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DEVELOPMENT OF TRAINING MODEL TO IMPROVE ALUMNI CAPACITY IN WRITING SCIENTIFIC PAPERS

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ABSTRACT

The purpose of this community service activity in general is to help alumni of the Masters and Doctoral Study Program in Geography Education, especially those who are teachers and lecturers in empowering their abilities and skills to be more professional through gathering programs (alumni meetings). In particular, this program aims to: (1) determine the extent of alumni's abilities in writing scientific papers; (2) to train skilled alumni in writing scientific papers; (3) find out the opinions of alumni regarding the benefits of training activities and programs run by the study program. Efforts to overcome the problems stated earlier, alternative solutions to problems that will be pursued are as follows: (1) Conduct initial observations or field orientation regarding problems faced by alumni in writing scientific papers; (2) Conduct training on writing scientific papers; (3) Holding alumni meetings in order to strengthen alumni ties. The ultimate goal in this training activity and alumni gathering is to increase the capacity of the knowledge and skills obtained in the training they will apply both individually and in groups to produce scientific work that can increase teacher professionalism. Apart from that, it strengthens the emotional connection between fellow alumni and plans for follow-up of alumni association activities for the Masters and Doctoral Study Program in Geography Education FPIPS UPI.

Keywords: *Scientific Papers, Enhancement of Professional Capacity for Teachers and Lecturers, Alumni Meeting*

INTRODUCTION

Education is one form of human capital investment that cannot be denied its essence in economic development (Fahmi & Mulyono, 2016). According to Sun et al. (2018), education is a long-term investment, Furthermore, where new benefits are obtained several years later. Floden, et al (2020) also mentioned that the development of a research culture through education is crucial because research is the key to a nation's progress.

The issue of education quality remains an actual and relevant topic, especially when it comes to development in the education sector, which has an impact on the low motivation and quality of teachers (Hoesni & Darmayanti, 2021). Therefore, efforts are needed to improve the quality of education at every level of education (Lonsiong & Ag Kiflee Dzulkifli, 2019). According to Anisimova, et al. (2020), quality education involves the development of the teachers' competency, including research ability.

Before such efforts, it is important to note that teachers also face problems in this regard. To prevent further decline, the development of the teaching profession must continue to be emphasized (Putri & Imayati, 2017). With the implementation of Law No. 20 of 2003 regarding the national education system, it signals the need for high-quality education, which is highly influenced by

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human resources and the educational system (Hermayawati, 2018). The target is that teachers will be better able to work as professional educators in carrying out their duties and responsibilities.

The issuance of SK MENPAN No. 26/MENPAN/1989 regarding credit scores for teacher positions means that teacher promotions are no longer through the regular promotion route but through the selection promotion route, namely structural and functional promotions every 2 (two) years (Prabowo & Hidayah, 2016). This demands that teachers develop themselves through various activities, one of which is professional development through the competency to conduct research and writing scientific papers.

Professional development can be achieved through various means, one of which is conducting research by preparing proposals or scientific works in the field of education (Aina et al., 2015). This is especially important for teachers, particularly those in the IV/a group, to be able to hold the position of level I teacher supervisor (IV/b group). Implementing such activities is a requirement (Guidelines for Implementing Credit Points for Teacher Positions, cited from Ministry of Education and Culture Decree No. 02/O/1995: 44-45).

Based on observations, there has not yet been any training provided for teachers and alumni lecturers from the Master's and Doctoral Program in Geography Education at FPIPS UPI in writing academic papers. Moreover, this activity is expected to be an alternative solution for teachers and alumni lecturers to gain knowledge and improve their ability and motivation to write.

Teachers and lecturers today require an increase in their capacity to write scientific papers for various professional purposes (Nofrianto, 2019). However, they often spend most of their time on routine teaching tasks. This means that teacher/lecturer alumni are trapped in work routines, and research activities that lead to publication for sustainable competence improvement have not been carried out according to their needs (Karlina, 2020). This is due to several factors, one of which is that they rarely receive training or enlightenment to improve their skills in writing scientific papers due to limited facilities and infrastructure (Irnawati et al., 2021).

Based on these facts, training activities on writing scientific papers are very much needed for teacher/lecturer alumni. As studied by Baan et al. (2020), the competency of conducting and integrating research into education programs are the aspects of gaining teachers' professional competency, apart from enriching their pedagogical and content knowledge.

The general objective of this community service activity is to help teachers/lecturers empower their abilities and skills, and to motivate teachers to become more professional. Based on this, the goal of the implementation is to propose a solution that needs to be considered or offered, namely the need for training activities on writing scientific papers for teachers/lecturers, despite being constrained by time, funding, and human resources.

RESEARCH METHOD

The research method used in this study is descriptive. The research subjects are the participants of the scientific paper writing training organized by the Master and Doctoral Program of Geography Education UPI. The data is obtained through observation and interview techniques. The data analysis is carried out in several steps: a) data categorization and codification; b) data analysis; and c) drawing conclusions (Linneberg & Korsgaard, 2019).

The selection of the appropriate method for training depends on its objectives. The implementation method for this activity is in the form of refreshment training and provides best practices in writing scientific papers. The training method used in this activity is the andragogy method (Ekawarna & Salam, 2020).

The main activity of community service is to write a research paper online for alumni teachers/lecturers of the Master and Doctoral Programs in Geography Education at FPIPS UPI. The steps for community service are as follows:

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1. Needs assessment. Needs assessment is the initial activity before conducting the training. The activity will be conducting interviews with several education stakeholders to gather information about the readiness of participants to attend the training, a list of potential participants, and expectations after the training is conducted.
2. Development of teaching materials needed for training. After identifying the training needs, the next step is to develop teaching materials in the form of papers or slides that will be given during the training.
3. Participant recruitment, with a target of 50 or more people. The subject of this training is alumni of Geography Education Study Program who are currently working as geography teachers in various schools across Indonesia.
4. Approach and implementation method The training implementation will consist of a theoretical session and a practical session.
   a) Theoretical session
      Number of days: 1 effective day
      Approach: Andragogy
      Methods: Lecture, discussion, and workshop
   b) Practical session
      Number of days: 15 days
      Approach: Andragogy
      Methods: Assignment
   c) Evaluation of training activities and reporting. The success of the scientific paper writing training program is determined by the product of the paper produced by the teachers. Assessment of the scientific paper is conducted by the speaker. Participants will receive feedback for the development of their abilities.

RESULTS AND DISCUSSION

Need Analysis of Training

Training for alumni is a part of the activities aimed at developing career and capacity according to their roles in society (Prasetyo, et al., 2021). It can be said that alumni training is a need for both the academic program and alumni. As an educational institution, the Geography Education Study Program has an obligation to pay attention to the professionalism of geography teachers. However, training activities for alumni to support the achievement of their professional competencies have not been widely conducted. This serves as the foundation for the implementation of scientific paper training for alumni who work as teachers.

The goal of the training program is to encourage the skills of writing research proposals for teachers and lecturers. Therefore, the content of the material that will be presented needs to take into account the needs of the field. Before the training is carried out, the training needs must be identified. Interviews with education stakeholders are conducted to assist the researchers. Through this stage, it is found that there has never been a research proposal training activity for teachers and lecturers by the Master and Doctoral Program in Geography Education at UPI.

Teachers should not be exempt from research activities. The current situation indicates a lack of research work done by teachers after graduating from university. In principle, the development of teaching activities can be done through research. Findings encountered in teaching and learning activities can be input for innovations to be developed. When teachers are able to conduct research, their development is not only limited to replication but also to constructing solutions for local problems that are identified or adapting to the development of scientific knowledge in teaching directly done by teachers.

Writing scientific papers is also one of the requirements for teachers in career advancement. This condition often leads to writing scientific papers in a rushed or incidental manner. The results obtained through such a process are certainly less than optimal. Some obstacles faced by teachers in writing scientific papers are a lack of time due to the teaching load they face. By conducting research, it is hoped that teachers can efficiently identify phenomena in teaching and present them as research data. This method allows teachers to write scientific papers amidst their teaching workload.

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Scientific papers that can be developed by teachers are the result of experimental or classroom action research. Through the lesson plan created, teachers can test the learning model or approach used. This can result in a scientific paper to determine the effect of the model or approach on certain learning achievement indicators. Through classroom action research, teachers can see the achievement of the model implementation in improving learning achievement. These two research methods are not unfamiliar to teachers who have completed higher education in the Geography Education Study Program.

In addition to internal factors related to teaching load and the current lack of capacity for teachers to conduct research, there are also several external factors that make it difficult for teachers to develop scientific paper writing skills. Generally, schools do not cultivate research culture among teachers. Some schools have scientific journal sites intended for publishing teachers' journal articles. This can be emulated by other schools so that every finding and development made by teachers can be documented and beneficial to other teachers who read it.

The implementation of the Merdeka Curriculum currently provides a space for teachers to be creative in teaching activities. Teachers no longer have to copy teaching materials from the central government. With the decentralization of the curriculum, learning activities that are considered not very in line with the curriculum structure can now be allocated to project activities. The more opportunities for teachers to innovate, the more stimulating it can be for research implementation. The usefulness of conducting research can be felt by providing guidance on research objects and sources. When teachers understand how field phenomena they encounter can become sources for research, then the implementation of research will feel much easier.

Meanwhile, the skills of writing research proposals are very important for teachers and lecturers in improving their professional competence, where the culture of research in the form of writing research proposals can improve the quality of education (Van Katwijk, 2021). The interview rubric used in the needs identification stage is as follows.

Table 1. Needs Analysis of Training

Dimension	Indicators	Measurement Components
Person Analysis	Knowledge gap	The level of knowledge of teachers and lecturers related to writing scientific paper.
	Skills gap	The level of skills of teachers and lecturers in writing scientific paper.
Task Analysis	Workload burden	The obligation of teachers and lecturers to write scientific paper.
	Difficulty in performing tasks	The hindering factors experienced by teachers and lecturers in writing scientific paper.
Organization Analysis	Competency improvement	The relevance of scientific paper training to the professional competence improvement of teachers and lecturers
	Applicable regulations	The relevance of scientific paper training to fulfill the professional duties of teachers and lecturers in accordance with applicable regulations.

Source: Data analysis (2022)

The needs analysis is divided into three dimensions, namely person analysis, task analysis, and organization analysis. In the personnel dimension of teachers, the indicators of problems that become the source of training needs are knowledge and skills gaps. Currently, the knowledge gap that teachers have when they start teaching compared to when they were students is quite significant. This was conveyed in an in-depth interview where most teachers stated that they had forgotten the procedures for conducting research. The gap between graduation time and the length of teaching experience is now the dominant reason for the knowledge gap among teachers in writing scientific papers.

The level of knowledge and skills of teachers in writing scientific papers is adjusted to the level of research material that will be compiled. The initial study results show low

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levels of knowledge and skills. Thus, the material that is compiled starts from the basic concept of research, both theoretically and practically. This material serves as a refresher for teachers to remember the material on research methods and procedures that they obtained when they were still in college. This finding indicates that age gap can also determine the ability to write scientific papers. Teachers who graduated two to three years ago still know and understand the methodological procedures for conducting research.

In training activities, the material is not categorized based on the level of knowledge. However, the material is taken from the general tendency of knowledge and skills levels. The second component in the needs analysis is task analysis. This pertains to the professional tasks of teachers that hinder the achievement of skills in writing scientific papers. The teaching load or number of teaching hours is often the target pursued by teachers. To achieve a promotion or fulfill administrative obligations, teachers must teach for a certain number of hours. Taking on many teaching hours has consequences for preparing learning tools and allocating time to evaluate learning. This burden, which is considered heavy for teachers, is generally the reason for the minimal number of scientific papers produced by teachers.

Research activities to be conducted provide a solution to the problem of teacher workload constraints. As mentioned above, research and teaching implementation should not be a dichotomy. Teachers who have complete records related to the phenomena when teaching should be able to detect problems and solutions in learning. Research activities can be incorporated into teaching. For example, teachers always document grades or learning achievements as the basis for data collection for learning model or approach implementation. Data collection techniques such as interviews or questionnaires are also not difficult because research subjects are often encountered in teaching activities.

Organization analysis in the training needs analysis is similar to regulatory analysis. The obligation to write scientific papers cannot be separated from the regulations provided by government institutions. Referring to Regulation of the Ministry of State Apparatus and Bureaucracy Reform No. 16 of 2009 concerning functional positions of teachers and their credit scores, research implementation is part of sustainable professional development. The obligation under regulation certainly provides a greater incentive for teachers to write scientific papers because it involves the sustainability of their profession.

The obligation to conduct research must be balanced with the quality of the written works produced. Articles presented should not only be completed but also have adequate quality so that they can be beneficial to teachers and readers. The quality of the written works is one of the indicators of successful training implementation. Therefore, scientific paper writing training should not stop after the material is provided, but there should also be an evaluation session for the results of the scientific papers written by teachers. Training speakers can become a reviewer of scientific papers produced by teachers.

The analysis of needs is not only focused on teachers as the beneficiaries of training. The study program, as the organizer, also has an obligation to develop the career of its alumni (Hollywood, et al., 2020) In accreditation and audit, the study program must attach employment data that corresponds to the competencies. To achieve this target, the study program cannot solely rely on natural alumni progression. Several activities can be carried out as stimuli for alumni career development. Training activities are a way to evaluate the quality of alumni in meeting their professional competencies.

Alumni performance in the working world is also taken into account in the analysis of training needs. Employers or leaders of institutions where alumni work are involved in the tracer study. One of the competencies demonstrated by teachers in supporting their profession is to produce scientific papers. The implementation of scientific paper training activities can support the improvement of teachers' competencies. Good assessment and achievement of competencies according to

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graduate learning outcomes are indicators in the accreditation of study programs.

Based on the results of interviews with education policy makers, training in writing scientific papers is necessary because the quantity and quality of research made by teachers is still inadequate. Encouragement for teachers to be productive in writing scientific papers has always been done, but there are still few training programs due to time and coordination constraints.

The role of higher education institutions in providing training for writing scientific papers is a form of implementation of the "Tri Dharma Perguruan Tinggi" (Herlawati, et al. 2022). Furthermore, alumni training is also a continuous effort of higher education institutions in career development and improving the quality of graduates. According to Sullivan, et al. (2019), training can also serve as a refresher for teachers who have long graduated from higher education institutions so they can re-familiarize themselves with the culture of research and writing.

Needs analysis was also conducted on alumni who are now teachers. The results of interviews with teachers showed that training in writing scientific papers is very necessary. This is because teachers need guidance when writing scientific papers for their promotion. The challenges faced by teachers in writing scientific papers are not understanding the structure, techniques, and methods of writing, as well as lack of time to learn and write scientific papers.

Development of Training Material

The training on writing a scientific paper was conducted using the andragogy method. This has implications on both the teaching material and the delivery techniques. The relationship between the instructor and the participants in andragogy is characterized by mutual assistance, unlike the dependency relationship commonly found in the pedagogical approach. Andragogy's orientation is towards solving current problems and applying more concrete solutions, while learning in pedagogy places teaching materials as a foundation for the future. The learning planning is outlined in the description below.

In scientific paper writing training activities, each online learning session is equipped with worksheets for training participants. The purpose of creating worksheets is to facilitate self-directed learning in the midst of busy participants. The construction and composition of the worksheets are adjusted to the complexity of the teaching materials and the estimated time required.

The worksheet drafts go through a validity and verification stage before they can be disseminated and used in training activities. The developed worksheets have a structure, namely an introduction, teaching material content, summary, as well as formative tests and assignments.

Table 2. Materials of Scientific Writing Training

Competency Branch	Materials
Theories	Introduction and Terminologies in Scientific Writing
	Guidelines for Writing Scientific Papers
	Strategies for Choosing a Title
	APIK Research Problems 1
	Building a Framework for the Scientific Paper
	Determining Research Methods
Practices	Research Methods
	Techniques for Determining Theoretical Framework
	Processing Research Data
	Presenting Results
	Scientific Paper Simulation

Source: Data analysis (2022)

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Training materials are presented in handouts and slides. Content validity testing of the training material product is conducted by subject matter experts and media experts. The indicators used in testing the validity of the material include: a) suitability of training material; b) structure of material presentation; c) completeness of material; d) use of terminology and language; and e) relevance of material (Ximenes et al., 2019). The results of the material validity assessment show that the handout and slide products are suitable for use in training.

The development of training materials is divided into theory and practice. The theoretical foundation is necessary as a refresher for teachers in conducting research. The theoretical material is provided by speakers from the field of geography education lecturers. The theoretical preparation is a preparation so that the research implementation is ensured to have novelty, feasibility, accuracy, and usefulness. The andragogy method is used in the training. The interaction between the speaker and the participants is no longer in the form of lectures, but more towards discussions and Q&A sessions. The expected results of providing theoretical material are the ability to determine the title, identify research problems, as well as design the flow and procedure of research.

The practical aspect of developing training materials is achieved through the preparation of scientific papers in a guided manner. The approach used in this activity is group dynamics. The selection of this approach is intended for participants to discuss current learning issues that can be raised as research topics. In addition, teachers can also peer-tutor in correcting or completing drafts of scientific papers that have been prepared. The interaction between teachers in the training activities allows for the emergence of new ideas in learning implementation and scientific paper preparation. Therefore, it can avoid replication and duplication of research results that are too frequent or less contextual to current conditions.

Table 3. Content Validity Testing

No	Validity Testing Indicators	Score
1	Suitability of Training Material	100%
2	Structure of Material Presentation	86.6%
3	Completeness of Material	93.3%
4	Use of Terminology and Language	100%
5	Relevance of Material	100%

Source: Data Analysis, 2022

The use of handouts and slides is considered appropriate in delivering training materials because they are easy to understand and can be reviewed (Nandi, 2006). The training materials created also have practical characteristics and contain steps in writing scientific papers. Therefore, the training activities carried out no longer focus on research and education theory, but on how to conduct research from the phenomena faced by teachers.

Validation testing by media experts is necessary to ensure the suitability and attractiveness of media in achieving the designated training objectives. The indicators used in assessing the validity of media include: a) attractiveness of media; b) novelty of media; c) usability; and d) accessibility (Pranyani, et al., 2021). The results of the media validity assessment show that the media used in training has reached the required standard.

Table 4. Media Validity Testing

No	Validity Testing Indicators	Score
1	Attractiveness	93.3%
2	Novelty	93.3%
3	Usability	93.3%
4	Accessibility	100%

Source: Data Analysis, 2022

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The media used in training are slides. The slides are easy to understand and are often used by teachers in learning activities. The slides usually contain key points in delivering the material, making it easier for participants to understand what is being conveyed. The use of this media is also considered effective because it is user-friendly and does not require difficult facilities to open or access it.

Formation of Teacher Competence in Writing Scientific Papers

Evaluation of the achievement of scientific writing training is done through the assessment of the product. After the training is completed, the teacher is instructed to write a scientific paper. The topic and problem can be taken from the teaching practice that has been conducted. This is done to facilitate the teacher in analyzing and practicing the ability to process and present data for research.

The assessment indicators that determine the formation of scientific writing competency are based on the needs of the training. After participating in the training, the teacher is evaluated based on: a) the level of the teacher's knowledge in scientific writing; b) the level of the teacher's skill in scientific writing; c) factors that facilitate and hinder the writing of scientific papers; and d) the quality of the paper based on the assessment of the trainer.

The research results show that the formation of teacher competency in writing scientific papers is greatly influenced by motivation (Mahfud & Harsono, 2019). The teaching workload often becomes an obstacle for teachers to conduct research. Teachers do not have enough time, knowledge, and experience to write scientific papers. This causes teachers to be more inclined towards teaching routines, even though writing scientific papers is one of their professional competencies.

Research for teachers should be an easy thing to do. Learning activities can be the object of research. Innovations and development of learning conducted by teachers can be presented scientifically. Therefore, the appropriate research methods for teachers are experimental, classroom action research, and development research (Althrichter, 2020). Through research, learning activities conducted by teachers can have broad benefits and be further developed by various parties.

The component of teacher competency in writing scientific papers is the quality of the product. Things that need to be considered in the teacher's scientific paper product are: a) the structure of the scientific paper; b) accuracy and clarity of the written narrative; c) the accuracy of the method used; d) validity of the data processing and results techniques; e) data accuracy; and f) the novelty of the research. Achievement of these indicators is necessary so that the prepared paper can not only be completed, but also easily published in various media

CONCLUSIONS

The skill of writing scientific papers is a part of fulfilling the professional competence of teachers. Scientific writing is a prerequisite for career development. The skill of writing scientific papers can also help teachers develop their teaching processes. Current conditions show that teachers still encounter obstacles in writing scientific papers, including time and coordination constraints. The scientific writing training activities carried out by the Master's and Doctoral Programs in Geography Education aim to attract alumni who currently work as teachers to develop their skills in writing scientific papers. These skills are one of the specialized skills that alumni need to possess, namely writing and publishing scientific papers. Further research can focus on developing teaching materials for scientific writing training for teachers and monitoring their scientific writing skills.

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