

IMPROVING LECTURERS' COMPETENCIES IN THE APPLICATION OF QUANTITATIVE RESEARCH METHODOLOGY AND QUALITATIVE FOR THE STRENGTHENING OF SCIENTIFIC PUBLICATIONS

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Abstract

This community service program aims to improve lecturers' skills in implementing both quantitative and qualitative research methods to support increased scientific publications. Challenges faced include a lack of understanding of research design, limitations in data analysis capabilities using software, and low productivity in scientific publications. The method used in the implementation involves a training and guidance approach consisting of needs analysis stages, learning research methodology, scientific article writing training, intensive guidance, and checking through pre-tests and post-tests. The impact of this activity shows an increase in lecturers' skills in understanding research methodology, data analysis skills, and scientific article writing skills that meet the standards of reputable journals. In addition, this activity also plays a role in increasing lecturers' motivation and confidence in conducting scientific publications. Thus, this program contributes to creating an academic culture based on research and publications and increasing the quality and quantity of lecturers' scientific publications in a sustainable manner.

Keywords: lecturer competence, research methodology, scientific publication, training

1. INTRODUCTION

Improving the quality of lecturers' scientific publications is an important indicator in strengthening the quality of higher education and implementing the Tri Dharma of Higher Education. However, various studies show that lecturers' competence in research methodology, both quantitative and qualitative, remains a major challenge in producing quality scientific publications that are indexed with international reputation (Fithriani & Salmiah, 2022). Problems in this community service activity include: (1) lecturers' low understanding of appropriate quantitative and qualitative research designs; (2) limited capabilities in software-based data analysis; (3) lack of experience in writing scientific articles according to reputable journal standards; and (4) low publication productivity in SINTA-accredited national journals and reputable international journals. This is in line with the finding that research and publication competence have a significant influence on lecturers' academic performance (Waskito, 2020). In addition, the demand for publications in reputable Scopus journals is increasing, so strengthening lecturers' capacity through systematic training and mentoring is necessary (Mangelep et al., 2025). Research methodology training activities integrated with scientific writing practices have proven effective in improving the quality of academic publications.

Strengthening lecturers' capacity in scientific publication also requires structured training support, protected writing time, and ongoing academic mentoring. Training in writing internationally reputable scientific articles for lecturers has been shown to improve participants' knowledge of writing techniques and compliance with internationally reputable journal standards (Hariguna et al., 2023). On the other hand, the formation of lecturer writing groups with scheduled writing times has also been reported to contribute to increased productivity of manuscripts, publications, and the growth of a mutually supportive research community (Kwan et al., 2021). Furthermore, mentoring and mentoring workshops for lecturers are considered effective in strengthening academic professional development through collaborative practices and oriented towards clear follow-up plans. The aspect of research methodology literacy is also an important determinant in improving the quality of lecturers' scientific publications. Research shows that a strong understanding of research design, instrument validity, and data analysis techniques directly contribute to the quality of the articles produced and the level of acceptance in journals. On the other hand, the low productivity of lecturer publications is also often associated with a lack of experience in the

submission and revision process of scientific articles, so that capacity building is needed not only in methodological aspects, but also in a comprehensive scientific publication strategy (Salager-Meyer & Françoise, 2008) . Based on these problems, the solution offered in this community service activity is through a program to improve lecturer competency in quantitative and qualitative research methodology integrated with scientific article writing training and publication assistance.

2. IMPLEMENTATION METHOD

The implementation method for this activity uses a participatory and collaborative approach based on training (training and mentoring approach). This approach was chosen because it has proven effective in improving lecturers' research and scientific publication skills (Mangelep et al., 2025) . The implementation stages of the activity include *a Needs Assessment*, namely: identifying the level of lecturers' understanding of research methodology and scientific publication, training in Research Methodology both quantitatively and qualitatively, training in Scientific Article Writing, scientific article structure, citation and reference techniques, publication strategies in SINTA and Scopus journals, mentoring (Coaching & Mentoring), and measuring competency improvement through pre-tests and post-tests as well as the number of articles produced. This method integrates theory and practice so that participants not only understand the concept but are also able to produce real outputs in the form of scientific articles.

3. RESULTS AND DISCUSSION

Community service activities conducted in the form of training and mentoring on research methodology demonstrated positive results in improving lecturers' competencies. Overall, participants' understanding of systematic quantitative and qualitative research design improved. This was evident in their ability to determine the type of research, develop research instruments, and select data analysis techniques appropriate to the research objectives. This improvement aligns with findings that practice-based research methodology training improves the quality of research design and the validity of research results (Winkler & Wofford, 2024) . skills also improved significantly. Participants began to develop articles according to standard journal structures, such as IMRAD (Introduction, Methods, Results, and Discussion), and understood citation techniques using a reference manager. Intensive mentoring activities significantly accelerated the article writing process from the submission stage. This aligns with research showing that direct training and mentoring programs can increase lecturers' scientific publication productivity (Mangelep et al., 2025). Furthermore, this activity also boosted lecturers' motivation and confidence in publishing scientific papers. Participants not only understood the technical aspects of research but also gained insights into journal selection strategies, the submission process, and how to respond to reviewers. This increased motivation is crucial for fostering the sustainability of a research- and publication-based academic culture.

The results of this activity are also supported by previous community service findings which show that a reputable scientific article writing workshop can improve lecturers' scientific writing skills, strengthen research collaboration, and significantly encourage increased publication productivity (Rifa et al., 2025) . In addition, scientific article publication training carried out in a structured manner through the stages of preparation, implementation, mentoring, and evaluation has proven effective in improving participants' knowledge and skills in writing scientific articles that are worthy of publication (Thahir, 2024) . Thus, the results of this activity confirm that a systematic training approach supported by ongoing mentoring is an appropriate strategy in improving lecturers' competence in research methodology and scientific publication.

3.1 Table

To clarify the results of the community service activities implemented, the following is a summary of the improvement in lecturers' competencies in research methodology and scientific publications. This table illustrates a comparison of conditions before and after the training and mentoring activities, as well as indicators of success achieved. This data presentation aims to provide a systematic overview of the activities' impact on improving lecturers' academic capacity.

Table 3.1.
Improving Lecturer Competence in Research Methodology and Scientific Publication

No.	Competency Aspects	Conditions Before Activity	Conditions After Activities	Improvement Indicators
1	Understanding research methodology	Limited to basic concepts	Able to compile quantitative & qualitative research designs	Improving the quality of research proposals
2	Software-based data analysis	Minimal use of software	Able to use NVivo, Amos, and Stata in a basic way	More systematic analysis results
3	Writing scientific articles	journal standards	Follows the IMRAD structure and APA citation style	Article ready to submit
4	Use of scientific references	Limited and unstructured	Using a reference manager (Mendeley/Zotero)	Citations are neater and more valid
5	Publication productivity	Low	Increase (article draft increases)	Scientific article output

3.2 Photos Activity



4. CONCLUSION

Based on the results of the community service activities that have been implemented, it can be concluded that training and mentoring on both quantitative and qualitative research methodologies combined with scientific article writing have proven effective in substantially improving lecturers' competencies. This improvement is evident in the lecturers' ability to understand research design, conduct data analysis using software, and compile scientific articles in accordance with recognized journal standards. This activity also has a positive effect on increasing lecturers' motivation and confidence in conducting scientific publications. With a structured training approach and ongoing mentoring, lecturers not only gain theoretical knowledge but are also able to produce concrete products in the form of draft scientific articles ready for publication. On a broader scale, this activity also contributes to the development of an academic culture based on research and publication in the university environment. Therefore, the sustainability of the program in the form of advanced training, intensive mentoring, and strengthening the lecturer

research community is crucial to continuously improve the quality and number of scientific publications.

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