Implementation of 5-R Industrial Culture in Workshop Motorcycle Business Technique in Vocational Schools

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Abstract. The purpose of this study was to find out the implementation of 5-R industrial culture in TBSM workshop of SMK Negeri 1 Bendo Magetan based on Ringkas, Rapi, Resik Rawat and Rajin. This study uses a qualitative approach. The process of collecting data uses interviews, documentation, and observation. The data analysis technique used in this study is data reduction, data display, and conclusion. To check the validity of the data is done by reobserving and triangulating. The object of this research is TBSM workshop of SMK Negeri 1 Bendo Magetan, Head of Automotive Department, Head of TBSM Division, Head of Workshop, Toolman, Productive Teachers and Students of SMK 1 Bendo Magetan. The results showed that the implementation of an industrial culture in a 5-R based workshop (Ringkas, Rapi, Resik, Rawat, Rajin) at the TBSM workshop at SMK Negeri 1 Bendo Magetan had gone well.

Keywords: industrial culture, 5-R, TBSM workshop

1. Introduction

The Educational development is not only to develop intellectual aspects, but also the character, moral, social, and physical of students. In other words, education aims to create a complete Indonesian human being. This effort is carried out in order to improve the quality of Indonesian human resources and the quality of education. Realization of the achievement of development goals is carried out with various learning programs, improvement of school infrastructure, training of human resources both teachers, employees and students, and by implementing the ISO 9001: 2000 Quality Management System in the implementation of school management. All efforts are made towards achieving the objectives of Vocational Secondary Education: producing human resources that can be a factor of excellence in various development sectors; turning students from burden status into productive 21st century development assets; produce professional workforce to meet the demands of industry 4.0 needs in particular, and general development requirements; and equip students to develop themselves...
professionally. In line with the demands of globalization, there are SMK that are developing with the implementation of quality management standards through revitalization of SMK, so the implementation of school activities inevitably must refer to international standards, including safety and health standards. TBSM practical workshop (Motorcycle Business Technique) Excellent Vocational School in Magetan city such as SMK Negeri 1 Bendo Magetan which has received a standardized certificate from PT. AHM Honda generally has adequate workshop facilities. This facility continues to be improved from year to year both in terms of quantity and technology to support student practicum activities according to government and industry policies in expanding access to education in Vocational Schools. Seeing this condition based workshop management (5-R), namely (Ringkas), (Rapi), (Resik), (Ruwat), and (Rajin) offering a solution to the problem above. Management A company or organization will not be able to achieve its intended goals if it does not have a good management system. Although management is only a tool to achieve goals, it must be managed as well as possible. Because if management is good then optimal goals can be realized, wastefulness is avoided, and all the potential possessed will be more beneficial. Hasibuan [1] (2009: 1) explains that management comes from the word to manage, which means to regulate. Arrangements are carried out through a process and arranged according to the order of management functions. If we want to do work efficiently and without mistakes, we have to do it every day. In this study aims to determine the implementation of workshop management TBSM SMK Negeri 1 Bendo Magetan reviewed Ringkas, Rapi, Resik, Ruwat, Rajin.

1.1 Industrial Culture of 5-R
Work culture is a view of life where the realization of work culture is seen from the values that become the traits, habits, driving forces, attitudes that are entrenched in community groups or organizations that become a behavior, belief, ideals of opinion and action. One work culture in Japan is called Kaizen. Kaizen or Just In Time is an improvement strategy in quality management. The concept of kaizen in Japan is process-oriented, while in European countries tends to be results oriented which has been renewed [2] (Imai, 2008). The important part of Kaizen is the willingness to change, advance and prioritize quality, consistency, mutual communication and involvement throughout. The Kaizen concept consists of several things, one of which is the 5-S movement. The concept of the 5-S movement is a process of changing work attitudes by applying structuring, cleanliness and discipline in the workplace, it can make someone know how to treat their workplace correctly (Imai, 2008). Workplaces that have been neatly arranged, clean and orderly will provide convenience for workers. According to [3] (Sutalaksana, 2006) this ease of work covers four target areas in the main industries, namely, work efficiency, work productivity, work quality and work safety. 5-S is known as one of the work culture of the legendary Japanese country. 5-S comes from 5 Japanese words, namely Seiri, Seiton, Seiso, Seiketsu, and Shitsuke. The five words were then translated into various languages in the world to be applied to the way it works and used as one of the work cultures in many large companies in the world. In Indonesian, 5-S is translated as 5-R, Ringkas, Rapi, Resik, Ruwat, and Rajin.

1.2 Vocational Education
According to Pavlova, M [4](2009) that vocational education is closely related to the skills to use tools or machines. Vocational education is different from general education, in vocational education learning emphasizes skills and understanding concepts explained through theory and then applied directly in practice. Whereas according to Clarke, L., & Winch, C. [5] (2007) vocational education is education that prepares individuals to enter the world of work later in the learning process associated
with practicum and mastery of competency techniques. The purpose of vocational education is to provide the labor market at the sub-professional level, it can be explained that the meaning of the statement is that vocational education aims to provide sub-professional level work.

2. Methodology
This study uses a qualitative approach. The process of collecting data uses interviews, documentation, and observation. The data analysis technique used in this study is data reduction, data display, and conclusion. To check the validity of the data is done by reobserving and triangulating. This research was conducted at SMK Negeri 1 Bendo Magetan, East Java in March 2018. The following are some speakers who have important contributions in this study, including: Mr. Hari as head of the Automotive Department, Mr. Sugiharto as head of TBSM, Mr. Kusnadi as head of workshop TBSM, Mr. Winarno as productive teacher, Mr. Didik as Productive teacher, Mr. Dendy as toolman and Sofyan as student at SMK Negeri 1 Bendo Magetan.

3. Result and Discussion
At this stage, it will be explained about the implementation of the 5-R in the TBSM workshop at SMK Negeri 1 Bendo Magetan.

3.1 Implementation of Ringkas
Implementation Seiri (Ringkas) is the selection process by choosing which items are disposed of or items that can still be used again. According to Osada [6] (2000) explained in handling the pile of goods in the workshop, namely: (1) Carry out cleaning and (2) Dispose of items that are not needed. So at TBSM SMK Negeri 1 Bendo Magetan workshop for goods that cannot be used again such as oil, motorcycle spare parts from the results of the students’ practice are not wasted but sold and money from the sale can be used to buy new fuel and oil to practice in a workshop. For student items that are no longer needed or damaged, they are accommodated and sorted again to be sold so that SMK 1 Bendo Magetan can get income. For items or spare parts that are damaged and cannot be used again, they are stored in the workshop warehouse. Process seiri or ringkas can be seen from the documentation in the form of the image below:

![Figure 1: Stacks of items that have not been used](Source: Personal documentation)

3.2 Implementation of Rapi
Saiton (Rapi) presented in two, namely the arrangement of tools and machine layout, database processing.
3. 2. 1 Tool Arrangement and Machine Layout
Basic principles *seiton* rapi is setting up the work environment and equipment neatly with the goal of layout and placement that is efficient so that the waste of time looking for items can be reduced and to facilitate work. All tools in the workshop of Vocational High School 1 Bendo Magetan have been neatly arranged in accordance with the similarity, size, and characteristics of the above statements supported by the theory of Hadiguna and Setiawan [7] (2008) describing that in arranging the tools to be neatly arranged according to their similarity, size and characteristics. By being given a code name tool and location code, it will be easier to find the tool in accordance with the concept Rapi (*Seiton*) that is, being able to find tools easily and eliminating the process of searching for a tool that takes a long time. The following are the documentation in the form below:

![Arrangement of workshop work area](image)

Figure 2: Arrangement of workshop work area

Source: Personal documentation

3. 2. 2 Database Setup
The database in the TBSM workshop functions to archive all equipment / machine data, workpieces and record equipment in and out and which is damaged and not damaged, so that everything is clearly recorded in the form of certain formats. According to Osada (2000: 170) states that in archiving databases that must be considered are:

- Clearly place each file and document. Mark each shelf and cupboard to show what is stored there. Speed up the process by helping people quickly find the information needed.
- Try to get everyone to get and use information. Your archives according to sections, sections, divisions and the like. Don't create a situation where only someone knows what is there and someone can use the archive.
- Only save documents and files that are really needed. Determine the standards and criteria for what will be stored and what will be discarded. Prevent complex systems and unused space. Prevent waste of places and inefficient processes.

TBSM workshop database is neatly arranged but still in the form of hardware. All tools and objects in the workshop of SMK Negeri 1 Bendo Magetan are all recorded if any items are entered, they are immediately recorded or there are damaged equipment, all of which have been recorded in the database as school inventory. All workshop databases in the form of hardware are all arranged neatly in a special database cabinet. And the database is codenamed for example the database itself, the material itself and the machine itself. The following documentation results in the form of pictures:
Figure 3: Implementation of Neat Database TBSM Workshop  
Source: Personal documentation

3. 3 Implementation of Resik

3. 3. 1 Cleaning Workshop
The cleaning process at the TBSM workshop in SMK Negeri 1 Bendo Magetan was responsible for each of them, for example in the TBSM workshop which was responsible for workshop cleaning and neat workshops involving students. The workshop cleaning involves students so that the teacher only divides students into groups to be assigned workshop pickets whose job is to clean the entire TBSM workshop as the floor is swept, clean the practice site from the rest of the practice then return the tool to the tool room so that the workshop becomes clean as before before student practice. For cleaning in the tool room it's the responsibility of the toolman to be cleaned every day so that the laboratory room is neatly arranged, clean, beautiful and comfortable.

Figure 4: Arranging tools, keys and measuring instruments according to the name, size and label  
Source: Personal documentation

3. 3. 2 Maintenance of Motorcycle Practice Tools
The process of maintenance of tools in TBSM workshop of SMK Negeri 1 Bendo Magetan is definitely carried out periodically in order to minimize damage or loss caused by student practical activities in accordance with the schedule made by the head of the workshop. The carlift maintenance tune up the motorcycle every two weeks and for measuring devices once a month and those who carry out maintenance or repairs are the tasks of a toolman assisted by the head of the workshop and all productive teachers after practicing. The maintenance schedule is scheduled so the toolman just needs to see the schedule and immediately take care. Sumantri [8] (1989: 22) explained that routine care is
treatment carried out under limited circumstances, and in accordance with a predetermined schedule. Storm [9] (1983: 101) describes the theory to support the above statement that laboratory staff must monitor that each equipment is in a safe condition and is used. The head of the workshop and toolman must make regular and preventive maintenance plans, so they can measure damage to frequently used equipment and equipment that is rarely used. Based on the above findings and exposure to the above theory, it can be concluded that before doing machine maintenance the head of the workshop must make a maintenance schedule in order to be able to measure the damage to the equipment in the workshop.

3. Implementation Rawat
3.4 Kontrol Visual

Visual control is a stabilization for students who do practice in workshops to work in accordance with operational standards so as to avoid work accidents. Osada (2000: 133) says about the visual control function as follows:

- Demonstration to help people prevent making mistakes.
- Be aware of danger.
- Indication of where the item must be placed.
- Equipment marker.
- Warning to be careful and how to operate.
- Preventive maintenance demonstration.
- Instructions.

The existence of visual control in the TBSM workshop of SMK Negeri 1 Bendo Magetan has a very important function for supporting students practices to avoid workplace accidents. In the TBSM workshop there was not much clear visual control in the form of K3 posters whose function was to make students aware of the importance of work safety. Based on the results of the existing research and theory, in conducting stabilization at the TBSM workshop of the SMK Negeri 1 Bendo Magetan, there has not been much stabilization with visual control such as attaching K3 posters which are very useful to remind students to work easily, safely and comfortably.

3.4.2 Teacher Competency Enhancement

SMK Negeri 1 Bendo is very concerned about the quality of teachers, especially productive teachers, so every year SMK 1 Bendo Magetan always sends productive teachers to attend training in accordance with their fields such as chassis motorbikes, motorcycle engines and electric motorbikes, especially Honda. The training was conducted at the branch office of PT. AHM namely in MPM Madiun and bring guest teachers from PT. INKA Madiun, and also in partner companies so that the competency standards that can be possessed by students increase thanks to the transfer of knowledge from the teacher. In the fourth concept, namely Rawat (Seiketsu) it is not just visual control but also in developing the quality of the teacher so that in teaching, the teacher can share knowledge that is very useful and can equip students before going into the industrial world, especially in the field of Motorcycle Engineering. Storm (1983: 161) explained that students might be less interested in some practical activities for the following reasons. (1) They are not sure that the activities / programs they undertake will be useful. (2) Their ability to succeed in the practical curriculum is uncertain. (3) Their business is not valued by motivation. (4) They are not implemented properly. (5) They do not receive adequate teacher assistance individually. Therefore the teacher must be able to overcome the various problems experienced by students relating to the lack of interest of students in carrying out practical
activities. The teacher must be able to be a motivator and example for students, so it is very appropriate if the school takes action to send teachers to the Honda training office, especially MPM Madiun and PT. INKA Madiun in order to become a teacher who understands competently a TBSM expertise.

![Figure 5: Teacher training activities from PT. INKA Madiun](image)

**Figure 5**: Teacher training activities from PT. INKA Madiun

**Source**: Personal documentation

3. 5 Implementation of Rajin

The practice is that students are always reminded of K3 when before and have been practiced in the TBSM workshop at SMK 1 Bendo Magetan. Because when reminded continuously students will get used to watching their own safety by using personal protective equipment when practical. Workshop cleanliness is the main one at SMK Negeri 1 Bendo Magetan. The cleanliness of the workshop is the responsibility of the teacher and students. The function of the teacher here is to direct students after the practice is responsible for the cleanliness of the workshop such as the equipment in the workshop. The teacher always directs and gives a warning if students are lazy or do not want to clean the machine that is used up. The teacher always directs to clean the workshop before going home so that the student's workshop process has become a habit where students are responsible for their work. Therefore the teacher must be able to overcome various problems experienced by students related to the habit of students who are lazy in cleaning machines after practice. The teacher must be able to get students to work safely and also maintain the cleanliness of the workshop. The teacher habituation process for students is when before the practice there is always a briefing about K3 so students work safely and always use personal protective equipment and after the teacher practices dividing students into groups the task is to clean the tool / machine, workshop and return the tool to the toolman. Habit is done every day so students get used to working safely, comfortably and cleanly.
4. Conclusion

Implementation of Ringkas di SMK Negeri 1 Bendo Magetan already good because the process of selecting unused items such as spare parts, the oil is collected and how to handle unused items is right. Implementation of Rapi already good because each tool/machine is neatly placed and given a code name and location code, as well as structuring the database arranged in such a way in a special database cabinet and practice material grouped according to its type. The implementation of Resik is good because the cleaning process of the workshop becomes the responsibility of students and teachers so that after completing the practice students are required to clean the workshop, maintenance of machinery and equipment in the workshop TBSM SMK Negeri 1 Bendo Magetan is the responsibility of the toolman and head of the workshop. There is a schedule that has been made by the head of the workshop. Implementation of Rawat not too good because in the TBSM workshop of SMK Negeri 1 Bendo Magetan, there is not too much visual control in the form of posters that function to remind students to work in accordance with K3. One of the activities at SMK Negeri 1 Bendo Magetan is to send teachers to take part in training at the MPM Madiun Honda branch office and invite guest teachers from PT. INKA Madiun so that teachers can improve their competence in accordance with their majors. Implementation of Rajin it’s good because the teacher always gives briefings before and after practice regarding work safety and works according to the SOP (Standar Operational Procedure) so students can get used to working safely and comfortably.

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