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ENHANCING BIBLIOMETRIC ANALYSIS SKILLS OF INFORMATION TECHNOLOGY STUDENTS THROUGH PUBLISH OR PERISH TRAINING

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Abstrak

Keterampilan literasi bibliometrik menjadi kebutuhan penting dalam menunjang kualitas akademik mahasiswa, khususnya dalam penyusunan karya ilmiah yang berbasis data sitasi. Fakta menunjukan bahwa mahasiswa Program Studi Teknologi Informasi UIN Gusdur masih menghadapi kendala dalam memahami dan menerapkan prinsip-prinsip dasar analisis bibliometrik secara optimal. Kegiatan pengabdian ini bertujuan untuk meningkatkan kemampuan mahasiswa dalam menelusuri, mengevaluasi, dan menginterpretasi literatur ilmiah menggunakan aplikasi *Publish or Perish*. Metode yang digunakan dalam kegiatan ini meliputi sosialiasi, edukasi, dan seminar praktik yang dilaksanakan secara luring selama tiga hari. Hasil pre-test dan post-test menunjukkan peningkatan signifikan dalam aspek pemahaman konsep bibliometrik, penguasaan aplikasi, serta kemampuan menyusun referensi berdasarkan data sitasi. Sebagian besar peserta juga menunjukkan antusiasme tinggi dan minat untuk mengembangkan keterampilan ini secara mandiri. Kegiatan ini menunjukkan bahwa pelatihan *Publish or Perish* merupakan pendekatan edukatif yang efektif dan inovatif dalam memperkuat literasi akademik mahasiswa. Temuan ini mendukung integrasi pelatihan bibliometrik ke dalam kurikulum atau program pengembangan akademik yang lebih luas. Pengabdian lanjutan disarankan untuk menguji dampak jangka panjang pelatihan ini terhadap produktivitas publikasi ilmiah mahasiswa di berbagai disiplin ilmu.

Kata kunci: Analisis bibliometrik; Publish or Perish; literasi sitasi; pelatihan akademik; mahasiswa teknologi informasi.

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Abstract

Bibliometric literacy skills are essential in supporting students' academic quality, especially in preparing scientific papers based on citation data. The facts show that UIN Gusdur Information Technology Study Program students still face obstacles in optimally understanding and applying the basic principles of bibliometric analysis. This community service activity aims to improve students' ability to search, evaluate, and interpret scientific literature using the Publish or Perish application. The methods used in this activity include socialization, education, and practical seminars, which are carried out offline for three days. The pre-test and post-test results showed significant improvements in understanding bibliometric concepts, mastery of applications, and the ability to compile references based on citation data. Most participants also showed high enthusiasm and interest in developing these skills independently. This activity indicates that the Publish or Perish training is a practical and innovative educational approach in strengthening students' academic literacy. The findings support integrating bibliometric training into the curriculum or broader academic development programs. Further work is recommended to examine the long-term impact of this training on students' scientific publication productivity in various disciplines.

Keywords*: Bibliometric analysis; Publish or Perish; citation literacy; academic training; information technology students.*

INTRODUCTION

The rapid development of science and information technology requires academics, especially students of Information Technology (IT) study programs, to actively contribute to developing knowledge through scientific publications. Publications are a tangible form of intellectual contribution and an essential indicator in academic assessment, both personally and institutionally. In the digital era, scientific information is widespread on various platforms, but its maximum utilization requires skills in systematically searching, evaluating, and analyzing scientific literature. A critical approach in this community service is bibliometric analysis (Dani et al., 2024).

Bibliometric analysis is a quantitative method used to assess scientific literature through bibliographic data such as the number of citations, h-index, number of publications, and writing trends. This ability has not been optimally utilized among students, especially those preparing their final project or thesis (Yeyendra et al., 2023). Students tend to rely on random and unstructured reference searches. This impacts the low quality of references used and the lack of insight into the development of current topics in their scientific field. This phenomenon is also seen among IT students at UIN K.H. Abdurrahman Wahid Pekalongan (hereinafter UIN Gusdur), whose skills in searching and evaluating data-based scientific literature are still limited. Most students do not understand

how to use academic tools to support scientific writing more robustly and measurably (Hetami et al., 2023).

The main problem faced is the low ability of students to conduct citation analysis and evaluation of scientific literature. Students often have difficulty identifying credible and relevant sources, and are not familiar with techniques for measuring the contribution of certain scientists or journals in a field of study. These weaknesses hamper the quality of their academic writing and potentially affect the research-based learning process. The lack of training and mentoring in bibliometric analysis tools exacerbates this condition. Students need media that can help them assess the impact and relevance of literature more objectively and systematically (Sari et al., 2024).

One of the solutions offered to answer these problems is through training in using the Publish or Perish (PoP) application. This application is free software developed by Anne-Wil Harzing (2023) and serves to extract citation data from various sources such as Google Scholar, Scopus, and others. Using this application, users can analyze the performance of academic publications based on multiple metrics such as number of citations, h-index, g-index, and others. This course provides conceptual understanding and practical skills in conducting literature searches and bibliometric evaluations. Theoretically, this training refers to a constructivist approach to learning, where students are encouraged to construct knowledge through direct experience in processing data and making decisions based on the findings obtained (Azmi et al., 2024).

This training is also relevant to the findings of various previous community service activities. For example, a study conducted by Putri et al. (2024) showed that training in using PoP could improve students' ability to identify community service trends and formulate sharper research questions. In addition, the community service conducted by Megawanti et al. (2024) on social science students also proved that this training effectively expanded students' bibliographic insights and improved the quality of citations in academic writing. These findings show that PoP training is a relevant and applicable approach to IT students who want to enhance their research skills quantitatively.

The urgency of this activity is even higher considering the demands of the Merdeka Learning Campus Merdeka (MBKM) curriculum, which encourages students to be more independent, creative, and innovative in the learning process, including in scientific research and publications. The ability to deeply search and analyze scientific literature supports the preparation of final assignments. It equips students with essential skills that are functional in work and further education. This ability becomes even more critical in the community

service of an IT study program, where technological innovation relies heavily on cutting-edge literature (Thalib, 2024). Students not only gain technical skills but also develop a critical mindset towards scientific dynamics in the field of information technology through this training.

The community service team views this training as a strategic and applicable step in addressing the need to improve student academic quality. We believe that through PoP training activities, students will be more skilled in conducting literature reviews, able to measure the relevance and significance of the literature they use, and encouraged to write and publish their scientific work more systematically and data-based (Amaliyah et al., 2023). This training is also expected to be an initial step in developing a research culture among UIN Gusdur IT students. With a participatory and contextual approach, it will allow students to learn actively and collaboratively.

This community service activity aims to have a sustainable, positive impact on improving students' academic quality. The community service team organizes this training with a balanced theoretical and practical approach so that participants not only theoretically understand the concept of bibliometric analysis but can also implement it directly through the PoP tool. Hopefully, this activity will become a training model that can be replicated in other study programs within the scope of UIN Gusdur and other universities.

METHOD

This community service uses a community education approach through socialization, education, and seminars designed in an integrated manner to improve the bibliometric analysis skills of UIN Gusdur Information Technology Study Program students. This activity aims to provide conceptual understanding and technical skills in using the PoP application to analyze scientific literature based on citation data. The previously identified problem, namely the low bibliometric literacy of students, was answered with a series of participatory methods that placed students as active subjects in the learning process (Falikhah et al., 2025).

The first step taken was socialization activities aimed at building students' awareness and motivation regarding the importance of bibliometric analysis skills in supporting the quality of scientific work. Socialization is carried out through interactive discussions that discuss common challenges in searching scientific literature, the importance of selecting relevant references, and the role of citations in increasing the credibility of scientific writing. The community

service team conveyed globally and locally the importance of utilizing citation indicators in the academic world and the role of technology in supporting these activities.

After the socialization stage, the activity continued with education or technical education, emphasizing the theoretical and operational understanding of the PoP application. At this stage, students are introduced to basic bibliometrics concepts, such as h-index, g-index, i10-index, and total citation count, along with their implications for evaluating literature quality. The community service team delivered the material using an andragogical approach that adapts to the characteristics of students as adult learners. Students are invited to explore the main functions in PoP, from searching by author name and keywords to analyzing the impact of publications based on citation metrics.

Furthermore, community service activities are strengthened through organizing practical seminars designed as collaborative learning forums. In this seminar, participants received theoretical material and were directly involved in using PoP through case studies and simulations of searching citation data from various sources such as Google Scholar. The community service team is a facilitator and companion who guides participants in operating the application, interpreting analysis results, and linking them to their academic needs, such as preparing theses and writing scientific articles.

The community service team also prepared training modules and guidelines for using PoP in digital form that participants can access independently to support the effectiveness of this activity. This material is designed to be still used for sustainable science and technology diffusion after the activity. Students are invited to do independent practice outside the main session, and the community service team provides limited consultation time for participants who experience problems in further practice. This strategy was chosen to strengthen the long-term impact of the activity and ensure that the skills taught can be applied in real terms in the participants' academic activities.

This activity is implemented with a collaborative approach that positions lecturers and students equally as learning partners. The community service team not only acts as a material provider but also as a companion who is ready to provide direction, feedback, and solutions to challenges faced by students during the training process. Through this approach, the community service is expected to overcome the limitations of students' bibliometric understanding and create a more critical and data-based academic climate within the UIN Gusdur Information Technology Study Program.

RESULT AND DISCUSSION

The community service results consist of quantitative and qualitative results of activities to improve the Bibliometric Analysis Skills of IT Students of UIN Gusdur through PoP Training. The following is a flow chart of this community service activity, which consists of five main stages: Preparation, Socialization, Education, Seminar and Practice, Evaluation, and Follow-up.

1. Preparation Stage

This community service activity begins with a systematic preparation process by the community service team. Preparation includes internal team coordination, preparation of training modules, scheduling activities, and identifying participant needs. The community service team held intensive discussions to design a training format that suited the background and needs of UIN Gusdur Information Technology Study Program students. Based on the results of an initial survey conducted on final year students, information was obtained that most students were not familiar with the PoP application, and most of them still used conventional methods in finding scientific references.

Preparing the module refers to official references from the PoP application developer and relevant supporting literature. The module is organized in a concise and practical form that is easy for students to understand, and it covers fundamental aspects of bibliometrics, how to install the application, usage procedures, and interpretation of results. The module is also structured with a problem-based learning approach so that participants can apply the material to their academic needs, such as preparing final assignments or writing scientific articles.

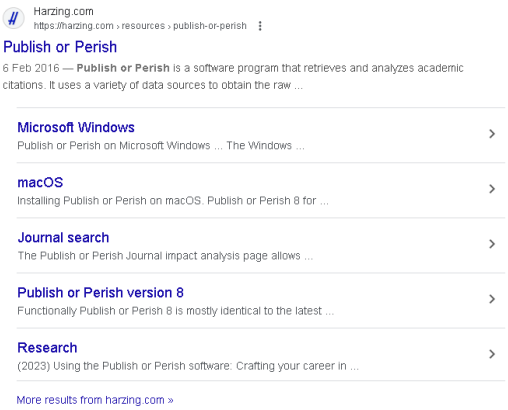

Figure 1. Preparation: Download and Install the PoP Application

Preparation also involves mapping the activity time and resource allocation in terms of resource persons, IT equipment, space requirements, and internet access. The community service team contacted the Study Program to obtain

administrative and logistical support, and selected participants targeted from the final semester students. In addition, the team also prepared an initial evaluation instrument in the form of a pre-test questionnaire to measure students' initial level of understanding of bibliometrics and PoP.

Table 1. Initial survey results used as the basis for PoP training needs

No	Assessed Aspects	Percentage of Students Who Have Not Mastered
1	Understanding of bibliometric concepts	78%
2	Ability to search for citation-based literature	85%
3	Knowledge of the Publish or Perish application	92%
4	Use of metrics such as h-index and i10-index	89%
5	Integration of citation analysis results in writing	81%

Source: Initial survey data from the community service team, 2025

Based on the table above, most students do not have the basic skills to conduct bibliometric analysis effectively. This condition reinforces the urgency of training activities as a targeted educational intervention.

2. Implementation Stage

The implementation stage of the community service activities took three main forms: socialization, education, and practical seminars, all carried out offline on the UIN Gusdur campus. The implementation took place for three consecutive days, with each day focused on one main type of activity. This process was designed so that participants gained conceptual knowledge and practical, hands-on experience.

On the first day, the activity began with a socialization session delivered by the head of the community service team. The socialization aimed to broaden students' insights regarding the importance of bibliometric literacy in scientific writing. The speakers presented global and national studies on the role of citations in academic evaluation, the importance of selecting impact-based references, and the challenges students face regarding limited access and competence with scientific literature. The socialization also presented external speakers from the UIN Gusdur Central Library who explained how publications and citations are measured in the accreditation and academic reputation evaluation system. The participants' enthusiasm was relatively high, as shown through active discussions and the emergence of various questions related to the topics discussed.

The second day focused on technical education in the form of an introduction to the PoP application, theoretically and practically. The educational activity began with an in-depth explanation of the application's working principles, the data sources used, and the types of metrics displayed. The presenter explained in detail about the use of Google Scholar as the primary source, as well as the advantages and limitations of this source. The educational material was delivered using a live demonstration method projected onto the screen, accompanied by independent practice by participants using their respective devices. Students were trained to search by author name, institution, and IT keywords. They were also taught to read analysis results and interpret various metrics, including h-index, g-index, and i10-index.

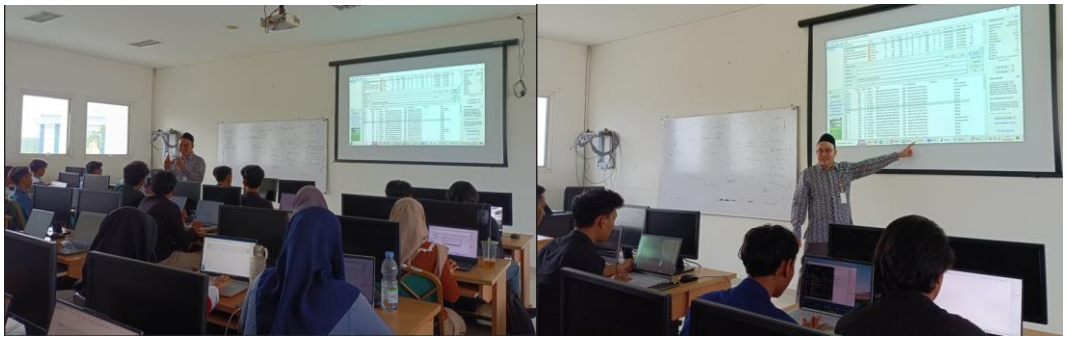

Figure 2. PoP Practical Training

The activity was filled with a case study-based practical seminar on the third day. Participants were divided into small groups and asked to identify a specific topic in Information Technology, then conduct a reference search and citation analysis using PoP. Each group presented their findings, including the researchers with the highest citations in the field, the most influential journals, and publication trends in the last five years. The community service team provided direct feedback on the participants' presentations and suggested how the analysis results could be used as a basis for compiling the background and literature review of the thesis. The effectiveness of the activity implementation can be seen from the increase in the evaluation results carried out before and after the activity.

Table 2. Comparison of pre-test and post-test results of students' bibliometric analysis skills

Assessed Aspects	Pre-Test Average Score	Post-Test Average Score	Percentage Increase
Understanding of bibliometric concepts	54,2	84,6	56%
Understanding the use of the	47,8	86,1	80%

Publish or Perish application			
Ability to read and interpret the h-index	45,0	81,7	81%
Ability to compile a list of references based on citations	49,3	83,2	69%

Source: Results of training participant evaluation, 2025

The data shows a significant increase in students' understanding and skills after the training. Participants generally showed interest and commitment to continue developing these skills independently. Some participants also said that this training provided a new perspective on choosing references and mapping community service topics more strategically.

3. Evaluation and Follow-up Stage

The evaluation stage is an integral part of the entire community service series because it is the basis for measuring the effectiveness of the training and developing sustainable follow-up steps. Evaluation is carried out through three main approaches: process evaluation, outcome evaluation, and follow-up evaluation.

Process evaluation is carried out during the activity by observing participant involvement, discussion activity, and practical session participation. The community service team uses an observation sheet to record student involvement during each session. The observation results show that more than 80% of participants are actively involved in the training process, especially in the case study-based seminar session. Students showed interest in exploring the PoP application further, and some participants even began comparing metrics from various authors and journals they had cited in their theses.

Evaluation of the results was carried out by comparing the pre-test and post-test data that have been explained previously. A significant increase in scores indicates that the socialization, education, and practical seminar methods have improved students' understanding and skills. In addition, the results were evaluated by analyzing participant reflections collected through a feedback questionnaire. Most participants stated that they had never received similar training before and considered these skills relevant to their academic needs. Participants also assessed that the practical approach used in the training made it easier to understand the material, especially in interpreting citation results.

The follow-up activities were carried out by developing strategies for developing bibliometric analysis skills as part of ongoing learning. The community service team gave participants access to digital modules and video

tutorials on PoP. In addition, the team offered limited online consultation services for one month after the training was completed, so that students could still get guidance if they experienced difficulties applying these skills independently. This continued support is essential to ensure that the impact of the training is not only temporary but also contributes to consistently improving students' academic quality. As part of the institutional follow-up, the community service team also proposed to the Information Technology Study Program that similar training be integrated into the Research Methodology or Scientific Paper Writing courses. This is because bibliometric skills and citation literacy are needed in the study of writing theses and in supporting the quality of other scientific assignments. Mastery of applications such as PoP also provides added value for students when they enter the world of academics and more professional community service.

Based on the entire implementation process and evaluation results, it can be concluded that this community service activity has succeeded in answering the initial problems identified in the initial survey. Significant improvements in knowledge and skills indicate that the methods applied are on target. In addition, the success of this activity also shows that students have high enthusiasm for applicable training activities that directly support their academic activities. From a theoretical perspective, this finding supports the view by Harzing (2023) that using bibliometric software such as PoP can increase efficiency and effectiveness in evaluating scientific literature. This is also in line with the statement of Rowley and Slack (2004), which emphasizes the importance of information literacy as the basis for the quality of research and scientific writing. Thus, this community service activity not only provides solutions to students' academic literacy problems, but also contributes to efforts to improve the quality of higher education in the UIN Gusdur environment.

CONCLUSION

Community service activities carried out with a socialization, education, and practical seminar approach in the form of PoP application training have succeeded in answering the problem of low bibliometric literacy among UIN Gusdur Information Technology Study Program students. This activity shows that students still have limited understanding of bibliometric concepts and a lack of skills in using relevant citation analysis tools to support the quality of their scientific writing. Through a structured training process, students understand how to conduct citation-based reference searches, recognize metrics such as h-

index and g-index, and apply them in academic matters, especially in compiling final assignments and scientific publications. The evaluation results showed a significant increase in participants' cognitive aspects and skills in terms of understanding concepts and technical mastery of using the PoP application. This training also showed students' enthusiasm and interest in developing their bibliometric skills independently. The success of the implementation of the activity shows the novelty of the community service approach that integrates bibliometric technology into strengthening students' academic capacity, which has not been widely applied in competency development programs in higher education environments, especially in the field of Information Technology. Based on the results of this activity, the community service team recommends that similar training be integrated sustainably into the curriculum or other academic development programs. Strengthening bibliometric literacy through PoP application training needs to be further developed to become part of students' academic culture, especially in facing increasingly competitive research demands based on quantitative data. Thus, this activity not only answers students' actual problems but also becomes a strategic model for strengthening academic digital literacy capacity in the digital transformation era of higher education.

REFERENCES

Amaliyah, F., Bahruddin, A., Setiawaty, R., Kironoratri, L., & Hidayati, N. A. (2023). Training On The Use Of The Publish or Perish Application To Improve The Quality Of The Scientific Work Of Primary 2 Kesambi Teachers. *Jurnal JAMAS*, *1*(3), 305–309. https://doi.org/https://doi.org/10.62085/jms.v1i3.63

Azmi, M. U., Ramadhani, F. R., Ruba'atin, A., & Fatmawati, W. (2024). Pelatihan Software Publish or Perish, Vosviewer, dan Mendeley untuk Meningkatkan Keterampilan Menulis Karya Ilmiah Ikatan Mahasiswa Tegal. *Smart Dedication: Jurnal Pengabdian Masyarakat*, *1*(1), 81–88. https://ejournal.smart-scienti.com/index.php/Smart-Dedication/article/view/15/12

Dani, R., Veronica, D., Irmanelly, I., & Asrini. (2024). Training On The Use Of The Publish Or Perish (POP) Application To Find Journal References For Students Of Jambi Muhammadiyah University. *ASPIRASI : Publikasi Hasil Pengabdian Dan Kegiatan Masyarakat*, *2*(2), 31–36. https://doi.org/https://doi.org/10.61132/aspirasi.v2i2.423

Falikhah, A. N., Putriningsih, S., Erininda, W., & Hermawan, H. (2025). Meningkatkan Pengetahuan Dan Pengelolaan Keuangan Sejak Dini Melalui Gerakan "Ayo Menabung." *Welfare : Jurnal Pengabdian Masyarakat*, *3*(1), 98–104.

Harzing, A.-W. (2023). *Publish or Perish*. Article. https://harzing.com/resources/publish-or-perish

Hetami, A. A., Bharata, W., & Arija, N. (2023). Training on using "Harzing Publish or Perish" software to search literature and references. *Jurnal Mandala Pengabdian Masyarakat*, *4*(1), 7–12.

Megawanti, P., Andayanti, W., & Ahmad, D. N. (2024). Workshop of Publish or Perish Utilization for Undergraduate Mathematics Education Students. *PengabdianMu: Jurnal Ilmiah Pengabdian Kepada Masyarakat*, *9*(6), 998–1006. https://doi.org/https://doi.org/10.33084/pengabdianmu.v9i6.6809

Putri, W. U., Oktaria, M., & Oktobery, R. (2024). Workshop on the Use of Publish or Perish (POP) Application for Searching Journal References among Students at the University of Palangka Raya. *Jurnal Abdi Kahayan*, *1*(1), 11–18. https://doi.org/https://doi.org/10.37304/jak.v1i1.15974

Sari, D. A. P., Mahfirah, T. F., Muliasari, I., Hidayat, N., Armeliza, D., Dhinanty, R. D., & Putri, R. A. (2024). Pelatihan Dasar Penunjang Artikel Melalui Optimalisasi Penggunaan Aplikasi Publish or Perish dan Mendeley. *Rahmatan Lil 'Alamin Journal of Community Services*, *4*(1), 17–24. https://doi.org/10.20885/rla.vol4.iss1.art3

Thalib, M. A. (2024). Publish or Perish (Pop) Application Training for Sharia Accounting Students. *Jurnal Pemberdayaan Umat*, *3*(1), 1–9. https://penerbitgoodwood.com/index.php/JPU/article/view/2414/824

Yeyendra, Prasetyo, A., Azmi, M. R., Puspitasari, S., & Santika, R. (2023). Pelatihan Aplikasi Software Publish or Perish untuk Guru-Guru Di SMA Negeri 1 Batang Cenaku. *Hawa : Jurnal Pemberdayaan Dan Pengabdian Masyarakat*, *1*(3), 39–44. https://doi.org/https://doi.org/10.69745/hawajppm.v1i3.43