

IMPROVING STUDENTS' MOTIVATION OF MECHANICAL ENGINEERING STTR CEPU IN WRITING RESEARCH PAPERS USING TRAINING STRATEGY

Helmi Gunawan^{a*}

^aEnglish Lecturer of Mechanical Engineering STTR Cepu

Abstrak

The purpose of this study is (1) to illustrate whether training strategy in the research can increase students writing motivation and (2) to find out the advantages and disadvantages of training strategy in the research for students of Mechanical Engineering STTR Cepu. This School Action Research was carried out in 2 cycles. Each cycle 1 includes 2 meetings, while cycle 2 is 1 meeting. The data used in this study is qualitative data. Qualitative data is taken from observations, questions and answers, questionnaires, and product results. The data has been analyzed using the Constant Comparative Method.

The findings of the study using a training strategy are: (1) increasing students writing motivation, including: a) curiosity, b) students' effort, c) students' perseverance, and d) students' experience. The increase can also be shown by the average number of participants from each meeting increasing and the product results of students also increasing. There are 12 research titles and there are 2 research proposals made by participants.

Based on the results of the study, it can be concluded that the training in the preparation of research can increase students' motivation to write.

Key Word: Motivation, Writing, Training Strategy

1. Introduction

In principle, by conducting research, the students of university are hoped to develop the ability to write research for education, as well as to prepare as the requirements of graduation in university.

The students of 1st semester of Mechanical Engineering STTR Cepu period year of 2018-2019 there are 42 Students. So that the activities of writing research are deemed very necessary to be conveyed to students. Based on the results of a questionnaire that the author has spread through *Google form* shows that the students have problems in writing especially in writing research.

The results of the questionnaire showed that the motivation of the students to write research was very strong. But also the students face obstacles in compiling research caused by 2 factors: 1) the students' internal factors regarding the students' understanding in the preparation of research are low, 2) external factors that cause the students' motivation in the research is very weak and the lack of power support the environment as well as understanding the importance of increasing credit and career professionalism.

The results of the questionnaire are distributed by the author to students related to the problem at hand. There are 4 causes of students' internal factors including: 1) curiosity, 2) students' effort, 3) students' perseverance, and 4) students' experience Santrock (2001; 302)

Review of Literature

Goldstein and Gressner (1988) in Kamil (2010: 6) define training as a systematic effort to master the skills, regulations, concepts, or ways of behaving that have an impact on improving performance. Furthermore, according to Deaden (1984) in Kamil (2010: 7) which states that

training basically covers the teaching and learning process and exercises aiming to achieve a certain level of competence or work efficiency. As a result of the training, participants are expected to be able to respond appropriately and according to certain situations.

A training is generally designed to realize the goals, both the objectives of the organization conducting the training and the objectives of the participants who take the training individually.

Moekijat (1992: 2) states that the purpose of training is to: 1) Develop skills, so that work can be completed faster and more effectively; 2) Develop knowledge, so that work can be done rationally; and 3) Developing attitudes, so that the ability to collaborate with fellow students and motivate each other.

Method

This research is a type of Action Research or action research. Kemmis in McNiff (1988: 2) defines action research as,

“The action research is a form of self-reflective inquire form undertaken by participants (students, students, or principals, for example) in some certain social (include education) for increasing the justice and rationality from (a) the social practice activity or their education (b) their understanding about the practical activities on education practice, (c) This situation probably do the practical activity. Shortly, the action research is how the group of students can organize the learning practice, and learn from their experiment itself”.

Action research is a reflective form of self-evaluation carried out by participants (students, or principals, for example) in certain social settings (including education) to improve the fairness and rationality of (a) their social or educational practice activities (b) their understanding regarding practical activities in educational practice, (c) This situation may carry out practical activities. In short, action research is how groups of students can organize learning practices, and learn from their own experiments.

Result and Discussions

1. Finding

There were 4 main activities at the time before the research began, among others: observation, distributing questionnaires, questions and answers and preparation of training materials for writing scientific papers for students of 1st semester of Mechanical Engineering STTR Cepu period year of 2018-2019.

Based on the results of the questionnaire, the researcher concluded that the students needed guidance and assistance in the preparation of scientific papers, especially classroom action research (CAR) based on internal and external factors.

Internal factors are caused by 4 causes of students' internal factors, including: 1) curiosity, 2) students' effort, 3) students' perseverance, and 4) students experience.

Findings before the research can be seen in Table 4.1.

Indicator of The Study		Description
B Students' Internal Factors	1. curiosity	• <i>Rasa ingin tahu sangat tinggi</i> • <i>Guru saling berintraksi untuk menyampaikan permasalahan dalam menulis.</i>
	2. Students' effort	• <i>Guru berusaha memahami struktur dan penulisan karya tulis ilmiah</i> • <i>Guru hanya membaca, namun belum ada usaha yang tinggi untuk menulis</i>
	3. Students' perseverance	• <i>Guru merasa bahwa menyusun karya tulis ilmiah itu susah</i> • <i>Guru memiliki kemauan yang kuat untuk bisa menulis karya tulis ilmiah.</i>
	4. Students' experience	• <i>Rasa percaya diri untuk bisa menyusun karya tulis</i>

		<i>ilmiah masih rendah</i> • <i>Guru tidak melibatkan diri dalam kegiatan penulisan karya tulis ilmiah</i>
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2. Discussion

The purpose of this study is to find out that training strategy in the research paper can improve the motivation of writing students of 1st semester of Mechanical Engineering STTR Cepu period year of 2018-2019 and look for advantages and disadvantages of training in scientific writing research proposal in improving students writing skills at STTR Cepu. After carrying out 2 cycles, the results of the activity showed that there was an increase in students' motivation to write at Mechanical Engineering of STTR Cepu and the advantages and disadvantages of the training activities.

Based on the observations, it can be seen that (1) Increased motivation for students writing research increases. Although there are some students who have not shown improvement. (2) Strengths and weaknesses of training in the preparation of research in improving students' writing skills at the Mechanical Engineering of STTR Cepu. For a more detailed explanation as follows:

1) Increased motivation for writing research of students

The results of observations and field note, the students or trainee shows a good increase in the motivation of the students' scientific writing. First, at the first meeting, understanding the structure and technical writing of research is still low. They still don't really know and understand the structure of writing class action research titles. This is caused by not being familiar with classroom action research. The students enjoy the training process by showing enthusiasm in raising questions and feedback. At the second meeting, there were still some participants who did not pay attention to the explanation from the speaker compared to the first meeting, the number of participants who did not pay attention to the explanation from the speaker decreased.

At the second meeting, there were 9 participants who filled out a questionnaire to submit a research title. This also shows an increase in students writing. Curiosity and students' efforts to compose research increases. The following are the results of the questionnaire submission from the students or trainee:

Table 4. 2. Submitting Students' Research Title Result

Timestamp	Name	Subject	Research Title
9/21/2019 13:16:48	Hendri Destrianto	Mechanical Engineering	PENGARUH PEMANFAATAN ZEOLIT PELET BASA-FISIK DENGAN

			<i>NORMALITAS TINGGI TERHADAP PRESTASI MESIN DIESEL 4-LANGKAH</i>				<i>BENSIN 4 LANGKAH</i>
9/21/2019 13:43:56	Prisco Hizkia SBAW	Mechanical Engineering	<i>METALURGI FISIK UJI TARIK, UJI JOMINY, UJI IMPAK, UJI KEKERASAN</i>	9/22/2019 10:26:35	Raditya Widya Putra	Mechanical Engineering	<i>Pengaruh Pemanfaatan Zeolit Pelet Basa-Fisik Dengan Normalitas Tinggi Terhadap Prestasi Mesin Diesel 4- Langkah</i>
9/21/2019 13:53:14	Aprianto Wahyu Prayogo	Mechanical Engineering	<i>Pengaruh Orkes Dangdut Terhadap Perilaku Anak- Anak di Zaman Sekarang</i>	9/22/2019 15:30:31	AHMAD FERNAN DA	Mechanical Engineering	<i>Pengaruh Naiknya Pembayaran Iuran Bpjs Kesehatan Terhadap Pelayanan Kesehatan Dan Beban Ekonomi Masyarakat Indonesia</i>
9/21/2019 15:32:13	MOCH. ROBI'UL LINTAN G SAKTI	Mechanical Engineering	<i>PEMAHAMAN NARKOBA</i>	9/22/2019 15:30:31	MUHAM MAD ARI PUTRA	Mechanical Engineering	<i>Pengaruh Dampak Virus Corona (Covid- 19) Bagi Perekonomian Indonesia</i>
9/21/2019 19:42:49	Muhamad Azjis	Mechanical Engineering	<i>Kaji Eksperimental Efektivitas Cooling Tower Mini Pada Komputer</i>	9/22/2019 15:30:36	NOVIND A IRKI DHICAH YA	Mechanical Engineering	<i>PENGARUH DAMPAK VIRUS CORONA (COVID-19) BAGI PENDIDIKAN INDONESIA</i>
9/21/2019 19:54:45	Muhamad Leno Purwanto Firdauza	Mechanical Engineering	<i><u>Pengaruh penggunaan Ice Storage berbahan baku air dengan campuran batu karang terhadap Performance mesin AC di ruangan Smoking Area</u></i>	9/22/2019 15:40:56	PRIMA REXSA DWI SANJAY A	Mechanical Engineering	<i>Pengaruh Jenis Bahan Bakar Terhadap Fuel Consumption (Fc) Pada Kendaraan Supra X 125</i>
9/22/2019 5:32:13	Prayuda Saputra	Mechanical Engineering	<i>ANALISA VARIASI HAMBATAN DAN TEGANGAN LISTRIK PADA KOIL TERHADAP UNJUK KERJAMOTOR</i>				

The students' curiosity about writing classroom action research increased. This can be seen from the efforts to understand the writing of students' classroom action research through training activities. Second, students' participation in the preparation of research also increased. At the second meeting, the students were able to submit a

title for research. Third, students face difficulties in organizing time to compile research. Most students have not been able to complete the questionnaire submission due to the busyness of each students. Fourth, the method used by researchers is in accordance with the average age of the students, by arranging activities that are not monotonous. This increase can be known by comparing the average of the results of the questionnaire at the time of initial observation with the first cycle.

These things indicate the experience and perseverance of students increases based on the results of observations.

Table 4.3 Students / Participant Questionnaire Results

Indicator	Average of Pre-Observation				Average of Cycle 1 and Cycle 2 Observation			
	SS	S	TS	STS	SS	S	TS	STS
Internal Students Factors								
1. Students' curiosity	33%	67%	0	0	16%	84%	0	0
2. Students' effort	5%	83%	12%	0	0	100%	0	0
3. Students' perseverance	16%	78%	6%	0	8%	76%	16%	0
4. Students' experience	33%	67%	0	0	12%	80%	8%	0

Based on the results of the questionnaire in table 4.3 shows that the level of motivation of students in the preparation of research paper increases.

2) Strengths and weaknesses of training in the preparation of research

Advantages

In accordance with the results of the field notes, questionnaires, and questions and answers, there are several points of strength of the training in the preparation of research for students. These advantages include:

First, at the first meeting, through this training activity it was able to increase students understanding related to class action research explanations. At the second meeting, the students' understanding related to the structure and technical writing of research also showed improvement. There are 9 titles that have been submitted by the students through Google Form. Second, the enthusiasm of the trainees increased. In accordance with the results of the recapitulation the attendance of participants increased from the first meeting and the second meeting. Third, there is a strong push from the principal for students in increasing the

motivation to compile research. Fourth, the growth of scientific culture by holding training activities conducted at Mechanical Engineering of STTR Cepu.

Weakness

Based on the results of field notes, questionnaires, and questions and answers, there are several points of weakness of the training in the preparation of research for students. These weaknesses include:

First, at the first meeting, through this training activity has not been able to improve the understanding of all students related to the explanation of classroom action research. At the second meeting, the students' understanding related to the structure and technical writing of research was not too high. Only 9 titles from 24 trainees at the first meeting that have been submitted by the students through google form. Second, writing is still not a scientific culture for students. Third, although there is strong encouragement from the principal, there are some students who do not have a strong motivation in the preparation of research. Fourth, the limited time for training which makes the training process of preparing research less.

CONCLUSION

Based on the results of the study, the researchers concluded as follows:

1. The students are able to increase the motivation to write scientific papers by attending training. The result is there are 12 research titles and 2 proposals resulting from training activities in writing scientific papers. The enthusiasm of the trainees increased. In accordance with the results of the recapitulation the attendance of participants increased from the first meeting and the second meeting. Third, there is a strong push from the principal for students in increasing the motivation to compile scientific papers. Fourth, the growth of scientific culture by holding training activities carried out at the Mechanical Engineering of STTR Cepu. In terms of quantity the participants have been fulfilled but their participation needs to be increased. This is possible because there has been a lot of similar training done but there is no adequate feedback so that there are participants who feel the training is less effective. The advantages include, among others, consultation can be done on line 24 hours so that they can improve their work quickly. Another advantage is the trained participants, both in exploring ideas or the use of scientific and systematic language that is getting better in preparing scientific work.
2. Weaknesses of this training activity can be seen by the results of the field notes, questionnaires, and question and answer, there are several points of weakness of the training in the preparation of scientific papers for students. These weaknesses include: First, at the first meeting, through this training activity has not been

able to increase the understanding of all students related to the explanation of classroom action research. At the second meeting, the students' understanding related to the structure and technical writing of scientific papers was not too high. Only 2 CAR proposals from 26 trainees at the third meeting in cycle 2 were submitted by the students through Google form. Second, writing is still not a scientific culture for students. Third, although there is strong encouragement from the principal, there are some students who do not have a strong motivation in the preparation of scientific papers. Fourth, the limited time for training which makes the training process of preparing scientific papers less.

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