). Implementing 5S at PT XYZ is a great first step to increasing productivity as it will help the company solve its waste problems (Wiguna et al., 2022). Work motivation, which in turn can affect employee performance, can be influenced by company culture and job design. The findings of the study are supported by five hypotheses, which state that Seiso, Seiketsu, and Shitsuke are three variables that significantly affect employee performance (Azzam et al., 2019). The 5S methodology allows you to perform product preparation and preparation tasks to implement Seiri, Seiton, Seiso, Seiketsu, and Shitsuke (Samsudit et al., 2023).

The high number of work accidents that occur can affect the productivity of employee working hours which allows the company to experience losses if the productivity of employee working hours continues to decline. In an effort to reduce the number of work accidents based on the 5S criteria, the company has not been able to apply the 5S method to its full potential (Khasanah et al., 2022). There is no clear placement which makes the work area untidy and workers find it difficult to find what they are looking for, this results in a waste of time when carrying out work activities. In terms of safety aspects, this untidy work area can cause potential hazards such as slipping or tripping (Reza and Azwir, 2019). Implementing the 5S concept is crucial to improve the working environment (Sutrisno et al., 2022). Therefore, this study aims to evaluate the implementation of 5S in the campus environment and provide recommendations for appropriate improvements. Implementation of 5S and safety awareness discusses the specific actions needed to raise awareness of safety and comfortable activities in the classroom. The problem formulation of 5S implementation and safety awareness can be described as follows: How to measure the level of success of implementing the 5S concept and safety awareness in the environment at Telkom University Surabaya?

2. LITERATURE REVIEW

One method that can be used to improve work efficiency and eliminate waste is to implement a 5S work culture (Mulyana, 2019). Thanks to the 5S method, warehouse activities will be more organized and it will be easier for operators to pick up and store goods, such as labeling and marking the location of goods. Through the application of this 5S method, the physical condition of the working environment is better organized and affects the comfort of the workers (Marnova and Tung, 2023). The 5S method is used to avoid the risk of work accidents and increase employee satisfaction, comfort, and motivation at work. An unorganized work environment leads to a waste of time, energy, and materials (Syahputri et al., 2023). With the implementation of 5S and the acquisition of storage racks, there is the potential to reduce search activity and space usage. The implementation of 5S makes an important contribution to the organization's progress in terms of quality, productivity, and safety in the workplace (Rizkya et al., 2018). The application of the Seiri concept in the classroom means minimizing the presence of items that are unnecessary or unrelated to the lecture system. Seiri means packing, providing sufficient goods/objects to be used as a support for lectures. A well-organized classroom will create a more productive environment. Applying the Seiton concept is an important thing to do, considering that tidiness is a self-reflection. Maintaining tidiness such as the position of tables, chairs, and teaching and learning equipment needs to be encouraged and grown, because by keeping the classroom tidy both before and after use it is assessed that it will increase the feeling of enthusiasm for learning, and for students to focus.

Seiso is a 5S concept that emphasizes the importance of managing waste properly. In each classroom, it is necessary to provide trash bins with 3 types of waste classification (organic, inorganic, and hazardous waste). Through this action, one individual can encourage other individuals to be moved in reducing the negative impact of waste and promoting the importance of awareness of maintaining cleanliness. Based on previous research, the methods widely used are interviews and observations, and the 5S analysis field includes manufacturing, employee performance evaluation, warehouses, spare parts, and laboratories. This research will take objects in the classroom with descriptive and inferential statistical analysis where not many researchers have used quantitative methods on these objects.

The concept of Seiketsu in 5S means maintaining and caring for the facilities provided by the campus in the classroom. Every campus member has the responsibility to care for tables, chairs, blackboards, projector screens, and other supporting equipment so that they are in good condition and durable. Taking care of campus facilities is the same as protecting campus assets by extending the life of equipment and minimizing unnecessary repair costs. In the classroom, the Shitsuke concept is defined as routine cleaning activities carried out in the classroom, such as cleaning floors, desks, and chairs so they don't get dusty, and maintaining cleanliness is the duty of every campus member. Through Shitsuke's cleaning activities, humans can create a healthy and comfortable environment for the lecture process. Implementation of the 5S concept and safety awareness is very important, especially in classrooms on campus consisting of many people, so the risk of work accidents will be high if not balanced by the implementation of 5S and safety awareness. The application of this also includes understanding emergency evacuation procedures, using equipment safely, avoiding actions that can cause accidents, and how to report potentially hazardous conditions to a security guard or campus security. The main focus covering the classroom environment is the 5S concept (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) and safety awareness in the classroom to be implemented: (a) 5S implementation. The 5S concept includes practices for managing and maintaining facilities and equipment in classrooms, managing waste properly, and maintaining routine cleanliness. (b) Safety Awareness. The concept of safety awareness includes ways to increase awareness of safety during the learning process and other activities in the classroom. This concept consists of several aspects such as evaluation procedures, using good and correct tools to support learning, avoiding all forms of risk, and making reports in the event of a

situation that has the potential to endanger oneself. (c) Collaboration between students, lecturers, academic staff, and campus employees. This limitation applies to all campus residents to participate in maintaining campus facilities. The role of campus residents and cooperation in it are considered important factors in achieving a safe learning environment and comfortable activities. (d) Implementation Actions.

3. RESEARCH METHOD

This section describes the research stages, research locations, types of research and approaches and research data.

3.1. Research Stages

The stages of the research flow will be explained as follows: (1) Identification of the problem. The problem to be assessed is the implementation of 5S and safety awareness with the field observation method of the Telkom University Surabaya classroom. This topic was chosen because the location of the classroom is a location that is used by students for learning, so it needs to be studied in more depth about what hazards might pose a risk to the safety of classroom users. (2) Observations made in the classroom to assess the conditions of 5S implementation. (3) Then followed by a literature review by looking for material sources from previous research that has been done or previous studies that are relevant to the topic of discussion. (4) Then the results and discussion will be made by taking into account the factors that indicate a hazard that must be corrected by implementing 5S. (5) Drawing conclusions and providing recommendations.

3.2. Research Locations

The research location is the location where the research will be carried out to obtain the necessary data or information related to the research problem. The location of this research was carried out on one of the 2nd-floor classes of the Telkom University Surabaya Campus. The researchers chose this location because there were several problems related to Occupational Safety and Health in the class at Telkom University Surabaya Campus. This greatly affects the productivity of students at Telkom University Surabaya.

3.3. Types and Research Approaches

This study examines the influence of Occupational Safety and Health (OSH) in an effort to increase student productivity at Telkom University Surabaya. The approach to be used in this research is a quantitative approach with descriptive methods. The descriptive method is used to get an overview of the Influence of Occupational Safety and Health (OSH) in an effort to increase student work productivity. The instrument used is in the form of data regarding Occupational Safety and Health (OSH).

3.4. Research Data

In this study, the data used were data obtained from the respondents, where the respondents would respond either verbally or in writing in response to the questions and questionnaires submitted. The following categories of data were used in this study:

In this study, the data were obtained from the results of the questionnaire and the opinions of the respondents directly about OSH, which can be concluded from the submission of the questionnaire to be carried out on the subject.

3.5. Data Collection Methods

The data collection method in this study was to use a personal questionnaire. The data collection procedure in this study will be carried out by giving a questionnaire. At the time of administering the researcher's questionnaire to respondents in groups and individually to obtain more realistic data. In addition, data is also obtained from direct observation to strengthen existing data. In this study, observations were made by direct observation of students who were directly related to work processes in the field.

3.6. Data Analysis Techniques

This research is a descriptive study with a survey approach that aims to determine the extent to which the 5S Concept (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) and each element have been implemented in classrooms, especially in the implementation of the 2nd-floor class at Telkom University Surabaya.

3.7. Implementation of 5S

The 5S program (Seiri, Seiton, Seiso, Seiketsu, and Shutsuke) which is widely used in Japan and many countries have implemented it is one of the simplest methods for structuring and cleaning the workplace properly. (1)Seiri. Seiri is our obligation to get rid of unnecessary items. The principle is to separate everything that is needed and get rid of what is not needed from the workplace. The objects that are needed and unnecessary can be distinguished by storing the

required objects (Suprayitno et al., 2021). (2) Seiton. Seiton is tidying things up so that everything has its own place. Tidiness is about how quickly we put things away and get them back when needed easily. (3) Seiso. Seiso is implementing the habit of cleaning, not only cleaning goods but also checking whether the goods are still suitable for use or not. (4) Seiketsu. Seiketsu is maintaining the results that have been achieved in (Sorted, Neat, Clean) previously by standardizing it (Standardization). This principle can work if it is carried out by all administrators in the work environment. (5) Shitsuke. The 5S concept is the most difficult because it is done with habit, that is, everyone in the 5S programs must make sure that Shitsuke (Sustaining) can run or not be carried out properly or not according to the agreed rules.

3.8. Safety Awareness

Occupational Health, and Safety, commonly abbreviated as OSH, aims to develop cooperation, mutual understanding, and effective participation of employers or managers and workers in workplaces to carry out joint duties and obligations in the field of occupational safety, health, and environment in launching a production business. Increasing OSH awareness at work has benefits for every individual: (a) Reducing the risk of injury and accidents, (b) Increase productivity and performance, (c) Maintain the organization's reputation, (d) Prevent financial loss, (e) Improving the quality of life of employees.

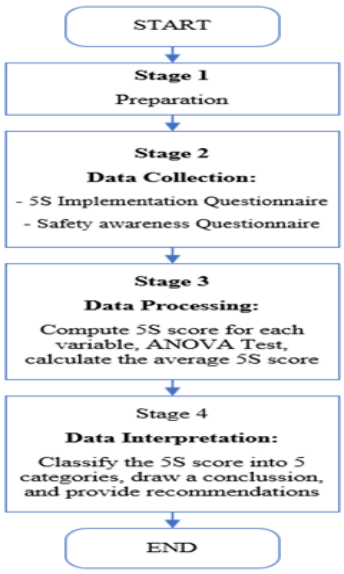

Figure 1. The research framework

In the preparation stage, the researchers prepared a research instrument in the form of a questionnaire. Initial observations were also conducted as preliminary studies and supporting evidence. There are two questionnaires used in this research, namely the 5S implementation evaluation questionnaire and the safety awareness questionnaire. In the 5S implementation questionnaire, indicator questions are arranged for each 5S variable, each of which has 5 question items. Each question item will be given a score. There are 5 Likert scales used ranging from strongly agree to strongly disagree. As the score increases on each scale, it will increase by 5 points. If the respondent answers strongly agree, they will get a score of 20 for each question item and if they strongly disagree, they will get a score of 0. Thus the score ranges from 0 to 100. In the safety awareness questionnaire, two things are assessed, namely the respondent's awareness of the importance of implementation, and safety actions that have been executed by each respondent.

Data collection was obtained to receive responses from respondents on both questionnaires. Respondents came from various study programs and were classroom users at Telkom University Surabaya. For each 5S variable, the scores will be added up to get a score from 0 to 100. Then descriptive statistics are drawn by averaging the value of each 5S variable based on the respondent's overall score. These average results will be grouped into 5 categories, namely very poor, poor, enough, good, and very good. For the inferential approach, an ANOVA test was performed. Before carrying out the ANOVA test, a normality test is carried out to ensure that the data is normally distributed so that parametric statistical methods can be used. Then, the homogeneity test is used to determine whether the type of ANOVA test used is homogeneous or not. The following are the hypotheses in this research:

Ho: There is no significant difference in the mean implementation scores between 5S variables

H1: There is a significant difference in the mean implementation scores between 5S variables

The data will be analyzed to conclude. Based on the research results, it is determined which variables fall into the category that needs improvement and then recommendations are given to improve 5S implementation and safety awareness.

4. RESULTS AND DISCUSSION

This study aims to investigate the implementation of 5S practices (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) and safety awareness in the classroom environment at Telkom University Surabaya.

4.1. 5S Evaluation

Data was collected through questionnaires from students who use classrooms on campus and then processed. Table 2 shows the 5S questionnaire which is used in this research based on the previous study (Kuncoro, 2018).

Table 1. Respondents

Name	Major
Respondent 1	Digital Business
Respondent 2	Information System
Respondent 3	Computer Engineering
Respondent 4	Computer Engineering
Respondent 5	Software Engineering
Respondent 6	Telecommunication Engineering
Respondent 7	Science Data
Respondent 8	Telecommunication Engineering
Respondent 9	Digital Business
Respondent 10	Electrical Engineering
Respondent 11	Science Data
Respondent 12	Science Data
Respondent 13	Digital Business
Respondent 14	Information System
Respondent 15	Information System
Respondent 16	Electrical Engineering
Respondent 17	Informatics
Respondent 18	Logistic Engineering
Respondent 19	Software Engineering
Respondent 20	Informatics
Respondent 21	Telecommunication Engineering
Respondent 22	Telecommunication Engineering
Respondent 23	Information System
Respondent 24	Information System
Respondent 25	Information System
Respondent 26	Software Engineering
Respondent 27	Information System
Respondent 28	Information System
Respondent 29	Software Engineering
Respondent 30	Information System

The existing condition of the class is shown in Figure 2, Figure 3, Figure 4, and Figure 5.

Figure 2. Cables are blocking the path

Figure 2 shows a cable blocking the road. This is supported by the results of the questionnaire where respondents assessed that the Seiso variable required safe and clean floor conditions. As a countermeasure, cables must be tidied up so that they do not block the road, and monitoring measures are needed, this will increase the value of Shitsuke. One way to keep things neatly organized is that companies need to provide storage places (Alamsyah and Rochmoeljati, 2023).

Figure 3. There is a gap in the roof

Figure 3 shows a ripped ceiling in a classroom. The same thing is shown in the Seiso score results where the condition of classroom facilities needs to be improved to be acceptable and spotless. Ripped ceilings ause classrooms to become unattractive and dirty. Therefore, it is necessary to immediately repair the ripped ceilings and carry out regular watchkeeping to increase the Shitsuke value.

ceilings cause classrooms to become unattractive and dirty. Therefore, it is necessary to immediately repair the ripped ceilings and carry out regular watchkeeping to increase the Shitsuke value.

Figure 4. There is debris on the student chairs

Figure 4 shows that the chair has splinters and debris. Actions that can be taken are to replace that are not suitable for use with new ones, to reduce the possibility of accidents. If this is done, the equipment in the classroom will be suitable for use and look clean, which will increase the Seiso value from enough to very good. If this is used as a habit, the value of Shitsuke can also be increased.

Figure 5. The part of the table is detached (sample of classroom at Telkom University)

Figure 5 shows that the table base was detached. Actions that can be taken are to replace tables that are not suitable for use with new ones, to reduce the possibility of accidents. If this is done, the equipment in the classroom will be suitable for use and look clean, which will increase the Seiso value from enough to very good. If this is used as a habit, the value of Shitsuke can also be increased.

Table 2. Marking criteria for 5S implementation

5S	CODE	Marking Criteria
	Q1	Zero unnecessary items
Seiri (S1)	Q2	Goods have been classified according to the level of usage needs
	Q3	Class items are available in their respective places
Seiri (S1)	Q4	There are cleaning tools in place
	Q5	Cable and electrical installation in good condition
	Q6	Each item has a special container
	Q7	Each item has a naming
Seiton (S2)	Q8	The layout of each item is appropriate, safe, and uncluttered
	Q9	Adequate security
	Q10	Placement of goods after use
	Q11	The floor is always clean (no dirt, dry and not mossy)
	Q12	All equipment/goods are in clean condition
Seiso (S3)	Q13	Items/facilities in the classroom area are always cleaned

	Q14	Trash bins have been categorized
	Q15	Cleaning equipment in good condition
	Q16	OSH regulations are available
	Q17	OSH instruction display is available
Seiketsu (S4)	Q18	A fire extinguisher is available
	Q19	Cable and electrical installations in proper condition for use
	Q20	There are no loose wires
	Q21	OSH routine monitoring is carried out
	Q22	Periodic watchkeeping is carried out
Shitsuke (S5)	Q23	Mentoring 5S periodically
	Q24	There is a regular OSH schedule
	Q25	There are 5S infographics

Table 3. Normality test

Implementation of 5S	Sig.
Seiri	0.080
Seiton	0.147
Seiso	0.200
Seiketsu	0.200
Shitsuke	0.200

Table 4. Test of homogeneity of variances

Levene Statistic	Sig.
0.996	0.412

Table 5. ANOVA

	Sum of Squares	F	Sig.
Between Groups	839.333	0.731	0.572
Within Groups	41637.500		
Total	**42476.833**		

Table 6. ANOVA

Item	Mean	Minimum	Maximum
Seiri	64.333	30.00	95.00
Seiton	62.000	25.00	90.00
Seiso	58.833	25.00	90.00
Seiketsu	60.000	25.00	95.00
Shitsuke	57.667	25.00	90.00
Total	**60.567**	**25.00**	**95.00**

Based on the 5S average results, two variables were obtained in the sufficient category, namely the Seiso value of 58.8 and the Shitsuke value of 57.67. The normality test was performed to determine the appropriate statistical method to use. Table 3 shows the results of the normality test. Based on the results of the normality test, the results show that the significance value is greater than 0.05. Because the significance value is greater than 0.05, the data is normally distributed. Because the data is normally distributed, the statistical method used is a parametric statistical test. Because the data is normally distributed, there are several implementations of significance to be tested using the ANOVA test. The ANOVA test is used to test whether there are significant differences regarding the implementation of each component on the 5S principle. To determine whether the variance of the data includes homogeneous or heterogeneous variants, a variance test is needed. Table 4 shows the results of the variance test. The variant of the data will determine the calculation in the ANOVA method. The Levene Statistics Homogeneity Data is 0.996, so it has a significant value greater than 0.05. Because the significance value is greater than 0.05, the

variance of all 5S factors in this study is homogeneous.

Table 5 shows the results of the ANOVA test. The significance value in the ANOVA test is 0.572. Because the significance of the ANOVA test is greater than 0.05, it can be concluded that there is no significant difference in the implementation of 5S in this study. Table 6 shows the results of descriptive statistics. Based on the results of descriptive statistics, the average Seiri implementation value is 64.33. The average Seiton implementation value is 62.00. The average Seiso implementation value is 58.83. The average value of implementing Seiketsu is 60.00. Shitsuke's average score is 57.67. Shalihah et al. (2020), grouped evaluations of 5S implementation into 5 categories, namely Very Poor, Poor, Enough, Good, and Very Good. The assessment criteria use a range of values, whereas Very Poor has a score range between 0-20%. The poor category has a score range of 21% -40%. The Enough category has a score range between 41% -60%. The good category has a score range between 61% -80%. The very good category has a score range between 81% -100%.

Based on the results of evaluating the implementation of the 5S method in classrooms at Telkom University Surabaya, it was found that the average value ranged from 41% -60%, so the application of Seiso, Seiketsu, and Shitsuke was in the Enough category. For the value of applying Seiri and Seiton, it is found that the average value ranges from 61% -80%, so it belongs to the Good category. The minimum value of the results of the respondent's assessment of the overall implementation of 5S is 25.00, so it is in the poor category. The maximum value of the results of the respondent's assessment of the overall implementation of 5S is 95.00, so it is in the very good category. Based on these categories, there is still room to increase the category in the application of Seiso, Seiketsu, and Shitsuke from the Enough category to the Very Good category. The implementation of Seiri and Seiton can also be upgraded from the Good category to Very Good. These results indicate that the implementation of 5S practices in classrooms at Telkom University Surabaya is generally quite good, but improvements still need to be made to minimize the risk of accidents in the classroom.

4.2. Safety Awareness

Analysis of the level of safety awareness in the classroom environment of the Telkom University Surabaya produces the following findings: (a) Most of the respondents (86%) are aware of the safety measures that need to be taken in the classroom. (b) The majority of respondents (78%) indicated that they followed the safety rules set in the classroom. The results obtained show that the level of safety awareness in the classroom environment at Telkom University Surabaya is generally quite high, but it is necessary to increase it so that safety awareness in the classroom environment is maintained and the level of accident risk is close to zero.

4.3. Analysis of Constraints and Obstacles in 5S Implementation

In the application of 5S in the classrooms of the Telkom University Surabaya, several obstacles and challenges have been classified into two, namely: **(A) General constraints.** (1) There are no written regulations regarding the implementation of 5S so the structure regarding 5S has not been made yet so regulations regarding 5S also do not exist or have not been implemented. (2) Lack of understanding of 5S, when the 5S rules are implemented maybe some students or lecturers don't understand, so they don't pay attention and take it for granted even though this is very important to support the safety and comfort of the classroom. (3) The narrowness of the classroom, if the number of students is greater and the learning support tools are not safe, the greater number of students will make the room even narrower which can cause air circulation, etc. to become uncomfortable not to mention cables or equipment scattered around the room classes can cause unwanted accidents. (4) Lack of funds to support the renewal of learning support tools or safety equipment, such as broken benches, the purchase cost is very expensive, but if not replaced, it can cause discomfort in activities and can cause accidents, then scattered cables can also cause accidents that are not unwanted if left untreated or treated. (5) Lack of funds to renovate classrooms that are damaged and need renovation and torn ceilings must be replaced or repaired immediately so as not to cause

unwanted accidents or illnesses. **(B) Specific constraints.** (1) Seiri: Do not place items carelessly because it can cause accidental accidents. (2) Seiton: There are still students or lecturers who don't return the equipment properly after using it so it can cause danger. (3) Seiso: There are still students or lecturers who don't even keep the classroom clean so a lot of trash is scattered in the classroom even though trash bins have been provided. (4) Seiketsu: There are still employees, lecturers, or students who don't take care of the classrooms properly so the classrooms become damaged and dirty. (5) Shitsuke: Students and lecturers are still unable to apply 5S as a whole and make it a habit.

4.4 Discussion

In previous research, not much has discussed the application of 5S in the classroom. Even though implementing 5S in the classroom is important so that students can focus when studying, there is not much research discussing the implementation of 5S in the classroom. Oktafiani et al. (2022) examine the implementation of 5S in the field of education in a vocational high school using interview and observation methods. The results show that there is a need to implement 5S and instill a 5S culture in every school member. However, this research took a subjective approach using interviews and observations. In this research, to overcome the element of subjectivity, an objective approach was taken using scoring for each 5S indicator so that implementation scores were obtained and grouped into 5 categories. This research also uses an inferential statistical approach to find out whether there is a difference in the mean value of implementation for each 5S variable. Other similar research was also carried out in the education sector, but the object used was a laboratory (Sholihah et al., 2019). The approach taken in this research was to use descriptive statistics with the percentage of 5S implementation. Thus, based on relevant previous research, most researchers use a form and then the data is processed descriptively to find out the 5S score. This research uses a combination of descriptive and inferential methods by conducting an ANOVA test. This research also determines the level of safety awareness within Telkom University Surabaya. Even though this research has used a quantitative approach, several things can be improved. Indicators for safety awareness can be made more specific, not just limited to the level of willingness and action. Suggestions for further research are that an assessment can be carried out after the implementation of improvements to compare the results with those before the improvements.

5. CONCLUSION

From this research, it can be concluded that after testing the implementation of 5S and safety awareness, there is awareness in one of the classrooms on the second floor at Telkom University Surabaya Building which is quite high awareness of 5S implementation and also safety awareness. The implementation of the 5S concept applied in one of the classrooms of the Telkom University Surabaya has been proven by respondents with the condition of the room being kept neat and clean, items that are not needed have been removed properly, the cleanliness of the class environment has been well maintained, and maintenance facilities and equipment have been carried out regularly. However, there are obstacles and challenges in implementing 5S, namely in terms of obstacles, a small number of students do not understand to apply the 5S concept, and the challenge is how most students can positively influence students who are less aware of the importance of 5S and invite them to participate in the implementation of 5S in the hope that the percentage of awareness of maintaining cleanliness and tidiness will continue to increase. The level of success in implementing the 5S concept and awareness of safety in the campus environment of the Telkom University Surabaya is quite satisfactory. This is accompanied by awareness of each individual in implementing it. In this context, it is important to continue to implement and improve 5S practices and safety awareness to create a better classroom environment.

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