

CHAPTER I

INTRODUCTION

A. Background of the Study

Law of the Republic of Indonesia Number 20 of 2003, Article 3, provides that:

Education serves to develop skills and form the character and civilization of a dignified nation in the context of the intellectual life of the nation, aimed at developing students' potentials in order to be a man who is faithful and devoted to God Almighty, noble, healthy, knowledgeable, skilled, creative, independent, and become citizens of a democratic and accountable.

This law is expected to be the basis of change for the better. As the philosophical foundation, it is in order to make better respond to demand for reform, globalization and regional autonomy. First, the reform aims at establishing democracy and respecting for human rights. Both of these components could potentially have an effect on the overall structure of government, political, economic, social, cultural and consequently the system of national education included in the curriculum. Second, the implementation of the regional autonomy also implies a refinement and improvement of the curriculum. Third, the rapid global changes have implications for the field of education. Knowledge will quickly become obsolete, irrelevant, and loss of value.

Educational reform through improving the quality of education, including:

- 1) educational product that produced a percentage of students who successfully graduates and graduates can create jobs themselves, either by mimicking pre-existing or creating new ones,
- 2) the educational process, involving the management of class is relatively small, the use of appropriate teaching methods and environments conducive society, and
- 3) the control of education in educational resources that already exist.

Developments in science and technology has brought new changes in human life. These changes have also brought people into the era of global competition intensifies. Industry is growing rapidly because their productivity is supported modern equipment that works automatically. The tools used to create the automation system is a programmable logic controller (PLC), the reason is clear: to save time and production costs.

Programmable Logic Controller (PLC) is an electronic computer that can do a variety of control functions on the complex levels. PLC can be programmed, controlled and operated by an operator who is not experienced in the operation of the computer. PLC control program generally described in graphical language, for example: Language Ladder Diagram (LAD). PLC is a tool that is used to replace the function of sequential relay circuits for controlling machinery or equipment in industrial production (Effendi, 2007: 10).

In line with the development of science and technology, many large industrial production process control is performed automatically, commonly called automation. Automation widely applied in many production processes in various types of industries such as: petrochemical, paper, textiles, metals, automobile and food industries. Seeing this condition would not want us to prepare our students fit the needs of the industry, so that they are really ready to use when it plunged into the world of industry.

To be competitive, it needs to develop and improve the quality of human resources is done in a planned, focused, intensive, effective and efficient in the development process. Improving the quality of human resources, education holds a very important role, one of which is to improve the quality of vocational graduates.

The regulation of national education minister number 22 year 2006 about the content standards mentioned:

That vocational education (SMK) aims at improving intelligence, knowledge, personality, noble character, and skills of learners to live independently and follow further education in accordance with the vocational program. In order to work effectively and efficiently and develop expertise and skills, students must have a high stamina, expertise and master the fundamentals of science and technology, has a high work ethic and be able to communicate in accordance with the demands their work and has ability to develop themselves.

This indicates that the orientation of vocational schooling is to prepare students to enter the workforce. With the learning process with emphasis on

preparation for the child to master the technology completely through learning theory and practice in accordance with the choice of the learner. For the structure of the curriculum is oriented to achieve the objectives stated in the national education minister regulation number 22 of 2006 on the content standards. SMK curriculum contains compulsory subjects, vocational subjects, and local content development. Vocational learning hours allocated to three main aspects, namely the normative aspects, adaptive, and productive. These three aspects of learning to give effect to the understanding of the learner, the learning knowledge norm, material life applications, and learning about the skills that are used in life. From three aspects, the largest portion of the allocation given to the productive aspects of the consideration that learners should be able to cope with life after finishing school years.

Learning outcomes will be positive if the management is good learning. Management is expected to help the process of learning activities that take place smoothly. The process will be effective if all of the system also takes an effective and mutually supportive. Among others: objectives, appropriate materials, material master teachers, students actively engaged and involved, and learn the proper methods.

In this regard, the institution requires a learning management that can arrange it. With the aim of learning in schools can be run effectively and

efficiently. In this context it is all about learning management Programmable Logic Controller (PLC) is done in school.

Decision of the Director General Mandikdasmen number 251 / C / Kep / MN / 2008 on secondary vocational education spectrum of expertise, including that CMS Technology and Engineering group consisting of a variety of skills courses. One is a study skills program Electricity Engineering (Electrical Power Engineering Installation), with one material is material PLC (Programmable Logic Controller) that are taught in class three. SMK Muhammadiyah Cepu is one vocational school in the district that also teach the material Blora PLC.

Functions and national education goals above as if to emphasize that education is capital to build this country. The success of national development will be determined by our success in managing education. That's the challenge of entering the school in the millennium development goals, namely globalization era as the era of the quality or the quality of competition. Who is he qualified to be advanced and able to maintain its existence to exist.

The efforts of human resource development is absolutely necessary because it will be the main support of an independent national development and fair and a way out for the people of Indonesia from the multi-dimensional crisis, poverty, unemployment and economic inequality. Human resources are the main power in the moving train of life, so it really becomes a vehicle to be a better condition.

Based on the above phenomena, the researcher is encouraged to conduct a research entitled *Learning Management of Programmable Logic Controller (PLC) at SMK Muhammadiyah Cepu*.

B. Focus of Study

Based on the description on the background of the above problems, this research focuses on "How learning management of Programmable Logic Controller (PLC) in SMK Muhammadiyah Cepu?". It can be broken down into three (3) sub focuses, as follows.

1. How is PLC lesson plan at SMK Muhammadiyah Cepu?
2. How is the implementation of learning PLC at SMK Muhammadiyah Cepu?
3. How is the evaluation of learning PLC at SMK Muhammadiyah Cepu?

C. Goal of Study

In accordance with the formulation of the problems, the goal to be achieved in this study are as follows.

1. To describe the lesson plan of learning PLC at SMK Muhammadiyah Cepu.

2. To describe the implementation of learning PLC at SMK Muhammadiyah Cepu.
3. To describe the evaluation of PLC teaching at SMK Muhammadiyah Cepu.

D. Benefits of Research

The results of this study are expected useful for theoretical and practical benefits.

1. Theoretical Benefits

- a. Enrich the knowledge and theory development and study of management PLC learning.
- b. Resources and study materials for the reconstruction efforts in the direction of management PLC learning better.
- c. Implementative development of learning PLC.

2. Practical Benefits.

- a. Provide feedback to teachers, principals to be able to improve the management level of vocational learning PLC at Cepu City.
- b. Constructive input materials for PLC teachers in optimizing the implementation of learning to students.
- c. References and written references for conducting research relevant to the topic being studied.

E. Key terms

1. Management,

Management is an action that at the start of the data preparation, plan, organize, execute up to scrutiny and assessment.

2. Learning,

Learning is a process whereby a person is intentionally managed environment to allow him to participate in a particular behavior under specific conditions.

3. Management of learning,

Management of learning is a process of the interaction of students with teachers and learning resources in a learning environment.

4. Programmable Logic Controller (PLC),

Programmable Logic Controller (PLC) is a digital device that works in a sequential (respectively) based on the computerized system.