

# The Implementation of Kaizen in the Medical Doctor Study Program

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## The Implementation of Kaizen in the Medical Doctor Study Program

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### Abstract

The improvement of education quality is crucial in increasing the human resources. The Kaizen model implementation has successfully made the Airlangga University Medical Study Program to improve its education quality. It can be seen from the achievement gotten where this study program got the An Accreditation from the National Higher Education Accreditation Institution. An understanding of the Kaizen model implementation to increase education quality is an important thing. It is because nowadays there are still a lot of study programs at the Indonesian University which are unable to get the An Accreditation. That is why; this research is done to know the implementation of the Kaizen model in the quality management of Airlangga University Medical Study Program. This research follows the case study research method. The data were collected by using the observation technique, interviews, and documentation. Then, the data would be analyzed qualitatively by using an interactive analysis. The result of this research showed that the Kaizen approach implementation is based on several basic principles. It is done in several segments and also done based on some basic concepts. The discussion about that research result is explained in more detail in this research. It is hoped that this research result can be used as one of the alternative models in doing the quality assurance for a study program which wants to increase its accreditation mark to the A-one.

**Keywords:** quality assurance system, Kaizen, human resource quality improvement, accreditation

### 1. Introduction

#### The importance of human resource improvement

Indonesia will face the era of the best opportunities, namely demographic bonus in 2020-2030 so that it can be the best in terms of the economy in the world in 2030. However, this will be realized if Indonesia can utilize the demographic bonus by printing a quality workforce. This era requires humans who have competitive advantages to compete in the global arena (Imron, 2012).

If it is not appropriately prepared, the demographic bonus can become a boomerang because there will be a lot of unemployment. Thus, efforts to improve the quality of Indonesia's human resources to deal with this demographic bonus must be well prepared and implemented. The quality of human resources has a vital role in the competitiveness of a country. The quality of education, especially higher education, is a determinant in determining the quality of the workforce (Mulliqi, Adnett, Hisarciklilar, & Rizvanolli, 2018; Sulisworo, 2016). Higher education has a responsibility, and it is a place to produce professionals. At the same time, it also becomes the center of innovation development in various fields. Therefore, improving the quality of education in higher education becomes an absolute thing. It is because a good quality higher education will produce human resources with good

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competitiveness (Darra, 2006). Simply stated, it can be seen from the fact that a country that has the highest quality universities in the world automatically will have human resources with a high level of competitiveness (Labas, Darabos, & Nagy, 2016).

Increasing human resources will have a significant impact on the progress of a country. With the improvement in the quality of education, the human development index will also increase, which will affect local and national economic growth (Lane, 2012; Tomáš, 2011).

Furthermore, if the local and national economic growth increases, it means that the community's welfare will also increase. Higher education has a crucial role in improving the quality of human resources and reducing poverty nationally (Kasradze & Zarnadze, 2018).

Therefore, to guarantee the quality of higher education, the Indonesian government applies an accreditation system that measures the quality of a tertiary institution. As explained in the Regulation of the Minister of Technology and Higher Education Number 35 of 2016, accreditation aims are to guarantee the quality of Study Programs and Higher Education externally both in academic and non-academic fields to protect the interests of students and society (Regulation Of The Minister of Research, Technology, and Higher Education of The Republic of Indonesia Number 32 Of 2016 Regarding Accreditation of Higher Education and Study Programs, 2016).

In response to this, every university in Indonesia currently has an internal quality assurance system. The quality management system is a determinant of the accreditation or quality results of a tertiary institution (Ryan, 2015). Proper quality management is proven to increase higher education quality (Papanthymou & Darra, 2017).

However, although each tertiary institution has a quality assurance agency and implements an internal quality assurance system, as many as 28.4% of study programs in Indonesia are still in a grade of C for their accreditation ("Rank Distribution," 2019). In realizing higher education quality management that can produce good quality education, readiness to make changes in systems and models in administrative matters is a must (Sari, Firat, & Karaduman, 2016). For this reason, study programs that have not yet received an A accreditation score must make efforts to obtain an A grade and be willing to do something new. The new thing that the study programs can do is implement a model of implementing a quality assurance system that has successfully improved the quality of study programs.

The Kaizen model is a model for implementing a quality assurance system that has brought the Airlangga University Medical Study Program to obtain an A accreditation score. This study will be a source of information for other tertiary study programs that wish to adopt the Kaizen model to implement quality assurance to improve accreditation results. Examples of the implementation of the Kaizen model will help other study programs because learning through good examples will help the understanding process so that the success rate will be higher (Chick, 2007).

## 2. Method

This study aims to know how the Kaizen implementation in the Medical Doctor Study Program, Medical School, Airlangga University. Based on that aim, this research is classified into a descriptive case study, a type of research that describes the phenomenon being studied (L BERG, 2001). The researcher collected the data through interviews, observation, and documentation techniques. The collected data is then analyzed qualitatively using an interactive analysis model consisting of three stages: data reduction, data display, conclusion drawing/and verification (Miles, Huberman, & Saldana, 2014). The researcher used technique triangulation to check data validity and reliability.

## 3. Result

Based on the interview, documentation, and observation result, this study identifies that the Kaizen model implementation in the Medical Study Program of the Airlangga University can be seen from the principle, segmentation, and concept points of view. Below are the descriptions of each Kaizen model implementation in a quality assurance system at the Airlangga University Medical Study Program based on those three points of view.

### Kaizen Implementation based on the principle

Kaizen is a philosophy from Japan that focuses on continuous development and improvement. In the implementation of Kaizen, it follows the 5S principle. The 5S principle is a process of changing attitudes by applying structuring, cleanliness, and discipline in the workplace. The 5S principle is a culture of how a person treats his workplace properly. If the workplace is neat, clean, orderly, then the ease of working for individuals can be created. With this ease of work, four main target areas of the industry include:

- 1) Work efficiency
- 2) Work Productivity
- 3) Work Quality
- 4) Work safety

The definition of 5S is the principle of improving the work environment derived from the Japanese words, namely: seiri, seiton, seiso, seiketsu, and shitsuke. These principles focus on effective workplace organizations, ranging from the physical environment and gradually to the functional aspects, which affect 5S to simplify the work environment and reduce waste and valueless activities while increasing efficiency and quality safety. 5S is the main activity and illustrates the basic philosophy of Kaizen.

The 5S principle is an instrument for making inroads in improving the work environment. 5S is a principle and a series of actions that must be carried out systematically with the full participation of all members of the organization or institution.

The following explanation is a more detailed explanation of the parts of the 5S principle:

#### 1) Seiri

Seiri is to separate necessary things from those that are not needed and get rid of what is not needed (concisely). Many items are unnecessary in every factory. Unnecessary goods mean that goods have nothing to do with current production activities. To find out the items that need to be thrown away, the goods must be separated.

#### 2) Seiton

Seiton is to arrange neatly and recognize objects to facilitate use. The Japanese word "seiton" literally means to arrange things in an attractive (neat) way. In the context of 5S, this means arranging things so that everyone can find them quickly. To achieve this step, we can use a designation mark to determine each item's name and storage. Seiton allows workers to easily return to a location near the place of use. We use pointing plates to facilitate the placement and retrieval of materials needed.

#### 3) Seiso

This principle always uses cleanliness as its main focus. It is done by always maintaining cleanliness and neatness.

#### 4) Seiketsu.

The concept of Seiketsu means continuous effort to pay attention to the 3 S above. Those are Seiri, Seiton, and Seiso. In principle, work so that the workplace has become good so that it can always be maintained. A well-maintained and well-organized workplace and irregularities can be detected immediately so that various problems can be prevented as early as possible.

#### 5) Shitsuke

Shitsuke is a method to motivate workers to continuously carry out and participate in maintenance and repair activities and make workers

accustomed to obeying the rules (diligently)? Diligent is considered the most difficult component of the 5 S. For this activity, Japanese workers have to practice self-control.

The 5 S principles are also available in English, which also uses the S letter as its initial. These are those translations:

- 1) Sort: remove unused items from your venue of work; and reduce clutter (Removal/organization)
- 2) Set: organize everything needed in proper order for easy operation (orderliness).
- 3) Shine; maintain a high standard of cleanness.
- 4) Standardized: set up the above three S as norms in every section of your place standardized.
- 5) Sustain: train and maintain the discipline of the personnel engaged (self-discipline).

Due to the kaizen implementation, an institution (in this case is the education institution) needs to apply the main concepts; those are as follows:

- 1) Implement repair and maintenance functions in management
- 2) Emphasizing the process-oriented mindset that must be refined to improve results
- 3) Implement the PDCA cycle (plan, do, check, act)
- 4) Prioritizing quality as the highest priority
- 5) Gathering data as a basis for solving problems
- 6) Apply the next process to internal and external consumers

The main Kaizen system implementation consists of things, such as:

- 1) Total quality control, which is the process of controlling performance to achieve quality
- 2) Just in time, eliminating all kinds of non-value-added activities and achieving a lean and flexible production system to accommodate fluctuations in consumer demand and orders.
- 3) Total productive maintenance, focusing on improving the quality of equipment
- 4) Description of company activities, to provide direction and targets that focus on all levels and provide control.
- 5) The suggestion system to improve morale and enlarge the positive benefits of participatory employees.
- 6) Small group activities, namely task forces, to carry out specific group tasks.

Based on philosophy, Kaizen considers that our way of life, such as work-life or social life or household life, should be focused on continuous improvement. Improvements in Kaizen are small and gradual. This is in line with the findings of the research. The Medical Doctor Study Program has achieved consistent improvement starting from small to large things gradually. With the fact that the

Quality Assurance Unit of the Faculty of Medicine holds monthly audits and monthly meeting to discuss matters which concerns the quality of education and what are the obstacles, problems that arise and require solutions to guarantee the quality of education in Medical School Airlangga University.

#### **The Implementation of Kaizen based on the segmentation**

In terms of kaizen segmentation, the Kaizen model involves three segments. Those segments focus on management, groups, and individuals. From this segmentation, based on the research results, it can be said that the implementation of Kaizen in the Medical Doctor Study Program of Medical School at Airlangga University has been going very well and optimally. That was based on the following research findings:

##### **A. Kaizen which is oriented to the management**

It focuses its attention on the most important logistical and strategic issues. It also provides momentum to pursue progress and morals. In this segment, Medical Doctor Study Program of Medical School at Airlangga University is proven to have implemented well-directed and well-structured study programs. This is reinforced by the findings, including:

- 1) Organizational structure and clear division of job descriptions
- 2) The division of tasks (job description) is adjusted to each employee (right position on the right hand)
- 3) Clarity of the work system
- 4) There is a PDCA implementation (plan, do check, act) which is a characteristic of Kaizen.

##### **B. Kaizen which is oriented to the group**

It is implemented by the Quality Control Group for voluntary management using statistical tools to solve problems analyzing, implementing, and setting new standards or procedures. In this segment, PSPD FK UNAIR is proven to have implemented a very good quality assurance system in the medical education study program. This is based on research findings that there is an SPM Unit (Quality Assurance System) at the faculty level, namely the Faculty of Medicine, which is structured and well-coordinated with the UJM (Quality Assurance Unit) at the level of the Medical Education Study Program?

#### **The implementation based on the Kaizen Effort Balance and Innovation**

An important aspect of Kaizen is prioritizing the process. It is in contrast to Western management who assess employee performance only based on the results obtained and not on their efforts. Based on the aspect of the difference between Kaizen and innovation, it can be said that the FK UNAIR Medical

Education Study Program has implemented both of them, namely maintaining the quality of the process optimally so that the quality of the results obtained is following the targets expected by FK UNAIR. Based on existing theories, if the two are combined (i.e., between Kaizen and innovation), it will produce perfection. This is reinforced by the research findings, including PSPD FK Airlangga University, besides always trying to implement evaluation efforts and audit systems for all systems concerning the education and learning process in the Medical Education Study Program to maintain and improve quality in a sustainable manner. This institution also always trying to produce creative and innovative ideas as an effort to innovate, including with:

- a. Compile and include several additional courses in completing compulsory medical education courses, for the students, which are aimed at improving soft skills, and the students' expertise so that they are truly ready to engage in society when graduating as a doctor.
- b. Arranging innovation programs in providing full support for all community (both lecturers and students) in achieving, and optimizing their potential and developing their competencies.
- c. Conduct an exchange program as an additional learning program (in several countries with established partnerships) with FK Universitas Airlangga. This program is provided for medical education students (pre-clinic) to gain learning experience abroad and the additional experience, which can enrich knowledge and make a very positive contribution to their students.

From some examples of these efforts, it can clearly be said that the Faculty of Medicine, Airlangga University, has carried out very well the Implementation of Kaizen and innovation efforts in sustainably developing its quality.

#### **The Implementation of Kaizen based on the concept**

The kaizen concept consists of several things, such as:

##### **a. 3 M Concepts (Muda, Mura, dan Muri)**

This concept was made to reduce many work processes, increase quality, reduce time, decrease, or efficiency.

- 1) Muda: interpreted as a reduction in waste
- 2) Mura: interpreted as a reduction of difference
- 3) Muri: interpreted as tension reduction

Based on the 3M concept (Muda, Mura, and Muri), the Kaizen Implementation in the Medical Study Program of FK Airlangga University is in synergy with the concept, where to continuously improve its quality, FK UNAIR strives to run all programs that have been determined very effective

and efficient, to achieve optimal results. In this concept, the implementation can be seen in the division of work which is very well structured, the selection of highly competent people according to their expertise and capacity to lead and carry out these responsibilities, and based on observations made by researchers during the research, cultural discipline and timely, respect for each other, solid teamwork, and awareness to advance and together maintain quality is visible from the entire FK UNAIR community (from staff to the top leadership).

#### **b. PDCA Concept (Plan, Do Check, Act)**

The first step in Kaizen is to implement the PDCA cycle (plan, do, check, act) to ensure the continuity of Kaizen. This is useful in realizing policies to maintain and improve or improve standards. Based on this concept, it can be said that the implementation of Kaizen in FK UNAIR Medical Education Study Program has implemented the concept of PDCA (plan, do, check, act) very optimally, this is reflected in the implementation of the RTM annually, as well as regular monthly meetings.

Management Review Meeting (RTM) is a meeting that discusses the application of the quality system to ensure the suitability, and effectiveness of the quality policy, performance targets, with the university's strategic plan, where the results of the meeting and the stipulated policies will be forwarded to the level of the study program.

The purpose of the AIMS RTM Procedure Guidelines is to guide top management to carry out regular and continuous quality system evaluations to ensure the suitability, and effectiveness of quality policies, performance targets with the university's strategic plan.

From the implementation of the RTM, and other audit and evaluation systems. The Medical Education Study Program, Medical Doctor faculty, Airlangga University, has implemented PDCA (plan, do, check, act). Where, efforts to guarantee and improve the quality that has been planned, then realized, followed by an evaluation to see the effectiveness of these programs and efforts, which after being evaluated and found deficiencies (carried out repairs), if found obstacles (sought solutions and solutions), to further carry out better and optimal based on the results of the evaluation.

#### **c. 5W + 1H Concept**

One of the mindsets to run PDCA wheels in kaizen activities is by asking questions. This is done using the basic 5W + 1H questions (what, who, why, when, where, and how). The concept of 5W + 1H in the implementation of Kaizen carried out by FK UNAIR Medical Education Study Program can be

seen from the plan's efforts to determine the work program (work plan) prepared by the SPM Unit (Quality Assurance System) FK Airlangga University. In determining a program/work plan to be carried out, the quality assurance Unit uses the concept of 5W + 1H to ensure that the program is important to implement, such as:

- 1) What are the work plans/programs to be carried out? What ideas need to be implemented? (What)
- 2) Who is the right person to run, or is responsible for the work program? (Who)
- 3) Why is the work program important to be implemented (urgency, benefits) you wanted to obtain? (Why)
- 4) When can the work program be implemented? (Determining the Implementation time)? (When)
- 5) Where will the program be implemented (at what level, or in what section) will the program be implemented? (Where)
- 6) How to implement the work program so that it can run effectively, efficiently, and achieve the expected goals? (How)

#### **4. Discussion**

##### **The Implementation of Kaizen based on the principle**

This study's results indicate that the implementation of Kaizen S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) emphasizes the neatness of administration, document structuring, and workspace. The administration implementation becomes very important in accreditation matters because the administration implementation reflects the quality of a tertiary institution (Makhoul, 2019). For this reason, every tertiary institution must be prepared to always strive for their administrative system to be better from time to time. If the administration is carried out in an orderly and neat manner, all activities carried out in tertiary institutions will be carried out properly and recorded properly. Thus, during the implementation of accreditation, good administration will greatly assist the preparation process up to the stage of implementation of the accreditation visitation. Along with the development of technology, the administration also often changes with the availability of new systems or technologies. Thus, universities must be prepared to apply different administrative system models for quality improvement (Sari et al., 2016).

It is important to realize that accreditation is an assessment process based on the existence of physical evidence regarding all activities carried out in tertiary institutions (Beerkens, 2018). The existence of documents relating to the accreditation assessment standards is essential in accreditation

activities. If the document arrangement is not good and difficult to access, it will cause problems in accreditation implementation. Therefore, tidiness in arranging documents and work environment becomes very crucial. If all documents are neatly organized and the campus environment is neatly organized, the required documents will be easy to obtain. With the support of current technology, the implementation of documentation and archiving can be done easily without having to print. In fact, in the current digital era, the use of technology in education has become necessary (Hadi, Baharuddin, DALLE, & HAYATI, 2017).

Furthermore, when viewed from the perspective of students, the campus environment's arrangement also greatly affects their perception of campus quality (Akareem & Hossain, 2016). One indicator that students normally consider when choosing a campus is the campus environment (BERKÖZ & ÇELİK, 2016). In other words, the university management is obliged to organize the campus environment, especially for private campuses, because it will affect the value of accreditation and build student confidence.

#### **The Implementation of Kaizen based on the segmentation**

The internal quality assurance system has a vital role in improving the quality of higher education. The performance of the manager of the quality assurance system will determine the outcome (Seyfried & Pohlenz, 2018). However, from the perspective of segmentation, the results of this study indicate that all structural layers in the campus environment must be involved in realizing higher education quality. It is because quality assurance is a procedure, regulation, and system that is carried out by all parties internally and externally to achieve the desired quality (J. Williams, 2016). Without the support of all parties in the campus environment, it will be very difficult to realize a quality assurance system that can produce the expected quality. Moreover, the quality of a quality assurance system in higher education is influenced by the implementer and the activities carried out (Elken & Stensaker, 2018). Considering that the implementers referred here are all parties within the campus environment, all must carry out the procedures, regulations, and systems that have been established by the quality assurance system. The problem of higher education quality is not only the responsibility of lecturers and staff at the college but also the responsibility of students. Therefore, in shaping the quality of higher education, it is important to involve students in the quality assurance process (Coates, 2005). This involvement must be done in every activity in

tertiary institutions, namely education, research, and community service.

However, as an education implementer, lecturers certainly have an extra challenge in realizing the quality of education. Several studies have proven that the quality of an educator has a crucial role in shaping students' quality (Bambaeroo & Shokrpour, 2017; Darling-Hammond, 2000; Mahler, Großschedl, & Harms, 2018). Educators' role is not only in academic quality but also in the character of students (Blazar & Kraft, 2017). For this reason, educators in higher education must have good quality. They must have high motivation to carry out work and always pay attention to students who are educated (Centeio et al., 2018; Kiany & Shayestefar, 2011). To realize these qualities, all components of higher education must also be prepared for changes or transformations that will require time, effort, willingness to realize a culture of quality and continuous improvement (Tam, 2001).

For this reason, training for educators is also very important because, through training, educators can improve the quality of the learning process (Webster-Stratton, Jamila Reid, & Stoolmiller, 2008).

#### **The Implementation of Kaizen based on the concept**

From the concepts applied to the Kaizen model, the most emphasis on the concepts applied to the Kaizen model is the problem of effectiveness and efficiency. Efficiency and effectiveness are vital in realizing quality like research conducted by Nadoveza Jelić and Gardijan Kedžo (2018), who found that higher education management had a significant influence on the quality of higher education. In the education world, efficiency in the implementation of education is related to the time and energy needed by educators and students to achieve learning goals (Figurek, Shynkarenko, & Kovalenko, 2019).

Efficiency is important to be implemented in universities in developing countries so that they can produce quality graduates with shorter time and lower costs (Johnes, Portela, & Thanassoulis, 2017; Kosorak, 2013).

By increasing efficiency in tertiary institutions, it will help the government improve the quality of the workforce and the nation's competitiveness. It is because the country's socio-economic state will be greatly influenced by the level of education of its population (Cornali, 2012). Meanwhile, the world of education's effectiveness can be understood as the ability to achieve educational goals in the best way. To be able to realize efficiency and effectiveness, support for supporting facilities is needed. An

example is information technology support in the learning process. Several studies have proven that using technology in teaching and learning can improve learning effectiveness and improve student learning outcomes (Cheryan, Ziegler, Plaut, & Meltzoff, 2014; Ibe & Abamu, 2019; Ramli, Zain, Campus, Chepa, & Bharu, 2018).

That is because the use of technology will make learning more interesting and flexible (Baharuddin & Dalle, 2019; Lumpkin, Goodwin Jr, Hope, & Lutfi, 2014). The students will feel happy and willing to study (S. Williams, Schneider, Wornell, & Langhinrichsen-Rohling, 2018).

Seeing the importance of supporting facilities in improving the quality of learning, many parents of students perceive that a good learning place must have good facilities. So, in choosing schools and colleges, facilities become an important consideration for parents (Adebayo, 2009).

In improving the quality of higher education, university managers must consider the fulfillment of stakeholder demands and student satisfaction (Prasad & Jha, 2013). Regarding the safety of the school today, it is also very important in the learning process. For example, an increase in cases of violence in schools is increasingly widespread, so the security and order of schools through the implementation of the latest technology such as the provision of CCTV need to be improved to make the learning process more optimal (Cornell & Mayer, 2010).

##### 5. Conclusion

From the results of this study, it can be concluded that the application of the kaizen model is based on several basic principles. It can be applied to several segments and is based on several basic concepts. The basic principles implemented in the Kaizen model are 5S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke), which emphasizes administration and neatness in administration, documents, and work environment. In terms of segmentation, the Kaizen model applies management-oriented segmentation and groups that emphasize the involvement of all components in tertiary institutions. Whereas in terms of concepts, those are called the concepts of 3M, PDCA, and 5W + 1H, the Kaizen model emphasizes more on efficiency and effectiveness. This research is limited only to the application of the Kaizen model in the Medical Education study program at Airlangga University with a qualitative approach. For this reason, further research with a quantitative approach is needed to measure how significant the quality improvement produced by implementing the Kaizen model.

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