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# Proceedings

## **The 4th Annual INTERNATIONAL SEMINAR on Transformative Education and Educational Leadership**

Theme : Education Innovation in Indonesia Context Focused  
on Disruptive Technology of Industrial Revolution 4.0.

23 - 24 September 2019  
Garuda Plaza Hotel - Jln. Sisingamangaraja No. 18  
Medan, North Sumatra - Indonesia



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**Rundown of The 4<sup>th</sup> Annual Internatioanal Seminar on Transformative Education and Educational Leadership (AISTEEL) 2019**  
**Garuda Plaza Hotel, Medan, 23 – 24 September 2019**

**1st day (Monday, September 23, 2019)**

Time	Activities	PIC
15.00 – 20.00	Registration in Garuda Plaza Hotel	committee

**2nd day (Tuesday, September 24, 2019)**

Time	Activities	PIC/Moderator
07.00 – 08.30	Poster Sessions 1	Section Poster 1
08.30 - 09.00	<b>Opening Ceremony</b> 1. MC Speech 2. Traditional Welcome Dance 3. Indonesian National Anthem 4. Pray 5. Chairperson Report 6. <b>MoU signing between Unimed and PSU - Thailand</b> 7. Welcoming speech of Director of Postgraduate School 8. Welcoming speech and official opening of Rector of State University of Medan	MC
09.00 – 09.40	Plenary Lecture 1: <b>Prof. Dr. Syawal Gultom, M.Pd</b> (State University of Medan– Indonesia)	Moderator Section
09.40 – 10.25	Plenari Lecture 2 <b>Prof. W. L. Quint Oga-Baldwin</b> (Department of Education, Faculty of education and Integrated Art and Sciences, Waseda University - Japan)	Prof. Amrin Saragih, PhD (Panel)
10.30 – 11.15	Plenari Lecture 3 <b>Prof. Dr. Wu-Yuin Hwang</b> (Graduate Institute of Network Learning Technology National Central University, NCU - Taiwan)	
11.15 – 12.00	Plenari Lecture 4 <b>Prof. Dr. Ekkarin Sungtong</b> (Dean of Faculty of Education Prince of Songkla University - Thailand)	Mangara Simanjorang, PhD (Panel)
12.00 – 12.45	Plenari Lecture 5 <b>Asst. Prof. Patcharin Panjaburee, Ph.D.</b> (Mahidol University – Thailand)	
<b>12.45 – 13.30</b>	<b>Lunch Break/</b> Poster Sessions 2	Section Poster 2
<b>13.30 – 15.30</b>	<b>Parallel Session 1</b>	
15.30 – 16.00	Break/ Poster Sessions 3	Section Poster 3

15.50 – 18.00	<b>Parallel Session 2</b>	Moderator/Operator
18.00 – 19.00	Break/ Prayer	
19.00 – End	Banquet (Gala Dinner) - Announce of Best Presenter - Announce of Best Poster	Consumption Section

## **Proceedings of the 4<sup>th</sup> Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019)**

### **Preface**

The 4<sup>th</sup> Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019) was held in Garuda Plaza Hotel, Medan City-Indonesia on 23-24 September 2019. This seminar is organized by Postgraduate School, Universitas Negeri Medan and become a routine agenda at Postgraduate program of Unimed now.

The AISTEEL is realized this year with various presenters, lecturers, researchers and students from universities both in and out of Indonesia participating in, the seminar with theme “Education, Learning and Leadership Innovation.”

The plenary speakers coming from various provinces in Indonesia have been present topics covering multi disciplines. They have contributed many inspiring inputs on current trending educational research topics all over the world. The expectation is that all potential lecturers and students have shared their research findings for improving their teaching process and quality, and leadership.

The fourth AISTEEL presents a keynote speaker and 4 distinguished invited speakers from Indonesia, Japan, Taiwan, and Thailand. In addition, presenters come from various Government and Private Universities, Institutions, Academy, and Schools. Some of them are those who have sat and will sit in the oral defence examination.

There are 310 articles submitted to committee, some of which are presented orally in parallel sessions, and others are presented through posters. The articles have been reviewed by double blind reviewer and 172 of them were accepted for published by Atlantis Press indexed by International Indexation and 96 papers are published by digital library indexed by google scholar.

The Committees of AISTEEL invest great efforts in reviewing the papers submitted to the conference and organizing the sessions to enable the participants to gain maximum benefit.

Grateful thanks to all of members of The 4<sup>th</sup> Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019) for their outstanding contributions. Thanks also given to publisher for producing this volume.

The Editors

**Bornok Sinaga**  
**Rahmad Husein**  
**Juniastel Rajagukguk**

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# Design Development and Standard Operational Procedure for Training Model Management of 3 Diploma Mechanical Engineering University of Medan

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**Abstract-** This study aims to determine the design development and SOP Training Management Model in Student Diploma Mechanical Engineering, State University of Medan. The purpose of this study was to identify the aspects required for completion of training management model design, develop design models and develop SOPs training management training management in Mechanical Engineering Diploma students. This study used a qualitative approach with descriptive methods. The analyzed data is the result of interviews, direct observation and documentation with Ka. Prodi, head of workshop, Students and Staff Diploma Mechanical Engineering, State University of Medan relating to management training in Diploma in Mechanical Engineering. Vocational education has a very big role in the development of human resources. Human resources becomes very important for companies to be able to compete globally. Human resource development in order to work well is necessary education and training to improve the skills and productivity of labor in the work environment. Training is an activity designed through a learning process to improve the expertise and skills of a person in accordance expertise.

The results showed that the design and SOP management model student training at Diploma Mechanical Engineering, State University of Medan is still not effective because inherent in the subject of product design. Management training should be oriented to the organization, tasks and individuals so as to improve the quality of graduates.

**Keywords-** *training management, training management SOP design*

## I. INTRODUCTION

Entering the era of free trade, human resources is very important for companies to be able to compete globally. The role of the human resources that are outlined in the outlines of state policy, that for long-term development is the development of heavy titk economic development along with the development of human resources. In order for the development of human resources required to work well pelatihan education and to improve skills and labor productivity in the work environment. On the other hand, the development of a technology can not be separated from the potential of human resources that have skills in producing new products with creative and innovative. Population quality is a factor supporting the success of the development.

According to the Minister of Manpower 2016 period Hanif "the existence of formal education institutions, both non-formal organized by the government and private truth has not been able to provide the manpower needs in accordance with the needs of the world this kerja.Selama educational institutions and training institutions, especially the private sector, has not been able to adjust curriculum appropriate to the needs of the labor market. "Because of this, many jobs are unfilled due to the lack of link and match."

Vocational education is an education that prepares students to enter the workforce after completing their studies, development of vocational education is closely connected with the world of work are influenced by a variety of changes in technology, changes in work organization, and changes in competence. Job readiness of graduates of vocational education in the field of

mechanical engineering industry can be classified as low and the majority of graduates are less able to adjust to the changes / developments in science and technology which require skills training to improve their skills with the implementation of a competency-based learning model. Based on the background of the problems mentioned above, the focus of this research is "how the design development and student training SOP management model D3 Mechanical Engineering UNIMED?"

## II. LITERATURE REVIEW

### A. *Management Training*

Mathis (2002), training is a process of learning about a discourse of knowledge and skills intended for the implementation of learning outcomes in accordance with the demands. While Simamora (1995: 287) defines training as a series of activities designed to improve the skills, knowledge, experience or a change in the attitude of an individual.

According Sunyoto (2012: 137), "Training of labor is any attempt to improve the performance of workers in a particular occupation that is becoming the responsibilities or a job that is related to the job". According to Dessler (2013: 273), "Training is the process of teaching new or current employees the basic skills they need to perform Reviews their jobs". Defined training is the process of teaching new employees or who are currently working on basic skills they need to do their jobs. According Notoatmodjo (2009: 19), "Training is a process that will result in a change of behavior for employees or employee".

According Danim (2008: 43), "Training is a learning technique that involves individual observations on the work and determination of the feedback to improve performance or correct the error". Defining and understanding the training of experts described above, it can be concluded by the authors that the training is designed activities through a learning process to improve the expertise and skills of a person in accordance expertise.

According Notoatmodjo (2009: 74), the training has the primary objective to improve the productivity, effectiveness and efficiency of employees in doing any work. These trainings include:

- a. The implementation of new programs.
- b. The use of new tools.
- c. Training for employees in performing a task or a new job.
- d. The introduction of a process or a new work procedure.
- e. Training for new employees.

Training has the goal to improve psychomotor ability of employees to perform the job. However, note that the employee attitude training is just as important as

each organization has a different work culture. With this, employees will know the attitude expected by the organization concerned.

Based on the theories above, it can be concluded that the purpose of training is to increase employee productivity and create efficiencies and effectiveness in doing the job.

Noe (2010), suggests that the training design process model consists of seven steps:

- a. Step 1 is doing a needs assessment is to identify whether the training should be done or not. Needs assessment include: organizational analysis, the analysis and task analysis.
- b. Step 2 to ensure readiness readiness of participants is seen from the attitude and motivation of the participants of the training program, as well as the basic skills needed in order to master the training materials.
- c. 3 steps to create a training environment that is that the environment has the characteristics required for training. Including training environment is the goal of learning, meaningful material, practice, feedback, learning communities, modeling and implementation of training programs.
- d. 4 steps to make sure that participants apply the training materials on each other's work. These measures include awareness of the participants to always arrange themselves trying to advance their skills. This step also includes support from managers and colleagues.
- e. 5 steps to develop an evaluation plan. These steps include identifying training outcomes such as learning, behavior and skills. This step also choose the design of evaluation to determine pengaruh training on productivity. Develop an evaluation plan include: identification of learning outcomes, choose a design evaluation, and planning a cost-benefit analysis (cost-benefit).
- f. Step to 6 are choosing a training method based on objective and training environments. This step is the traditional method to-face and e-learning, web-based or with the use of CD / DVD and other computer-based devices.
- g. Step 7 is to evaluate the program and make any changes or revisions to the measures that are less precise. Evaluation is part of the process of advancing the program so that the learning, behavior changes and other training objectives can be achieved.

Thus, these measures are described as below:

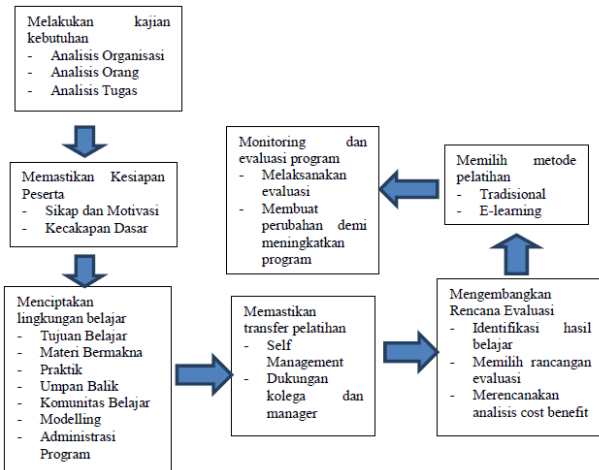


Fig I. Proses Design Training Source: Noe (2010)

Article 16 of the Company Law 12 of 2012, the vocational education is education that prepares students to become professionals with skills / high workability. Vocational education curriculum prepared jointly with the professional community and professional organizations are responsible for the quality of service in order to qualify profession professional competence.

According to Kemenristekdikti (2016: 59) approaches in vocational learning system carried out from the input (input), processes, outputs, and outcomes. The entire process is done with many activities in the implementation of vocational education. Which is the input is a student. At this stage of the process, carried out the implementation of vocational learning with several activities, namely: teaching and learning, curriculum, implementation of internships, and more. In the output stage is a graduation at a certain level. Stages outcome is the impact to be successful, future leaders and agents of change.

**B. Standard Operating Procedure**

SOP is one way that can be taken by an organization to improve performance. SOP is a standardized set of written instructions on the various process of the organization's activities, how and when it should be done, where and by whom carried (Permenpan & RB number 35 in 2012). Laksmi, et al (2008: 52) defines SOP as documents related to procedures performed in chronological order to complete a task that aims to obtain the most effective work of workers with the lowest cost. With simpler language Sailendra (2015: 11) describes the SOP as a guide used to ensure the organization's operations running smoothly.

According to Puspitasari, Rosmawati & Melfrina (2012: 30), "Standard Operating Procedure (SOP) is a standard / written guidelines that are used to encourage and mobilize a group to achieve organizational goals". According to Griffin (2011: 190), "Standard Operating Procedure is a standard plan that outlines the steps to be Followed in particular circumstances". it can be concluded that the Standard Operating Procedure (SOP) is a reference standard or guideline which contains

measures to encourage group work in doing the job and achieve organizational objectives.

**III. METHOD**

Based on the issues raised in this research emphasizes on the design and development issues SOP management model of competency-based training, This study is a descriptive study with qualitative approach. Descriptive qualitative research used in this type of research is intended to Obtain in-depth information about Design Development and Standard Operational Procedure for Training Model Management of 3 Diploma Mechanical Engineering University of Medan. Sampling or other sources of the data in this study is purposive sampling and for the sample size determined snowball, the data collection techniques with triangulation (combined), are qualitative analysis of data and research results emphasize the significance of generalization.

This study will be conducted at the State University of Medan. This study was conducted over three months, ie starting from the month of May 2019 until the month of August 2019.

**IV. RESULT AND DISCUSSION**

**A. Identification of the aspects required for completion of the design of the training management model D3 students of Mechanical Engineering UNIMED**

Based on interviews conducted to the Chairman of courses, laboratories and student head on integrated management model student training in subjects that have been formulated by the study program. The purpose of management training needs analysis are:

- a. To see the actual student competence in accordance with the applicable SKKNI
- b. To adjust existing training with industry needs
- c. Preparing students to become professionals who are able to compete in the world of work

The approach used in analyzing the needs of management training in Mechanical Engineering Study Program D3 Unimed is to look at three components of a needs analysis, ie organizational analysis, task analysis and individual analysis. Then the third aspect of the quality seen by Tovey quality theory, namely the quality of service access, acceptance, efficiency, effectiveness, relevance to the needs and equations described in the following table:

analysis of the Organization	Task analysis	Individual analysis
a. The training in Prodi D3 Mechanical Engineering Unimed accordance with the	a. owned by the instructor training is still very limited in number, there is even less likely.	a. Total students D3 Mechanical Engineering Unimed



<p>schedule set by the University, which is 16 times face to face.</p> <p>b. Training model used is guided inquiry.</p>	<p>b. Lecturers that administer refer to RPS, thus making the module or manual have not been realized.</p> <p>c. The trainer's role is as a counselor in training. Students will be grouped, then the students will get to work creating a draft design, other students worked to design the design results, and other students will present the results of their work. The results of this draft will then be submitted as a form of a report to the lecturer / instructor</p>	<p>an average of 15-20 students per year. It is adapted to the capacity of the classroom, as well as facilities and infrastructure practice.</p> <p>b. The number of instructors and students is still quite good</p>
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already applied in the implementation of training activities. Besides not stated explicitly, the perceived barriers resulting from the management pattern of training in Diploma courses 3 is still considered inadequate because it is integrated only in the course. It is insufficient to meet the competencies diinginkan by the world of work and business.

## V. CONCLUSION

Design Development and Management Model Training SOP at 3 Diploma in Mechanical Engineering students Unimed aims to:

- ❖ Identifying the aspects required for completion of the design of the training management model D3 students of Mechanical Engineering UNIMED. Based on research, it focuses on the aspects required organizational analysis, task analysis and individual analysis
- ❖ Develop design student training management model D3 Mechanical Engineering UNIMED by using the theory of Noe
- ❖ SOP implements develop student training management model D3 Mechanical Engineering UNIMED

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### A. Design Development Training Management Model

Based on interviews and observations made that the design models used training management diploma courses 3 Mechanical Engineering is through guided inquiry, where students work collaboratively, guided by faculty as an instructor in guiding, correct deficiencies and improve student understanding. Management training is conducted integrated learning. In accordance with the existing curriculum in Mechanical Engineering Study Program D3, management training courses accommodated in product design, engineering and machine tools. In this course students 80% were in the garage to create products according to market needs.

### B. Develop standard operating procedures that implement the Training Management Model

Management training is integrated in the learning, the standard operating procedures (SOP) SOP its integrated on learning. In connection with the implementation of the SOP, there are several obstacles encountered by them is a special SOP management training in writing yet, but implicitly

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