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MORALITY BEFORE KNOWLEDGE

Improving occupational health and safety discipline for accident prevention through the implementation of the 5-S practice

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ABSTRACT
Work accidents are not just a single event but occur through a series of interrelated causes. The main source of accidents is the existence of unsafe actions that refer to worker behavior and unsafe conditions that refer to the work environment. The approach that can be used to prevent work accidents in the work environment is the implementation of the 5S standard through the Plan Do Check Action (PDCA) methodology. The implementation of 5S is carried out in stages and systematically starting from planning, implementation, checking, and continual improvement of each 5S element. Each of the five stages is important and should be taken seriously and handled separately and sequentially. The initial three stages are operational; the fourth phase preserves the state established in the first three phases; and the fifth phase aids in our efforts to improve things continuously. Improved working conditions and an accident-free workplace can result from a better understanding of the 5S idea and how it relates to the safety management system. This will increase employee satisfaction in industrial organizations.

KEYWORDS: 5S standard; safety discipline; safety impact; work culture

1. Introduction

Occupational health and safety and health (OHS) is all efforts to ensure and protect the safety and health of workers through efforts to prevent occupational accidents and occupational diseases (Rosento et al., 2021). Occupational safety and health are closely related to the work productivity of a company (Suprayitno et al., 2021). Lack of K3 discipline in employees can trigger work accidents in the company environment such as minor injuries, serious injuries, equipment damage, or even death. This will certainly be very detrimental to the company, whether it is a material loss, moral loss, or loss of working days which will reduce the efficiency and productivity of the company (Rosento et al., 2021).

Therefore, OHS discipline is very necessary for a company to prevent accidents and occupational diseases in workers. After all, workers are the company's most important asset. With the implementation of OHS discipline, the number of accidents can be reduced or even eliminated (zero accidents) (Kamal et al., 2019). That way the company will greatly benefit because all workers get a feeling of security from the threat of work accidents and occupational diseases so they will work more actively and productively (Rosento et al., 2021).

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Work accidents are not just a single event but occur through a series of interrelated causes, whether it is from worker factors, work methods, work environment, work equipment, and others (Rahman et al., 2021). Generally, the main causes of work accidents in the company environment are unsafe actions and unsafe conditions (Hasan, 2022). Unsafe actions refer to the behavior of workers who do not heed OSH discipline in carrying out their work activities. Some examples of unsafe actions that often occur include:

1. Performing work without a work permit from the competent authority
2. Using un-function safety devices due to lack of checking
3. Non-ergonomic working position
4. Working on rotating or dangerous objects without sufficient knowledge and supervision
5. Did not use personal protective equipment (PPE) when performing potentially hazardous work
6. and others

Whereas unsafe conditions refer to a work environment that is not meet standards where potential hazards are not controlled, for example:

1. Imperfect security, for example, log out tag out system (LOTO) did not carry out when doing work with electrical and mechanical power sources
2. Inadequate workspace conditions, e.g. insufficient lighting, too much glare, no air ventilation
3. Unsafe work climate, e.g. air temperature is too high or too low
4. Safety procedures are not available.
5. Placement of goods at the work location is not organized or not according to function
6. And others.

One approach that can be used to improve OHS discipline at all levels of the company is to implement a work culture originating from Japan, namely 5S (Seiri, Seiton, seiso, Seiketsu, Sitsuke), which was later adapted in Indonesia to become 5R (Ringkas, Rapi, Resik, Rawat, Rajin) (Waluyo, 2020). The essence of implementing the 5Rs is to create an effective and efficient work environment. According to Osada (2011), the 5R program can minimize the occurrence of waste in a company to increase the productivity and effectiveness of the company (Osada, 1991).

2. Methods

The methodology used in this article is a literature review and 5S system approach through PDCA (Plan, Do, Check, Action). The concept of the PDCA cycle is guidelines for the team when working on a system improvement project. plan is focused on establishing goals for all areas of progress and creating strategies to reach the goals. Do is doing what has been planned. Checking involves monitoring and reviewing the implementation of planning is on track and keeping track of how well-planned changes are coming together. Action is follow up from checking, in this step is performed standardizing processes is to prevent the recurrence of the same issue or putting new objectives into practice to improve future outcomes and new objectives for enhancing performance. 5S implementation is carried out through 5 phases, according to each element in 5S, namely Seiri, seiton, seiso, seiketsu, and Sitshuke (Kholidah and Prasetyo, 2018).

(1) Seiri (sorting and arrangement). eliminate all unnecessary items. Examine all the equipment, supplies, parts, and other items in the factory or work environment. Pick up and keep only the items needed (Jiménez et al., 2015).

(2) Seiton (Storage and establish a concise workflow). Organize all necessary items according to their function, placement, and tidiness for easy retrieval. Arrange the assignment, personnel, tools, components, and work instructions so that the work flows smoothly through the value-added tasks with the work division required to meet the requirement (Ozdemir et al., 2017).

(3) Seiso (shining and cleaning). Clean up all facilities and work environment to get a comfortable workplace ready for the next user (Cierniak-Emerych and Golej 2020).
(4) Seiketsu (standardize). Make sure that all setup and the '5S" standard is maintained as well as the procedure and tidiness of the workplace. 5S concepts must be transformed into protocols that are required for a safety program (Randhawa and Ahuja, 2017).
(5) Sitshuke (sustain). Discipline workers to implement 5S so that it becomes a culture (Buchari et al., 2018)..

3. Results and Discussion

3.1 Stages of 5S Implementation

5S is a standard system to make workplaces more effective, safe, efficient, and productive. The 5S principle is developed by Toyota Japan as a fundamental component of the philosophy of continual development to clarify in further detail what is meant by the systematic organization of goods and appropriate (Ozdemir et al., 2017). The 5S are a foundation of Good housekeeping to ensure Safety, Security, Quality and high productivity. In order for a 5S program to be successful, everyone concerned must work together to establish and maintain the standards. Everyone needs to be accountable and involved in the program (Jiménez et al., 2015).

The implementation of the 5S program requires self-awareness, respect for others, and most importantly solid teamwork. Senior management must play a key role in helping their subordinates understand the value of the 5S approach in the organization (Randhawa and Ahuja, 2017). The top management's proactive actions and promotion of the 5S technique only serve to strengthen the employees' dedication and commitment to the program's implementation (Goetsch and Davis, 2010). The complete stages of implementing 5S can be seen in the Figure 1.

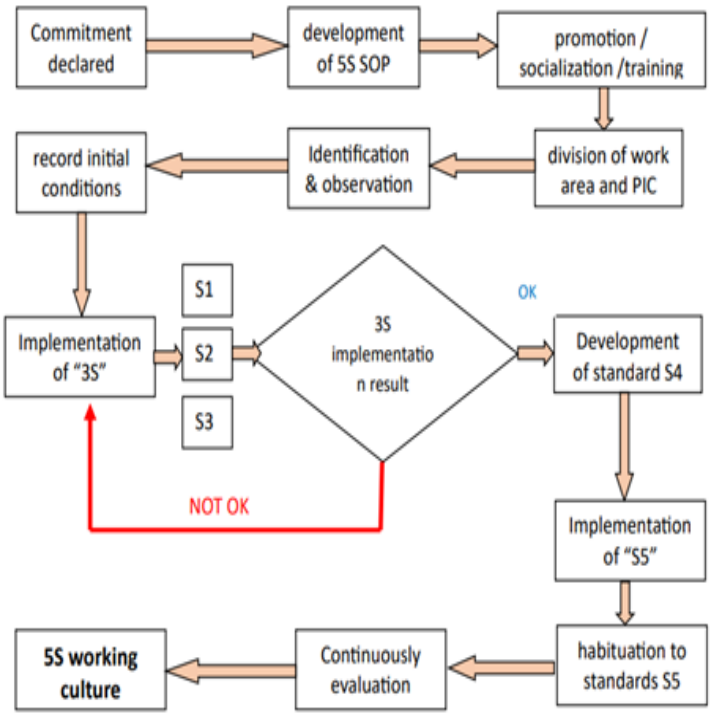

Figure 1. Stages of 5S implementation
(Hasan, 2022)

The 5S implementation procedure was examined by Khamis et al. (2009), who also created a checklist of 5S activities for manufacturing organizations. The writers came to the conclusion that 5S can enhance an entire organization in a comprehensive, integrated manner. They determined that inadequate training programs and poor communication between top management and shop floor staff are the two biggest obstacles to the implementation of 5S (Khamis et al., 2009).

3.2 Strategy of 5S Implementation and It's Impact on Safety

The strategy for implementing 5S through PDCA can be seen in Table 1.

Table 1. Strategy of 5S implementation

Items	Activity	PDCA Circle	Checklist	Impact on Safety
S1	Organize the workplace as efficiently as possible, remove unnecessary items and mark all items "Used or Unused"	P	Labelling items (Used or Unused)	Reduce the risk of worker injury due to falling objects or tripping over unnecessary items, facilitate the movement of workers so that work becomes comfortable
		D	Eliminate unnecessary items	
		C	Prioritize the essential items	
		A	Organize openly and completely	
S2	Use of symbols, colors, codes, and labels. "Everything has its place, and there is a time and place for everything"	P	Create a work area plan	Reduce danger risks and make hazards easy to identified
		D	Determine the standard color	
		C	Communicate with team	
		A	Assign the PIC and completion time	
S3	Clean the workplace, equipment, or machinery	P	Organize a team or appoint a PIC for each shift	A clean working environment reduces the risk of accidents caused by slipping, tripping, bumping, etc. Make safety equipment visible and easily located so that in the event of an emergency it can be addressed immediately without losing valuable decision-making time.
		D	Get work done quickly	
		C	Establish it's location and boundary lines	
		A	Put everything in its place	
S4	Make an Assignment Table or Schedule to emphasize the first "three S's" first	P	Create Table	Ensure safety standards are carried out according to protocol so that no accidents occur
		D	Place it where it can be easily seen	
		C	Mark for those who have finished	
		A	Establish audit schedule or Management review	
S5	Campaign for the next 5S	P	Announce the next Schedule	Work safety is a priority and culture at work and there is

Items	Activity	PDCA Circle	Checklist	Impact on Safety
	to emphasize the improvement and implement continuous improvement practices with team	D C A	Invite other personnel Schedule a Management Review Celebrate your successes, and set higher standards	always a management review to continuously improvement

Each of the five stages is important and should be taken seriously and handled separately and sequentially. The initial three stages are operational; the fourth phase preserves the state established in the first three phases; and the fifth phase aids in our efforts to improve things continuously (Jiménez et al., 2015).

Improved working conditions and an accident-free workplace can result from a better understanding of the 5S idea and how it relates to the safety management system. This will increase employee satisfaction in industrial organizations.

4. Conclusions

The 5S system, developed by Toyota Japan, serves as a fundamental component of continuous improvement philosophy in workplaces. It aims to enhance effectiveness, safety, efficiency, and productivity. The successful implementation of the 5S program requires collaboration, accountability, self-awareness, and respect for others. Senior management plays a crucial role in promoting and supporting the 5S approach, which strengthens employee dedication and commitment. Research suggests that implementing the 5S program comprehensively and integrating it into the entire organization can bring significant benefits. However, challenges such as inadequate training programs and poor communication between management and shop floor staff can hinder the successful implementation of 5S. The 5S system consists of five stages, each of which should be taken seriously and sequentially. The initial three stages focus on operational activities, while the fourth stage aims to sustain the established standards. The fifth stage fosters a culture of continuous improvement. By embracing the principles of 5S and incorporating it into their safety management system, industrial organizations can achieve improved working conditions and create accident-free workplaces. This, in turn, can contribute to increased employee satisfaction.

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Author Contribution

In the text above, the author provides various contributions related to the understanding and explanation of the 5S system. Here are some of the author's contributions:

1. Explanation of 5S: The author provides a clear and concise explanation of what the 5S system is and its purpose in improving effectiveness, safety, efficiency, and productivity in the workplace.

2. The importance of holistic implementation: The author emphasizes the importance of implementing the 5S program comprehensively and integrating it into the entire organization. This demonstrates that the author's contribution is to promote a comprehensive approach to implementing 5S.
3. Role of senior management: The author highlights the crucial role of senior management in supporting and promoting the 5S approach. This portrays the author's contribution in understanding the importance of management involvement in the success of the 5S program.
4. Overcoming implementation barriers: The author identifies common barriers in implementing 5S, such as inadequate training and poor communication between management and production staff. By uncovering these barriers, the author contributes by providing insights into potential issues that may arise during 5S implementation and providing understanding on how to overcome them.
5. Improving working conditions and employee satisfaction: The author mentions the benefits that can be gained from a better understanding of the 5S concept and how it relates to the safety management system. This indicates that the author's contribution is to promote improvements in working conditions and increase employee satisfaction in industrial organizations.

With these contributions, the author provides a comprehensive understanding of the 5S system, as well as provides information on the challenges that may be encountered and the benefits that can be gained from successful implementation.

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