

A RESEARCH BASED TRAINING OF SCIENTIFIC PAPER FOR TEACHERS

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Abstrak

This research starts from the results of a preliminary study that the teachers as professionals having roles and functions in achieving the vision of the national education. One form of professional development of teachers is to write a scientific paper. The purpose of this research is producing a training module on writing scientific papers for teachers which valid, practical and effective. This research used Research and Development (R&D). The development model used was TIER (Training Intervention Effectiveness Research). The subjects in this study were eight teachers in the SD Negeri 1 Rejosari and nine teachers in SD Negeri 3 Rejosari. The results of this research concluded that the teachers were able to write a scientific paper and publish it. The conclusion in this study showed the module was valid, practical and effective.

Keywords: Scientific Papers, Teacher, Module

INTRODUCTION

Based on observations conducted by researchers at SD Negeri 1 and 3 Rejosari of East Ogan Komering Ulu on February 20, 2018. The number of teachers in SD Negeri 1 Rejosari were eight teachers, while in SD Negeri 3 Rejosari were nine teachers. The observation showed that teachers only know that writing must be made to get credit score as a requirement of promotion and class. From the interview on February 20, 2018 with one of the teachers at SD Negeri 3 Rejosari Ibu Miswantini "in general, teachers still rarely carry out the writing of scientific papers as the fulfillment of professional development activities". Mr. Sutomo, the teacher of SD Negeri 1 Rejosari "the average teacher who has written a scientific paper to carry out the activity while still studying in college". Based on interview on February 20, 2018 with Head of SD Negeri 3 Rejosari Mr. Saimin "training of scientific writing should be held in order to develop proficiency of a teacher for the future".

Based on the results of interviews at SD Negeri 1 and 3 Rejosari dated February 20, 2018, the inhibiting factors of teachers perform writing scientific papers include first, low interest in reading and interest in writing. Writing activities cannot be separated from reading activities. During this time the teacher is more preoccupied with teaching activities in the class so the obligation to read for his development becomes unfulfilled. Secondly, the limited availability of reading material can be written. Third, lack of confidence and lack of experience to write. Fourth, the teacher's uncertainty over the provisions of science to be able to write skillfully. Fifth, low motivation to write scientific papers for teachers.

If it is observed that most of the activities of teachers in SD Negeri 1 and 3 Rejosari are more oriented towards the mission of education and teaching in the classroom while scientific vision and mission in the form of scientific writing and

publication are often neglected. From these facts, the writing and publication of scientific papers among teachers need to be considered. Teachers as teachers are required to have pedagogic competence so as to be able to transform science to the students. In the process of education, teachers are not only carrying out the transfer of knowledge but also carrying out the function of instilling values and building the character of learners in a sustainable way. Thus the role of teachers to be very strategic in preparing qualified human resources. The teacher is a profession so that a teacher must be able to perform his duties professionally. A person is considered professional when trained and well educated, and has experience in his field (Kunandar 2009: 48).

The development of teacher professionalism is based on the needs of educational institutions, teacher groups, and individual teachers themselves. According to Sa'ud (2009) that teacher development is intended to stimulate, maintain, and improve the quality of staff in solving organizational problems. Law No. 14 of 2005 on Teachers and Lecturers, article 2, paragraph 1 explains that teachers have a position as professionals. Professionals are jobs that require further education in science and learning technologies used as basic tools and then implemented in a variety of useful activities (Trianto, 2010: 2).

Sukarno (2017) in the results of his research states that the development of teacher profession is to write scientific papers. However, the reality on the ground shows that most teachers have not been able to produce and conduct scientific publications. Obstacles experienced by elementary school teachers in Karanganyar Subdistrict in Sukarno's research (2017) in writing scientific papers include: (a) low writing motivation, (b) lack of spare time, (c) lack of understanding of writing techniques, (d) difficulties (h) lack of reference books, (g) rampant writing services, (h) lack of functioning of teacher working group (KKG) in improving the competence of writing scientific papers; (i) lack of support from school.

Thus, the professional refers to two things: the person performing the work and the appearance or performance of the person in performing his duties or work (Daryanto, 2013). The quality of teacher professionalism is demonstrated by five attitudes, among others: 1) the desire to always display behavior approaching the ideal standard: 2) to improve and maintain the professional image; 3) the desire to constantly pursue professional development opportunities that can improve and improve the quality of knowledge and skills; 4) pursue quality and ideals in the profession; 5) have pride in his profession (Sagala, 2009).

Regulation of the Minister of Administrative Reform and Bureaucracy Reform (Permen PAN and RB) no. 16 Year 2009 on Teacher Functional Position and Credit Score determined that one of the activities of professional development is a scientific publication. According to Daryanto (2013) through the credit score system is expected to be awarded more fairly and more professionally to the rank of teacher which is profession recognition and then will increase the level of prosperity.

According to Arikunto, Suhardjono and Supardi (2009) through the credit score system, it is expected to be rewarded more fairly and more professionally towards the rank of teacher which is profession recognition and then will increase the level of prosperity. The government encourages elementary education teachers to actively write scientific papers to disseminate ideas, ideas, and research results. Director of Basic Education Teacher Development Anas M. Adam (Kompas, November 10, 2017) said that

teachers have the main task of educating, teaching, guiding, directing, training, assessing, and evaluating learners. In order for teachers to perform their duties properly, the teacher must increase the competence for the development of his profession as well as strengthening character education. Development of teacher profession can be done through various ways. One of them by practicing the ability to write scientific papers.

Professional teachers not only perform functions related to pedagogical competence (especially planning, performing, assessing and administering learning) but also functions related to personal, social, and professional competencies, among others marked by self-improvement through the writing of scientific papers. Writing can also be said writing that addresses certain problems based on systematic and directed observations. Some say the paper as the idea of someone who poured in the form of writing, Kusmana (2010: 2). Therefore, every teacher should be willing, able, and usually doing scientific writing work activities. Maryadi (2002) explained that scientific papers should be systematic, logical and meticulous in all aspects including the language aspect. The criteria of scientific work must be objective, rational and emotionally based on facts and arranged in a systematic and coherent manner.

Scientific writings of teachers should have special requirements, namely APIK (Original, Need, Scientific, and Consistent). Arikunto (2007: 83) describes: 1) Original, the resulting papers should be the original product of the teacher and in accordance with the subjects being taught and the place of work; 2) Need, the paper produced by the teacher must be perceived directly by the teacher in improving the quality of learning; 3) Scientific, the resulting papers must be scientifically, systematically, coherently and meet the requirements of the writing of scientific papers; and 4) Consistent, the resulting scientific papers should demonstrate the full and total consistency of thought, whether as a whole or the relationship between the chapters of the papers presented.

Writing ability for teachers becomes the demands of his profession. For the development of his career teachers must meet the requirements of writing scientific papers. This requirement is often a barrier to the increase in rank for teachers considering the low ability and interest in writing among them. Saroni (2012: 25) mentions the more papers produced, the better the content of the writing and it shows the higher the intellectual level of a teacher, which in this way can also be a reflection of the quality of education in Indonesia. Through learning and training writing scientific papers for teachers is expected to solve problems that researchers described above. The purpose of this research is to create a training module of writing scientific papers for teachers that are valid, practical and effective.

RESEARCH DESIGN

This research is research development (Research and development / R & D). Sukmadinata (2011: 164) states that research and development (R & D) is a research approach to produce a new product or refine an existing product. The resulting product can be hardware or software. Sugiyono (2016: 298) mentions the R & D method is a research method used to produce a particular product, and test the effectiveness of the product. In order to produce a specific product, it is necessary to analyze the needs (used survey or qualitative method) and to test the effectiveness of the product in order to

function in the wider community, research is needed to test the effectiveness of the product (used experimental method).

This research and development produce a product that can be directly used. According to Sugiyono (2016: 298) educational products can be a specific curriculum for specific educational purposes, educational media, teaching methods, textbooks, modules, competency test models, evaluation systems, educational staff competence, classroom arrangement for application specific learner model, management model, production unit model, payroll system development system, employee, and others.

This research and development produce a product in the form of training module of writing scientific paper for teacher. The development model used in this research is the development model of TIER (Training intervention Effectiveness Research). The steps in this study consisted of studies of research findings tailored to the product to be developed, developing the product based on the findings and conducting field trials and revising the field test results. Characteristics of development, namely: 1) the product is based on the problems encountered in learning; 2) developed through design and testing; 3) trials are conducted in three stages, namely expert test, empirical test, and field test; and 4) the resulting product is a training model.

The TIER (Training intervention Effectiveness Research) model is designed to (1) consider the challenge of identifying factors that make successful action learning lessons; (2) logically in accordance with the research effort with the nature of the question; (3) minimize the risk of curriculum development and training; and (4) centralize the research resources. The TIER model applies to training interventions on a variety of topics (NIOSH, 1999: 7).

Scriven (1967) The four stages of the TIER model are described in detail as follows:

In Phase 1 (Formative Research / Needs Analysis), the training efforts of writing scientific papers are conceived, reviewed, and compiled. Typically, this stage involves the following research questions:

1. What are their needs and how are they determined?
2. What are the target populations served by the training?
3. How are the goals and objectives of writing scientific papers related to the identified needs?
4. How is the achievement of this objective valued?
5. What instructional approach should be done in the training of scientific writing?

Stage 1 helps researchers understand the participants of scientific papers. At this stage, assessment instruments and training materials are designed. During formative research, users of the TIER model collaborate with 1) module users to ensure learning strategies, learning styles, and instructional media; 2) validate the module with the expert, in accordance with the expert field of scientific papers; and 4) train respondents to practice writing scientific papers.

In Phase 2 (Research / Design Process), draft training materials for writing scientific papers, proposed learning approaches, and research instruments were tested at research sites at SD Negeri 1 and 3 Rejosari. Some research questions for this stage are as follows:

1. What modifications are required in writing scientific papers?
2. What is the writing material of scientific writing?

3. Is the assessment instrument used valid?
4. Is there a media of material dissemination?

The qualitative and quantitative information collected from field testing leads to material modification and increased confidence in the approach taken. Two field tests are desirable to perfect the writing materials of scientific papers. Prior to large-scale research, controlled evaluation began. Feedback from the first field test was used for pilot material for the second study. Information obtained from the second test is used to complete the material for writing scientific papers on the next stage of the TIER model.

Stage 3 (Research Results / Tests of Effectiveness) involves the study of controlled evaluation of the writing of scientific papers. This stage mainly deals with research questions.

1. Does the approach produce expected products such as increased knowledge, proper shaped attitudes, and positive behavior?
2. Has the targeted module been modified?
3. What are the important elements of the instructional approach that contribute to the outcome of scientific writing writing?

At the end of this stage, the results of the training efforts in writing scientific papers are documented. These data provide researchers with a better understanding of the various training approaches that can be applied to 1) the trained population, 2) the subject matter discussed, and 3) the instructional methods used.

In Phase 4 (Assessment), this final research emphasizes the research question: Does the research approach meet the need for scientific writing writing training? What is the impact of the required and undesirable writing of scientific papers for the teacher? What is the immediate effect on the teacher after the writing of scientific writing?

At this stage the researcher will examine the impact of the module related to the writing of scientific papers as it is applied to the exercise. Stage 4 research products are similar to Phase 3 products except that the emphasis is on the long-term effects of immediate outcomes.

According Sugiyono (2016: 80) population is a generalization region consisting of objects or subjects that have certain qualities and characteristics set by researchers to be studied and then drawn conclusions. Kothari (2004: 55) population is all the items in any field of inquiry a "Universe". A complete enumeration of all items in the "population" is know as a census inquiry ". Population in this research is all of Elementary School in Belitang Mulya Subdistrict, East Oku Regency of South Sumatera Province is as follows:

Table 1. Total Population

No	School Name	Number of Teachers
1	SD Negeri 1 Petanggan	8
2	SD Negeri 1 Purwodadi	8

3	SD Negeri 2 Purwodadi	9
4	SD Negeri 1 Srimulyo	11
5	SD Negeri 2 Srimulyo	10
6	SD Negeri 1 Rejosari	8
7	SD Negeri 2 Rejosari	8
8	SD Negeri 3 Rejosari	9
9	SD Negeri 4 Rejosari	8
10	SD Negeri 1 Sugih Waras	8
11	SD Negeri 1 Sido Waluyo	9
12	SD Negeri 2 Sido Waluyo	8
13	SD Negeri Sri Budaya	8
14	SD Negeri Suko Harjo	9
15	SD Negeri Ulak Buntar	10
16	SDIT Al-Hikam	9
17	SDIT Lan Tabur	4
Total		144

According to Sujarweni (2015: 81) Sample is a number of characteristics possessed by the population used for research. If the population is large, it is impossible for the researcher to take all the research for example due to limited funds, manpower and time, the researcher can use samples taken from the population. The sample is a snippet or part of the population (Mulyatiningsih, 2014: 10). Samples taken in this study are as follows:

Table 2. Number of Samples

No	School Name	Number of Teachers
1	SD Negeri 1 Rejosari	8
2	SD Negeri 3 Rejosari	9
Total		17

In this research, the research instruments used are as follows: a) module assessment, aims to know the value of validity and module developed based on the aspect of requirement, the content of the material, the language aspect, the presentation, the graphics and the conformity with the training of writing scientific papers; b) observation sheet used to record data obtained from the trainee's input, ongoing learning activities, and input from the instructor after the learning process at SD Negeri 1 and SD Negeri 3 Rejosari. Furthermore, the data obtained are used for module improvements developed after being tested in the learning process and; c) questionnaire, aims to find out the responses and responses of trainees to the training module of writing scientific papers for teachers that have been developed.

Findings

Difficulties of Primary School Teachers 1 and 3 Rejosari Belitang Mulya District East OKU Regency in the writing of scientific papers.

From all data that can be good through result of field observation and interview can be concluded that teacher of SD Negeri 1 and 3 Rejosari Belitang Mulya District Regency OKU East in writing of scientific paper not yet effective and maximal in executing and developing ability of writing scientific paper as fulfillment activities to improve the competence of professional development. It shows that the need to present a product that can overcome the weakness of teachers in the writing of scientific papers in an effort to improve the competence of professional development.

Development of training module for writing scientific papers for teachers.

Empirical data found through questionnaire in Formative Stage (needs analysis) indicate that answer of requirement of teacher of SD Negeri 1 and 3 Rejosari Belitang Mulya Sub-district of Regency of OKU East toward objective, material, training target of writing scientific writing to requirement, and follow-up in "The development of training modules for writing scientific papers for teachers" the average respondent chose very need. The needs analysis of each elementary school teacher is as follows.

Table 3. Summary of Teachers Response Per SD on Models

No	School Name	Percentage of Needs	Criteria
1	SD Negeri 1 Rejosari	96.76%	Really need
2	SD Negeri 3 Rejosari	94.61%	Really need

Furthermore, in this formative stage the researcher performs Contextual Analysis ie the place where applied training module. The module is implemented in SD Negeri 1 and 3 Rejosari. Before the module is applied the researcher needs to make sure the learning strategy, learning style, and media in use in learning. Validate modules by expert experts in the field of scientific papers, as well as train respondents in writing scientific papers.

Design is made in accordance with the results of needs analysis conducted on the research sample. The design here explains the picture of the flow of the work system. In

the design phase (the training process), the researcher will perform what modifications are needed in the writing of scientific papers, prepare the materials and training method of writing scientific papers, and prepare the assessment instrument. At this stage the researcher develops "development of training module of writing scientific paper for teacher" based on the design that has been prepared and the focus is on the presentation of the material. Then the module is given to the validator to be validated and tested limited in focus group discussion. The final conclusion of the validation is that the module can be used with revision. The validation results are then tested limited and refined in focus group discussion. The results of the focus group discussion stated that the paper product "Training Module Writing Scientific Writing For Teachers" is very good and worth using.

In the design phase, qualitative and quantitative information collected from field testing leads to material modification and increased confidence in the approach taken. Prior to large-scale research, controlled evaluation began. Feedback from the first field test was used for pilot material for the second study. Information obtained from the second test is used to complete the material for writing scientific papers on the next stage of the TIER model.

In examining the effectiveness of the need to involve the study of contaminated evaluation of the writing of scientific papers. At this stage the next researcher along with the school included in the research sample prepares the teacher (learners in the research sample) and applies the module. Furthermore, researchers tested the effectiveness and practicality of the module. The result of t-test analysis at SD Negeri 1 and 3 Rejosari that titung on "development of training module of writing scientific writing for teacher" is bigger than ttable and P value is very small with acquisition value 0,000 (influential and meaningful). This concludes that the module is effective for teachers in SD Negeri 1 and 3 Rejosari Belitang Mulya Subdistrict. Furthermore, in the implementation, the researchers also distributed questionnaires about the practicality of "training module of writing scientific papers for teachers" through questionnaires from teachers was the result of the can of the module is declared practical.

In the impact assessment phase, the researcher evaluates the learning process done to see the suitability of the module implementation with the design made. Then the evaluation of the results is done by posttest to see the level of respondent's achievement from pretest and after being given training on "training module of writing scientific writing for teacher". The results of the evaluation on the process of the entire study subjects concluded that the modules are implemented in accordance with the designed. The results of the evaluation on the results assessment stage show that the "training module for the writing of scientific papers for teachers" is influential and meaningful in accordance with the needs of the respondents, because there is an increase in the value of respondents from before and after the training.

DISCUSSION

The results of the research showed that the module in this paper is valid, practical and effective. The research findings in this paper are supported by research conducted by Fitriah (2012) that the factors that become obstacles in writing scientific papers are the cost in writing scientific papers, facilities and infrastructure, limited time to write

scientific papers, lack of computer mastery, difficulty find and share ideas and ideas and limitations of insight due to low reading interest. The research findings in this paper are supported also by research conducted by Noorjannah (2014) The research reveals that to develop the professionalism of teachers through writing scientific papers the teacher must follow the workshop, learn from the internet and a small part of the test that requires the results of scientific papers. The research findings in this paper is further supported by a research report conducted by Sukarno (2017) research results stated that the development of teacher profession is to write scientific papers. However, the reality on the ground shows that most teachers have not been able to produce and conduct scientific publications.

CONCLUSION

This research concluded that 1) teachers in SD Negeri 1 and 3 Rejosari Belitang Mulya, Oku Timur has not been maximal in implementing and developing the writing ability of scientific writing. "The development of training modules for writing scientific papers for teachers" should be presented to enhance teachers' ability to write scientific papers; 2) the result of the development concluded that the module used in the writing of scientific writing for the teacher was valid, practical and effective.

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