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Training on the use of statistical software to improve teacher class action research performance at the Kerinci Citra Kasih Foundation

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Abstract

This study aims to increase teacher professionalism through the provision of Classroom Action Research (CAR) materials and the preparation of CAR proposals and reports through the use of statistical software. The method of debriefing is through lectures and demonstrations. The results showed that the service activities carried out by the team using the lecture and demonstration methods have been able to improve the understanding of teachers, CAR report writing is expected as one of the professional development efforts and at the same time assist teachers in achieving the credit scores needed for a promotion, and the use of the statistics software have been shown to increase

the productivity of teachers. The recommendation for which the data is given is that the implementation of service activities regarding CAR can achieve the expected goals, it is necessary to have field observations regarding the needs of the teachers who are at the location of service, and similar service activities are expected to be carried out in the following years in other locations to bridge between the universities higher education institutions and schools to participate in improving the quality of education in Indonesia, and teachers can share the knowledge that has been obtained to become a debriefing material for educational institutions in the vicinity.

Keywords: Statistical Analysis, Research Performance

JEL Classification: C15, P47

1. Introduction

As a professional educator, teachers are required to develop themselves in a sustainable manner in accordance with the mandate of Law Number 14 of 2005 concerning Teachers and Lecturers. One form of self-development is to conduct research and write reports on the results of the research. In essence, the teacher is a researcher. A teacher, directly or indirectly, is devoted to research both in the classroom and outside the classroom, in school or outside of school. In the daily life of a teacher struggling with work that involves students in the classroom. As a reflection of what has been done in the classroom, a teacher conducts research called Classroom Action Research (CAR).

The policy contained in the Ministry of National Education (2005) concerning National Education Standards is carried out as a reference for developing various programs, including the teacher certification program. The existence of this policy raises the dignity of the teaching profession for the better because the government provides professional allowances for teachers. The provision of allowances as referred to in Government Regulation Number 41 of 2009, concerning Professional Allowances for Teachers and Lecturers concerning allowances for the profession of teachers and lecturers, is carried out as a reward for increasing teacher professionalism. With the professional allowance, teachers are expected to be able to increase interest and motivation to continue to develop competence and professional performance in carrying out their duties at school. Thus, increasing teacher professionalism will contribute to improving the quality of education, both in terms of process and results^[1]. One of the teacher's scientific papers comes from the results of Classroom Action Research (CAR) which is raised from the problems he faces in carrying out classroom learning through the application of various methods, approaches, strategies and learning models. Therefore, mastery of various methods, approaches, strategies and learning models has an inseparable relationship with teacher professional development activities. The ability of teachers to research will improve performance in their profession as educators. Several criteria that need to be used as a teacher's guide include: (1) the main task of the teacher is to teach, do not let research activities interfere with this main task, (2) the method of collecting data is chosen in an efficient and relevant way so that it does not take up much time, (3) has mastered the steps of CAR so as to be able to formulate

working hypotheses and learning strategies that will be developed according to class conditions with confidence, (4) research problems in accordance with the teacher's field of work [2].

Data analysis techniques in Classroom Action Research (CAR) are still considered difficult for most teachers, both in Elementary, Junior High School, and Senior High School. Difficulties in analyzing CAR data can be due to the fact that teachers are not used to doing data analysis. This is the basic foundation for the importance of CAR data analysis training for teachers to be able to carry out and get used to doing CAR data analysis [3].

The Kerinci Citra Kasih Foundation is an institution that oversees Kindergarten, Elementary, Middle and High School Taruna Andalan Plus. This foundation is located at Town Site 1 Complex PT. RAPP, Pangkalan Kerinci Tim., Pangkalan Kerinci District, Pelalawan Regency, Riau 28654.

The problems faced by Kerinci Citra Kasih Foundation teachers in Pelalawan Regency related to Classroom Action Research (CAR) are the reluctance of teachers to carry out CAR, the implementation of CAR has not met expectations, and teachers experience problems in writing CAR reports that have been carried out. If this is allowed to continue, it will result in a decrease in the research performance of teachers.

The use of statistical software will really help teachers to do CAR, where statistical software will be very helpful and speed up the data processing process, so that research can be completed properly. With the right training method, it is believed that teachers will be able to understand and implement it well.

Based on this description, it is encouraging to help facilitate efforts to increase teacher professionalism through the provision of CAR materials and the preparation of CAR proposals and reports. And this research report can be useful for developing the research potential of teachers.

2. Theoretical review

Classroom Action Research (CAR) is research conducted by teachers in their own class through self-reflection with the aim of improving their performance so that student learning outcomes increase. CAR has several stages, namely a) planning improvements, b) implementing actions, c) observing, and d) reflecting. The observation stage (observation) produces data that needs to be analyzed, interpreted, and concluded to improve learning performance. At this stage, data analysis is needed as a scientific tool for drawing conclusions [3].

Classroom Action Research (CAR) is defined as research conducted by teachers in the classroom through self-reflection aimed at improving teacher performance so that student learning outcomes increase. There are four phases in the CAR, namely the planning phase, the action phase, the observation phase, and the reflection phase [4].

Analysis and interpretation of the data that has been collected in the implementation of the CAR can be carried out throughout the research process. This is because CAR is dialectical research, which consists of planning, action accompanied by data collection, followed by data analysis and interpretation, new planning, data collection and action, data analysis and interpretation again, and so on. However, keep in mind that although data analysis and data interpretation can be carried out in the process of

implementing the CAR, it is necessary to avoid too early data analysis and interpretation. This is done to avoid making hasty conclusions. Data analysis in the implementation of CAR is very different from data analysis in other types of research. Data analysis in research that uses a quantitative approach uses a statistical approach, difference test, correlation test, etc. Meanwhile, the CAR with a qualitative approach uses a qualitative narrative analysis or in other words describes or explains clearly the findings obtained in the implementation of the action.

Data analysis techniques in CAR can go through the following stages:

1. Identify the theme. where data collected through an inductive process can be identified into certain themes. Drawing conclusions based on special circumstances is carried out to be treated in general.
2. Code the results of surveys, interviews, and questionnaires. This coding can be done to classify the activities of planning, implementation, evaluation, and so on.
3. Ask key questions. Key questions help to systematize data that can form meaningful information [5].
4. Concept map preparation. Visually map the factors related to the subject, data, learning process, problems, and so on.
5. Analysis of the factors that precede and follow.
6. Presentation of findings in the form of tables, graphs, maps, charts, pictures, and others.
7. Revealing what has not been discovered.

3. Methodology

Debriefing method

There are two methods used in the provision of knowledge, namely:

1. **Lecture**
Lectures are used by the service team to convey CAR principles, CAR procedures, CAR implementation, and CAR report writing procedures. Lectures are supported by the use of laptops and LCDs to show service materials for a limited time.
2. **Demonstration**
Demonstrations are used by the service team with the hope that participants can start practicing problem formulation in the learning process that can be solved through CAR, drafting CAR proposals, to writing CAR reports. To optimize the implementation of the service, assistance is provided by the service team, namely in the preparation of the CAR proposal draft and the writing of the CAR report.

Debriefing steps

In carrying out the provision of knowledge, you can follow the following steps:

1. Lecture on CAR (principles, procedures, and implementation).
2. Lecture on CAR report writing.
3. Ask and answer various obstacles faced by teachers.
4. Practice in the form of composing the CAR title, the background of the problem, problem formulation, objectives, and the form of action to be taken.

Supporting and inhibiting factors debriefing

In providing knowledge, there are several things that support

or hinder this activity, including:

1. Supporting Factors: The support of the principal of the Kerinci Citra Kasih Foundation in Pelalawan Regency who welcomed the implementation of the dedication and enthusiasm of the teachers to participate in the provision of knowledge.
2. Inhibiting Factor: Limited time for the implementation of service.

4. Analysis results and discussion

Activity implementation results

This service activity raised the topic of Training in the Use of Statistical Software in Improving Classroom Action Research Performance for Kindergarten, Elementary, Middle, and High School Teachers Taruna Andalan Plus at the Kerinci Citra Kasih Foundation in Pelalawan Regency carried out with a face-to-face event held on Sunday, March 20, 2022, this meeting was attended by 20 teachers.

The agenda for service activities in the Kindergarten, Elementary, Middle, and High School Taruna Andalan Plus Foundation at the Kerinci Citra Kasih Foundation in Pelalawan Regency was carried out with material presentations with the resource persons being a service team totaling 7 (seven) people. Submission of materials from the service team, including CAR material (principles, procedures, and implementation) and CAR report writing materials. The presentation of the material was then followed by a question-and-answer session regarding the various obstacles faced by teachers in CAR, including in writing their reports. Service activities are then followed by practice in the form of compiling the CAR title, problem background, problem formulation, objectives, and forms of action to be taken.

The service activity was continued by giving individual assignments to teachers for Kindergarten, Elementary, Junior High, and High School Taruna Andalan Plus at the Kerinci Citra Kasih Foundation in Pelalawan Regency to make a CAR proposal or write a CAR report within 2 (two) weeks. Individual assignments for teachers are collected collectively through the principal and given to the service team to get input for improvement. Assistance is carried out by the service team in the hope that more teachers of Kindergarten, Elementary, Middle, and High School Teachers Taruna Andalan Plus at the Kerinci Citra Kasih Foundation in Pelalawan Regency will implement CAR and write reports at the same time.

Discussion of the results of the implementation of community service activities, the results of the implementation of service activities as a whole can be seen based on the following components:

1. Achievement of the target number of training participants
The target participants for the training or target audience are 30 Kindergarten, Elementary, Middle, and High School Teachers Taruna Andalan Plus at the Kerinci Citra Kasih Foundation in Pelalawan Regency. In its implementation, this activity was attended by 20 teachers because there were several teachers who had activities in their respective schools. Thus, the achievement of the target number of training participants is 61.1% which can be considered quite well.
2. Achievement of training objectives
The achievement of the training objectives can be

judged to be less good. Within 2 (two) weeks as many as 9 teachers (45%) have tried to prepare a CAR proposal. The obstacles faced by teachers in carrying out individual assignments are busyness at school and the lack of writing skills; therefore, it is necessary to encourage a writing culture. In this service activity, the service team tries to provide assistance to Kindergarten, Elementary, Middle, and High School Teachers at the Kerinci Citra Kasih Foundation in Pelalawan Regency who is interested in implementing CAR and practice writing reports.

3. Achievement of the planned material targets
The achievement of the material targets that have been planned for this service activity can be considered good (80%). All materials that have been planned can be delivered to participants, although due to time constraints there are some materials that are only presented in outline.
4. The ability of participants in mastering the material
The ability of participants seen from the mastery of the material can be assessed as good (80%). This can be seen from the teacher's ability in practical activities in the form of preparing the CAR title, problem background, problem formulation, objectives, and forms of action to be taken, in addition to enthusiasm in face-to-face events by asking several questions. Overall, the service activities for Kindergarten, Elementary, Junior High School, and Senior High School Taruna Andalan Plus teachers at the Kerinci Citra Kasih Foundation in Pelalawan Regency measured from the four components above can be considered quite well. This is thanks to the support of many parties, especially the leadership of the Kerinci Citra Kasih Foundation in Pelalawan Regency. The use of statistical software is very helpful in the data processing.

5. Conclusions and recommendations

Based on the results of the analysis, the conclusions of this research and service are:

1. The service activities carried out by the team using lecture and demonstration methods have been able to increase the understanding of Kindergarten, Elementary, Middle, and High School Teachers at the Kerinci Citra Kasih Foundation in Pelalawan Regency about CAR, and it is hoped that teachers can write reports at the same time.
2. The writing of the CAR report is expected as one of the professional development efforts and at the same time assist teachers in achieving the credit scores needed for promotion.
3. The use of statistical software has been shown to increase the productivity of teachers.

Based on the conclusion, the recommendations that can be given are:

1. In order for the implementation of service activities on CAR to achieve the expected targets, it is necessary to conduct field observations regarding the needs of teachers at the Kerinci Citra Kasih Foundation in Pelalawan Regency which is the location of the service.
2. It is hoped that similar service activities can be carried out in the following years in other locations to bridge between universities and schools to participate in improving the quality of education in Indonesia.

3. Teachers can share the knowledge that has been obtained to be material for educational institutions around them.
4. Teachers can examine the behavior of students for better character development of Generation Z ^[6-8] through statistical data patterns.

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