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## Introduction to the Application of Kaizen Principles in the World of Work, For the Students of SMK.N 43 Jakarta

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**Abstract :** The purpose of this activity is to provide an introduction to the application of Kaizen principles in the world of work for the students of SMK.N 43 Jakarta. This activity is part of an effort to introduce the concept of continuous improvement to students because the Kaizen principle has great relevance in the context of the ever-changing modern world of work as well as in the daily lives of students. The activity was carried out directly at SMK.N 43, on Wednesday 7 February 2024 through the provision of basic Kaizen knowledge, case examples, video screenings, games and interactive discussions. The activity was attended by 40 people, consisting of 35 students, 4 ITL Trisakti Team Lecturers, and 1 student. From the results of the interview, it is known that the partner's problem is the desire to increase students' knowledge of the principles that apply in the world of work. Based on the results of the analysis of the pre-test and post-test, each of which consists of 10 indicators, it is found that there is an increase in participant understanding between 22% to 101%, with an average increase in understanding of 63.1% for each indicator.

**Keywords:** Kaizen, Service Community, Continues Improvement.

### INTRODUCTION

The pace of time movement is rapid, as is the level of rivalry caused by the diversification of increasingly specific jobs, which sharpens the quality competition in each field of labor. In this connection, the legislation states that "those with high quality will be the winners, while those with low quality will be left behind and overtaken by the times". The competitive mechanism instructs us to be prepared to meet any situation, grasp the flow of change, and control it to win (Rusdi, 2018).

Education has a critical function in developing individuals into competent and qualified members of society. Education should not just provide academic information but also educate pupils about the ever-changing and challenging world of employment. The Kaizen principle is an important idea to present to pupils. It relates to a Japanese philosophy of constant

development. Students who are introduced to Kaizen principles gain significantly in terms of future achievement.

Facing free trade in 2010, Indonesia must work hard to enhance its human resources, which are still lagging behind. The only way to improve human resources is to raise educational standards. As we enter the free market era, we require competitively advantaged human resources in the form of quality human resources capable of competing both nationally and internationally (Nugroho,2013).

The Kaizen technique is one of the best habituation techniques that has been shown to increase ability. The phrase Kaizen comes from Japanese and signifies improvement, change for the better, and continuous improvement. Companies in Japan employ the Kaizen technique to enhance product quality and quantity. The corporate plan that adopts the Kaizen

This continuous improvement approach focuses on incremental, gradual gains. This is in contrast to the West's common conception of innovation, which stresses large-scale breakthroughs through technology, management principles, or cutting-edge industrial practices. Kaizen is an action that involves choosing a better approach or changing the present way of doing things to attain a goal of increased productivity and efficiency. Regular and continuing improvement will lower the risk of losses caused by product damage. The Kaizen approach promotes the philosophy of meticulous work, paying attention to each component, and discipline in making tiny improvements that contribute to the formation of an optimal work ecosystem. This is planned so.

In the business world, the use of Kaizen methods has been widely used as a form of effort to increase productivity and increase company revenues so that companies or organizations can continue to grow by the development of market demand. A review of the scientific literature that has been conducted shows that the Kaizen method is almost used in various fields including the production of goods or services. The Kaizen method is a proven way and is carried out in various fields in various countries to increase productivity and reduce production costs and is a major factor in improving performance as a way for the progress of a company or organisation. (Manurung et al., 2021).

Sadina et al. (2021) found that kaizen culture improves student performance. If kaizen culture is practiced optimally or consistently, it will have an impact on the capacity of pupils who are becoming more active, creative, and innovative. If it is generally recognized, the application of kaizen culture has a significant positive influence. One example is the impact on students; Kaizen Culture encourages students to keep moving forward in order to solve all existing problems and evaluations and obtain better results.

SMK.N 43 South Jakarta as a partner in this activity is one of the Vocational High Schools that has 4 Departments, namely: SMK.N 43 is one of the vocational high schools that has Accreditation A, located on Jl. Cipulir I No.1 1 4, RT.1 / RW.4, Cipulir, Kec. Kby. Lama, South Jakarta City, Special Capital Region of Jakarta, 12230. Currently, SMKN 43 Jakarta has 4 Expertise Programmes, namely: Accounting, Digital Business, Office Management, Computer and Network Engineering.

The vision of SMK.N 43 is to produce graduates with integrity, professionalism, entrepreneurial spirit, and global insight based on IMTAQ and Science and Technology. The mission is as follows; 1. Developing the potential of students to behave according to the norms and ethics applied in schools, the industrial world, and the world of work through the project of strengthening the profile of Pancasila students; 2. Improving the competence of students according to SNP and LSP to be competent, superior, and responsible; 3. Developing the optimal potential of students to become creative and innovative entrepreneurs; 4. Developing interactive communication skills of students supported by IT skills by global demands; 5. Developing the potential of students with environmental insight and local wisdom. Currently, SMK.N 43 wants to establish a Logistics Management department because it sees the rapid

development of the logistics world in the country, and wants its graduates to be able to compete in a competitive world.

The need for the introduction of Kaizen principles for students stems from the fact that modern education is increasingly focusing on the development of skills required for success in the workplace. Kaizen principles can assist students in developing the skills of adapting to change and flexibility in facing new challenges in the workplace. Kaizen principles also include the development of effective communication, teamwork, and leadership skills. Kaizen principles not only help students develop the skills they need to become effective professionals, but they also teach them the value of innovation, continuous improvement, and adapting to changes in their workplace. By introducing students to Kaizen concepts, they can develop a deeper knowledge of the concept of continuous improvement and prepare.

The purpose of this activity is to provide an introduction to Kaizen principles in the world of work for students of SMK.N 43 Jakarta. The introduction of the Kaizen principle is part of an effort to introduce the concept of continuous improvement to students. The Kaizen principle has great relevance in the context of the ever-changing modern world of work.

This community service activity (PkM) is expected to provide the benefits of knowledge and understanding for students about the importance of handling Kaizen principles in the world of work and in students' daily lives.

The different benefits predicted from this exercise include: 1) the socialization of Kaizen concepts allows students to build durable abilities that are highly useful in the workplace, such as the capacity to detect problems, analyze processes, and execute continuous improvement, 2). The implementation of Kaizen concepts boosts students' creativity and innovation by encouraging them to think critically about new methods to execute their jobs better. This enables students to become better problem solvers and innovators in the business. 3). Kaizen socializing can boost students' engagement and motivation in the learning process and job preparation. They will feel more involved since they believe they play a role in ongoing improvement in the work environment, which can improve their academic performance and results. 4)Introducing pupils to Kaizen principles prepares them for the ever-changing and dynamic world of work. They will be trained to be flexible, adaptive, and responsive to change, all of which are highly sought after talents in today's employment market. 5.) Kaizen socialization teaches pupils to be adaptable and receptive to change. They will know that learning is a constant process at work and in their personal life, not something that ends when they graduate from school. 6). Kaizen principles emphasize collaboration and teamwork in order to develop solutions for improvement. This socialization can help students work more effectively in groups, communicate, and collaborate to achieve common goals in the workplace. Thus, socializing the use of Kaizen principles in the workplace for students

## LITERATURE REVIEW

*Kaizen* (改善?) is a Japanese term that means "continuous improvement" and is derived from the words "kai" (change) and "zen" (good). According to the Kaizen philosophy, progress is not achieved through large leaps forward. According to Kaizen, progress is made by minor modifications that are repeated hundreds or even thousands of times, resulting in products or services that continue to evolve. Kaizen is defined as refinement and continuous improvement engaging everyone, including managers (leaders) and employees, at a low cost. According to the Kaizen philosophy, our way of life, whether at business, in social settings, or at home, should focus on continual, tiny, steady, helpful changes rather than drastic, one-time, high-cost innovations. (Santosa, Budi, Purnawan, Muhammad Sayuti, 2021)

Kaizen, a Japanese term for the concept of continuous improvement, urges firms to always try to improve via learning and issue resolution. We can never achieve perfection, so we must constantly analyze our performance and take steps to improve it. The Kaizen

perspective turns out to be applicable not only to industrial competitiveness but also to any human situation because the assumption is built on the idea that everyone is interested in and desires to improve. When implemented in enterprises, everyone contributes, therefore this principle emphasizes the inclusion of all parts in the continuous development process (Fitriani, 2018).

Kaizen is the constant improvement of a process; it is one of the fundamental tactics for manufacturing excellence and is regarded as critical in today's competitive world. It requires an ongoing drive for development that encompasses everyone in the organization. Kaizen takes no or minimal expenditure. The underlying premise is that small very significant improvements are more effective in an organizational setting than a few huge value changes. This attitude suggests that tiny, powerful incremental adjustments are consistently implemented and sustained over time, yielding major benefits (Lesmini et al., 2022).

Essentially, continuous improvement focuses on small, incremental changes. This differs from the prevalent definition of innovation in the West, which emphasizes large-scale breakthroughs through technology, management principles, or cutting-edge production practices. Kaizen is an action that involves choosing a better approach or changing the present way of doing things to attain a goal of increased productivity and efficiency. Regular and continuing development will lower the risk of losses caused by damaged items. The Kaizen approach promotes the philosophy of meticulous work, paying attention to each component, and discipline in making tiny improvements that contribute to the formation of an optimal work ecosystem. This is intentional.

Essentially, continuous improvement focuses on small, incremental improvements. This is different from the concept of innovation that is generally popularised in the West, where they tend to make breakthroughs on a large scale through technology, management concepts, or cutting-edge production techniques and emphasize dramatic changes. Kaizen is an action to choose a better way or change the current way to achieve a target to create work effectiveness and efficiency. By carrying out regular and continuous improvement, it will reduce the risk of losses that can be caused by damaged goods. The Kaizen approach puts forward the principle of careful work in paying attention to each component and discipline in making small improvements that lead to the creation of an ideal work ecosystem. This is to ensure that each work produces the best outcomes possible, hence improving the agency's overall quality (Roofii, Mohammad, Mochamad IlhamAkbar, 2023).

Empirical results show that the Kaizen-based evaluation model can discover problems, provide early warnings, and enable self-correction. The model consists of three constructs: a) learning strategy, b) learning behavior, and c) planning professionalism. The evaluation model's components and indicators are based on Kaizen features, specifically identifying difficulties that develop throughout the learning process (Wijayati and Primardiana Hermilia, 2013).

## **IMPLEMENTATION METHOD**

This community service activity is carried out through the following stages: a. the stage of making a proposal, b. the survey stage, namely reviewing the location of the service and conducting interviews with the leadership of SMK.N 43, c. the stage of identifying partner problems and identifying equipment needs for socialization and d. the stage of implementing activities and the stage of making reports and PKM journal articles.

At the interview stage, it was found that the partner's problem was the need to introduce the principles that apply in the world of work/industry to students to enrich their knowledge of the students, finally, it was agreed to carry out the provision of material for introducing the principle of kaizen as one of the principles widely used in industry, the activity was agreed to be carried out directly at SMK.N 43.

The method of implementing activities is through the introduction of basic material on the application of Kaizen principles in the world of work, video playback, interactive discussions as well as games using props. The socialization was carried out directly at SMK.N 43 which is located in the Cipulir area, South Jakarta, on Wednesday 7 February 2024. At the end of the event, light cases were given that students had to solve, this is to train their reasoning in making improvements to cases that need to be resolved in everyday life by applying Kaizen principles.

Below are the PKM activity photos at SMKN. 43 South Jakarta



Picture 1 Photos of PKM Kaizen activity

Here are some of the PPT activity materials:

KAIZEN

Manfaat Penerapan 5S

- PROFIT
- Untuk meningkatkan kenyamanan kondisi lingkungan kerja
- Meningkatkan produktifitas dan kualitas hasil kerja
- Peningkatan inovasi karyawan
- Penghematan biaya
- Memberikan mental karyawan yang positif



Sumber : <http://www.portafolio.com/breast/5s-seit-seitan-seiso-seiketsu-shitsuke/>



Picture2 Partial of Kaizen PPT Kaizen Materials

To determine the extent of the participant's understanding of the basic knowledge of Kaizen, a pre-test in the form of 10 questions was given before the socialization and a post-test in the form of 10 questions after the socialization. Both the pre-test and post-test were given through the Google Form electronic platform in the form of a barcode that could be accessed by participants through the screen through PPT material. Measurement of participants' answers using a Likert scale. The following is a list of questions used in the pre-test and post-test.

**Table 1. Pre Test and Post Test Question Items**

No	Pre Test	Post Test
1.	How well do you know the meaning of Kaizen?	After attending the PKM Kaizen socialization, how well do you know the meaning of Kaizen?
2.	How well do you understand the application of the SEIRI (RINGKAS) principle in a work environment?	After participating in the PKM Kaizen socialization, how well do you understand the application of the SEIRI (RINGKAS) principle in the work environment?
3.	How well do you understand the application of the SEITON (RAPI) principle in the work environment?	After attending the PKM Kaizen socialization, how well do you understand the application of the SEITON (RAPI) principle in the work environment?
4.	How well do you understand the application of the SEITSO (RESIK) principle in the work environment?	After participating in the PKM Kaizen socialization, how much do you understand about the application of the SEITSO (RESIK) principle in the work environment?
5	How well do you understand the application of the SEIKETSU (RAWAT) principle in the work environment?	After participating in the PKM Kaizen socialization, how much do you understand about the application of the SEIKETSU (RAWAT) principle in the work environment?
6	How well do you understand the application of the SHITSUKE (RAJIN/ DISCIPLINE) principle in the work environment?	After attending the PKM Kaizen socialization, how much do you understand about the application of the SHITSUKE (RAJIN/DISCIPLINE) principle in the work environment?
7	How well do you understand the benefits of applying Kaizen (5S) in daily life?	After attending the PKM Kaizen socialization, how much do you understand about the benefits of applying Kaizen (5S) in daily life?
8	How well do you understand the effect of Kaizen in improving work comfort and creativity?	After attending the socialisation, how much do you understand about the influence of Kaizen in improving work comfort and creativity?
9	How much do you understand that the application of Kaizen can improve work results (productivity)?	After attending the PKM Kaizen socialisation, how much do you understand that the application of Kaizen can improve work results (productivity)?
10	How important is the application of Kaizen in daily life? Both in the school environment and the work environment.	In your opinion after attending the socialization of PKM Kaizen, how important is the application of Kaizen in daily life? both in the school environment and the work environment.

**RESULT AND DISCUSSION**

The activity was held on Wednesday, 07 February 2024 at SMK.N 43. The event was attended by 40 people consisting of 35 students and 4 ITL Trisakti PkM Team Lecturers and 1 ITL Trisakti student. The activity was preceded by a meeting with the Principal and teachers of SMK.N 43 in the Principal's room. In this meeting, it was discussed SMK.N 43's plan to establish a Logistics Management department as a new department to complement the existing departments at SMK.N 43 and SMK.N 43 welcomed this activity. Next is the opening by the Principal of SMK.N 43 remarks from representatives of the ITL Trisakti Lecturer Team, and the handover of souvenirs to each party.

Socialization activities began with a brief explanation of the history and basic concepts of the Kaizen principle. Then, the team presents real examples of how the Kaizen principle has been successfully applied in various industries and organizations around the world. The material was delivered interactively through material presentation, group discussions, case studies, and role-play simulations and games. Participants showed great interest in the topic and many were actively involved in the discussions and interactive activities. They

demonstrated a good understanding of the concept of continuous improvement and expressed enthusiasm to apply it in their lives, both at school and in the future in the workplace. Many participants identified a range of improvement opportunities in their own daily lives, from efficiency in scheduling studies to improving the quality of their work output. They also recognized the importance of active involvement in the improvement process and teamwork in achieving common goals.

The material points provided are the limits and scope of logistics, the definition of kaizen, kaizen segmentation, eight deadly wastes, kaizen version 5r, the steps of 5s workplace layout, the benefits of applying kaizen, examples of applying kaizen principles, kaizen standardization, causes of kaizen failure and conclusions. In each session also played additional material in the form of videos so that participants better understand the material provided. After the presentation of the material was completed, the question and answer session continued, in the question and answer session the participants were allowed to ask questions about the material provided and the participants were very enthusiastic in asking questions, both about theory and cases that occur in everyday life. The activity was closed with a group photo session. The following are the results of descriptive analysis of pretest and posttest of socialisation activities.

**Table 2. Pre Test and Post Test Descriptive Statistic**

NO.	Variable	PRE TEST					POST TEST					selisih presentasi	Prosentasi kenaikan
		N	N <sup>2</sup>	Mean	SE Mean	StDev	Mean	SE Mean	StDev				
1	Arti Kaizen	34	0	2,12	0,17	1,01	4,47	0,11	0,62		2,35	111,10%	
2	Prinsip SEIRI	34	0	2,38	0,14	0,82	4,47	0,10	0,56		2,09	87,68%	
3	Prinsip SEITON	34	0	2,65	0,15	0,85	4,50	0,10	0,56		1,85	70,00%	
4	Prinsip SEITSO	34	0	2,53	0,16	0,93	4,44	0,12	0,71		1,91	75,60%	
5	Prinsip SEIKETSU	34	0	2,74	0,16	0,93	4,47	0,11	0,62		1,74	63,47%	
6	Prinsip SHITSUKE	34	0	2,65	0,17	0,98	4,50	0,11	0,62		1,85	70,00%	
7	Manfaat 5S	34	0	2,74	0,16	0,93	4,53	0,09	0,51		1,79	65,61%	
8	Pengaruh Kaizen terhadap kenyamanan dan kreatifitas kerja	34	0	3,09	0,18	1,03	4,56	0,09	0,50		1,47	47,63%	
9	penerapan Kaizen dapat meningkatkan hasil (produktivitas) ke	34	0	2,77	0,14	0,82	4,47	0,10	0,56		1,71	61,69%	
10	penerapan <i>Kaizen</i> dalam kehidupan sehari hari ?	34	0	3,68	0,21	1,20	4,68	0,09	0,53		1,00	27,22%	
Rata Rata				2,7322			4,5089					68%	

**Table 3 Pre Test dan Post Test analysis**

Sample	N	Mean	StDEv	SE Mean
Pre Test	35	2,7322	0,495	0,163
Post Test	35	4,5089	0,579	0,099

The results of the pre-test and post-test analysis above reflect the positive impact of the introduction of the application of Kaizen principles in the world of work at SMK.N 43. Before participating in the socialization, the average score of the pre-test participants was 2.7322, while after the socialization, the average score of the post-test participants was 4.5089. This means that there is an increase in understanding by 1.777 points or 65%, which shows an increase in students' understanding of the Kaizen principle. This indicates that the socialization activities are effective by the objectives of the activity.

The application of Kaizen in daily life is the item that experienced the smallest increase of 27.22%, although the lowest still indicates an increase in participants' understanding after the material provision activities were carried out. However, it indicates the need for further material provision so that student's knowledge of basic Kaizen knowledge is getting better. The item that experienced the biggest increase was about understanding the meaning of Kaizen, namely 111%, which reflects those participants already knew about the meaning of Kaizen.

**Table 4 Sample Difference Estimation**

Estimation for Paired Difference

Mean	StDev	SE Mean	95% CI for $\mu_{\text{difference}}$
1,889	6,920	0,692	(0,516; 3,262)

$\mu_{\text{difference}}$ : mean of (C1 - C2)

**Table 5 T Test**

Test	
Null hypothesis	Ho: $\mu_{\text{difference}} = 0$
Alternative hypothesis	H <sub>1</sub> : $\mu_{\text{difference}} \neq 0$
T-Value	P-Value
2,73	0,007

Furthermore, the author conducted a paired sample t-test to test whether the difference between the pretest and post-test scores was statistically significant. Descriptive analysis showed that the mean posttest score (3.66) was higher than the pretest score (4.41). The analysis results show that there is a significant difference between the pretest and posttest scores where the mean posttest > pretest.

Overall, the post-test results reflect that this activity improves student understanding and can stimulate student critical analysis of minor cases that require handling through the application of Kaizen principles.

**CONCLUSION AND SUGGESTION**

Based on the results of the pre and post-test, it can be concluded that this activity is running effectively, this can be seen in how the participants (students) are very enthusiastic about participating in the event from start to finish, especially in the question and answer session (discussion) many things are asked by the participants, especially in terms of applying the principles of Kaizen principles in everyday life, this can also be seen in the survey results given to participants through questionnaire forms both Pre Survey and Post Survey where information was obtained that all participants stated that their understanding increased after participating in this activity and many proposed to hold another continuation of this activity to increase their understanding of the application of Kaizen principles for continuous improvement.

This activity cannot be carried out without the help of various parties, for that the socialization team would like to thank the leaders of ITL Trisakti: Rector of ITL Trisakti, Vice Rectors of ITL Trisakti, Director of P3M ITL Trisakti and staff, Principal, Mr / Mrs Teachers, all staff at SMK.N 43 and students as participants, students involved in the implementation of this PkM, and all parties who cannot be mentioned one by one, for their cooperation and assistance so that activities can run smoothly. We hope that this activity can bring benefits to all parties.

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