Improving Students' Scientific Writing Skills by Using Reference Management

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INFO ARTIKEL	ABSTRAK
	Keterampilan penulisan karya ilmiah merupakan kompetensi inti dalam pendidikan tinggi, tetapi seringkali mahasiswa mengalami kesulitan dalam mengelola dan mengutip referensi dengan benar. Mengatasi hal tersebut, kegiatan pengabdian masyarakat ini dilakukan melalui serangkaian pelatihan dan praktik, dengan fokus pada penulisan karya ilmiah yang efektif dan penggunaan aplikasi manajemen referensi. Proses pembelajaran menggunakan pendekatan "learning by practice", memungkinkan peserta untuk belajar melalui praktik langsung. Tahap awal melibatkan perencanaan, di mana tim penyelenggara berdiskusi dengan pihak kampus STAH Santika Dharma Malang untuk memastikan kebutuhan peserta dan tujuan pelatihan terpenuhi. Selanjutnya, dilakukan tahap pelaksanaan yang mencakup penyampaian materi, pelatihan dan diskusi interaktif serta praktik nersama dengan narasumber. Tujuan utama dari kegiatan ini adalah memberikan pemahaman kepada peserta tentang penulisan karya ilmiah yang efektif serta manajemen referensi, dengan penekanan pada penggunaan aplikasi seperti Mendeley. Hasilnya, kegiatan ini dinilai telah meningkatkan wawasan peserta pelatihan dalam penulisan karya ilmiah dan manajemen referensi.

ARTICLE INFO	ABSTRACT
	Scientific writing skills are a core competency in higher education, but students often have difficulty in managing and citing references correctly. To overcome this, this community service activity is conducted through a series of training and practices, with a focus on writing effective scientific papers and using reference management applications. The learning process uses a "learning by practice" approach, allowing participants to learn through direct practice. The initial stage involved planning, where the organizing team discussed with the STAH Santika Dharma Malang campus to ensure that participants' needs and training objectives were met. Next, an implementation phase was carried out, which included delivery of material, training, and interactive discussions, as well as collaborative practice with resource personnel. The main aim of this activity was to provide participants with an understanding of effective scientific writing and reference management, with an emphasis on using applications such as Mendeley. As a result, this activity is considered to have increased the training participants' insight into writing scientific papers and reference management.

1. Introduction

The development of academic writing skills is widely recognized as a major educational concern, especially at the university level (Gamage, et.al, 2020). The ability to write effectively scientifically is an important competency for students in higher education, especially in the modern era, which is full of information and rapid scientific development (Goma et al., 2022). On the other hand, one aspect that plays an important role in the process of writing scientific papers is the skill of developing a bibliography and carrying out appropriate citations. Bibliography and citations play an integral role in preparing scientific works (Wardani & Ginantra, 2020). Scientific writing is not just a technical skill but also a means of communicating thoughts, discoveries, and new ideas to the academic and general public (Gastel & Day, 2022). In addition, when writing scientific papers for publication in proceedings, books, or journals, citation style accuracy is required. Citation includes citing research sources or previous scientific works that have been published as references (Patak & Tahir, 2019). Therefore, good reference management is the basis for academic integrity and the avoidance of plagiarism (Vijai et al., 2019).

Thus, reference management is one of the major challenges in writing scientific papers. Reference managers, also known as citation managers or bibliographic management systems or software, are strategic tools used for personal management and the use of article citation information (metadata) and full text (often via portable document format/PDF) (Murphree et al., 2018). Appropriate references support the validity of the argument and provide recognition of previous research that forms the basis of this article. Mendeley and Zotero come into play as invaluable tools. Mendeley, for example, is a reference manager that allows users to store, organize, and search for references using websites, desktops, or mobile devices (Tremblay & Walker, 2019). This tool can also generate an automatic bibliography according to the desired writing style. Zotero, however, has similar features and allows users to synchronize their references online (Esq, 2023).

The advantages of these tools are significant. First, they help avoid human errors in referencing and citing sources, which can lead to accusations of plagiarism. Second, this tool saves time by automating the process of creating a bibliography, freeing authors to focus on the content of the paper. Third, they facilitate collaboration in research and writing, allowing teammates to share references and to work together on a single platform. However, although Mendeley and Zotero offer many benefits, it is important for writers to understand the basic principles of reference management. Knowledge of how to reference various sources, such as books, journals, and websites, is still necessary. In addition, writers must ensure that the information taken from references is interpreted correctly and used appropriately in the context of writing. Overall, the ability to write effective scientific papers and good reference management with Mendeley and Zotero plays an undeniable role in achieving excellence in the academic world. The two complement each other: strong writing skills form the basis of impactful writing, whereas careful reference management ensures that the work is supported by a solid and tested foundation.

Similarly, in higher education, the importance of effective scientific writing skills and correct reference management cannot be ignored. Students are faced with the demand to produce quality written work as part of their academic assignments (Bakhri et al. 2023). However, many students face

difficulties formulating ideas, developing consistent arguments, and presenting research results accurately and systematically in the form of scientific writing (Nurgiansah, 2020). Students often experience obstacles in preparing scientific work regarding appropriate structures and formats as well as procedures for citing and referring to sources of information correctly. On the other hand, reference management is becoming increasingly important as access to various sources of information becomes easier. Students must collect, manage, and reference these sources carefully. However, many of them do not understand the importance of good reference management, so they may be trapped in plagiarism or may have difficulty rediscovering the sources used in their research. In this context, holding training on effective scientific writing and reference management aimed at undergraduate students at the Santika Dharma Malang Hindu Religion College (STAH) is an appropriate step. This community service activity also follows several community service activities in other places that were previously carried out and had an impact on improving the quality of education (Abdul & Muhammad, 2018; Farmasari et al., 2022; Khairina et al., 2020; Tambusai et al. Education ., 2022). Students are the main pillars of the academic world, and providing them with strong writing and referencing skills is an investment in their intellectual development and a bright scientific future. Thus, this training aimed to increase students' insight and knowledge regarding scientific work, reference tools, and their benefits. This is done with the aim that students can create a bibliography automatically according to the citations used in preparing their thesis/final project (Sudjatmiko et al., 2022).
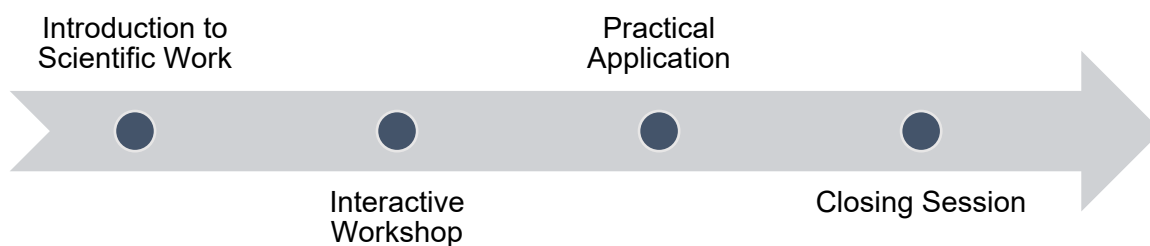
2. Methods

Program Preparation Flow

The team began by designing a training program that focused on scientific writing skills and effective reference management. After the program was well structured, the next step was to submit a request to the Chair of the STAH Santika Dharma Malang Education and Social Foundation to obtain approval for the implementation of the training. In this preparation process, the training materials are carefully structured to ensure that the subject matter is covered well. Furthermore, STAH undergraduate students will receive a special invitation to participate in this training to ensure maximum participation. The training will be carried out through a direct practical approach (practice-based learning) that will take place at the STAH Santika Dharma Malang campus. Finally, evaluating the training results is important. The results and impact of this training will be assessed through an online questionnaire survey, allowing the team to evaluate the effectiveness of the program and make necessary improvements. With this series of steps, it is hoped that the training program will make a positive contribution to improving students' scientific writing skills in STAH Santika Dharma Malang.

Implementation of Activities

Implementation of various training approaches, including workshop sessions, interactive discussions, and practical exercises. Lecturers who are competent in the fields of scientific writing and reference management will facilitate this training. Sessions will be designed in stages, from concept introduction to practical application, to ensure thorough understanding by students. The training was carried out on an effective and concise day on October 3, 2023, at the Santika Dharma Malang Hindu Religion College (STAH), located in Lensapuro Village, Kedungkandang District, Malang City, East Java. This location is also in the same area as Pura Luhur Dwijawarsa in Malang City. The implementation details are as follows:

1. Introduction to Scientific Work: Training begins with a basic material session on Scientific Work. At this stage, the resource person provides a basic understanding of the importance of scientific writing and reference management skills. Students understand the basic framework and objectives of the training.
2. Interactive Workshop: After the introduction of this concept, the training will continue with a series of interactive workshops. In these sessions, students are invited to be actively involved in discussions, case studies, and practical exercises. An open-writing consultation session was held with the resource person.
3. Practical Application: The next stage focuses on practical applications. Students will be given a step-by-step guide on how to perform effective scientific writing and properly manage references using Mendeley reference management. Mendeley was chosen because it is the most popular reference manager among Indonesian academics. The facilitator provides examples of the use of these tools in the context of scientific writing.
4. Closing Session: The training ends with a closing session summarizing everything that has been learned. Students will be provided with additional resources in the form of materials that can be read online to support them in developing scientific writing and reference-management skills in the future.

Figure 1. Implementation Stages

3. Results and Discussion

Overview of science and technology

In the modern era, filled with developments in information and communication technology, the use of Science and Technology (IPTEK) is the key to creating innovative and effective learning. In the training "Training on Effective Scientific Writing and Reference Management for Undergraduate Students at Santika Dharma Malang Hindu Religious College (STAH)," science and technology will be utilized carefully to support the training objectives. Science and Technology will play an important role in introducing students to modern reference management tools. The participants will be introduced to specialized software that can help them organize, manage, and reference references efficiently. This tool not only makes the writing process easier but also minimizes the risk of errors in citing and writing a bibliography. These skills will assist participants in compiling and managing references for their thesis writing, ensuring quality and academic integrity.

Figure 2. Overview of science and technology Activities

Increasing Basic Understanding of Writing Scientific Papers

Training in writing scientific papers begins with a presentation of the material and is carried out in a two-way interactive manner so that participants can immediately consult regarding the difficulties they are experiencing and provide solutions. From the results of a survey conducted on 33 STAH Santika Dharma Malang students before starting scientific work training, several significant factors were related to difficulties in developing the substantive content of scientific work. First, 21.2% of the participants stated that determining the correct problem formulation was one of the main difficulties. This indicates that students often experience difficulties formulating clear research questions or focusing on their scientific work. Second, 15.1% of the participants thought that structuring writing ideas was the main problem. This shows that students may face difficulties in systematically organizing their ideas in their scientific work. Third, as many as 39.3% of the participants experienced difficulty in compiling a well-structured bibliography. This illustrates that managing references and citations may be challenging for most students. Finally, the most striking finding was that as many as 78.7% of participants experienced difficulty finding literature sources that could be used as references. This high percentage shows that access to relevant and high-quality literary sources is the main problem faced by students.
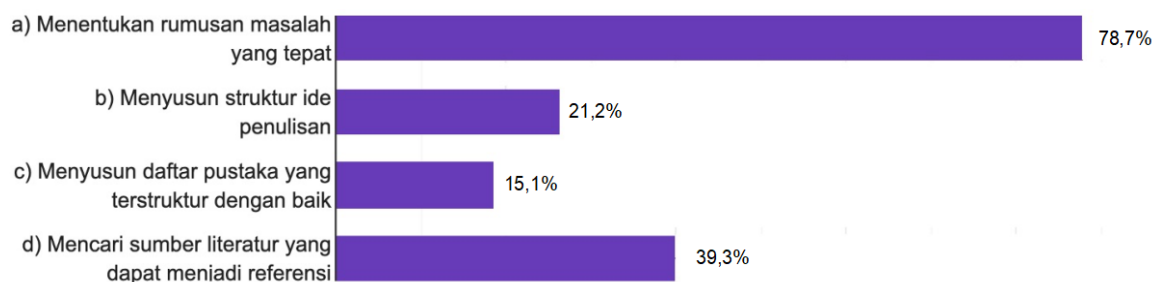

Figure 3. Survey Results of Difficulties Experienced by Training Participants in Writing Scientific Papers

In this context, the scientific work training held at STAH Santika Dharma Malang seems very relevant. A focus on reference management and the ability to source relevant literature can provide concrete solutions to the problems identified in this survey. In addition, training can help students formulate more precise problem formulations and develop better writing structures. Thus, it is hoped

that this training program will provide significant benefits in overcoming the main difficulties in developing the substantive content of scientific work for STAH Santika Dharma Malang students. The main material presented in writing this scientific work includes the following in the table:
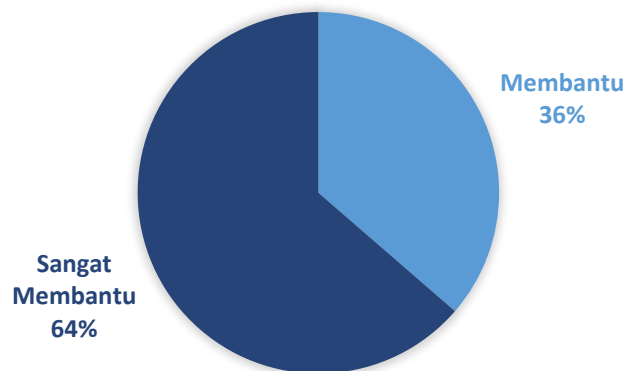
Table 1. Primary Material for Writing Scientific Papers

Material	Details
Introduction to Scientific Work	• Definition of Scientific Work • Characteristics of Scientific Work • Aims and Benefits of Scientific Work
Online Literature Database Source	• Types of Literature Databases • Look for Quality Resources • Use of Search Tools
Developing a Writing Structure	• Introduction • Literature review • Discussion • Closing • Preparation of Bibliography

This increase is also reflected in the increase in the quality of the papers produced by students. The results of the assessment carried out by the research team showed that papers written after training tended to have better structures, stronger arguments, and more accurate references compared to papers written before the training. This shows that training in scientific writing skills using reference management has had a positive impact on students' ability to write high-quality scientific papers.

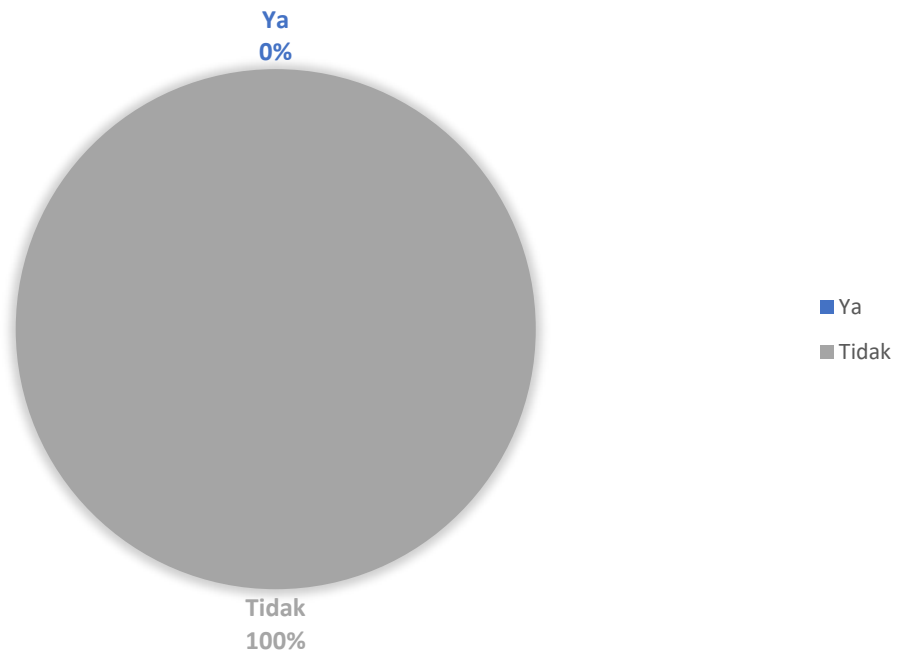**Figure 4. Documentation of Training Activities**

Figure 5. Results of Training Participants' Satisfaction Survey with Community Service Activities

From the survey results regarding the impact of the training on understanding the basic concepts of writing scientific papers and reference management, it appears that the majority of participants (21 out of 33) felt that this training was very helpful. A total of 12 participants also stated that this training only helped at an adequate level. None of the participants thought that the training was helpful. These results indicate that the scientific work and reference management training held had a positive impact on understanding the basic concepts of scientific work writing and reference management among STAH Santika Dharma Malang students. Most participants found the training very useful, indicating that they may have gained a better understanding of how to formulate a research problem, manage references, and cite properly. Thus, the results of this survey show that the training achieved its main objective of improving students' understanding and skills in writing scientific papers and reference management. This can provide a strong basis for continuing and expanding similar training programs in the future to support student academic development. This positive impact indicates that training in scientific writing skills using reference management is effective in developing students' writing skills. This is a very important result, considering that writing scientific papers is a key aspect of higher education that requires good scientific communication skills. Students who are able to write quality scientific papers will have an advantage in their studies and preparation for future professional careers.

Introduction to Reference Management

Before starting the training, the questionnaire distributed by the community service team also aimed to map participants' knowledge of the Mendeley application. From the survey results regarding participants' knowledge of the Mendeley application before attending the training, it can be seen that all participants, namely 100%, stated that they did not know what the Mendeley application was before attending the training. This percentage shows that, before the training, students at STAH Santika Dharma Malang as a whole had no knowledge of the Mendeley application. These data show that the training was very relevant because none of the participants had prior knowledge of the Mendeley application. This emphasizes the importance of training in introducing tools and concepts that are useful for writing scientific papers, such as reference management using Mendeley. These results also show that this training provides a good basis for introducing and educating students about tools
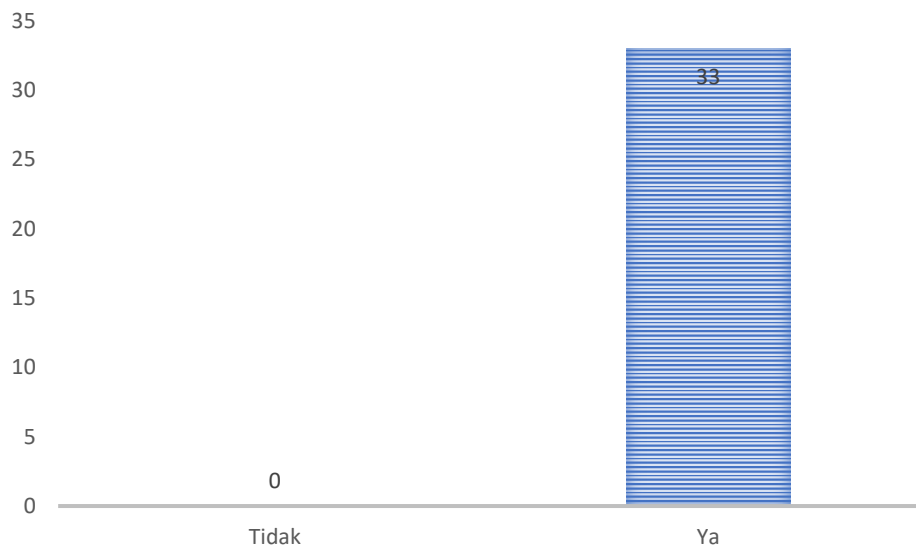
that can improve the quality of their scientific writing, as well as effective reference management. Thus, this training fulfilled its aim of providing a basic understanding to students who initially had no knowledge of the Mendeley application.
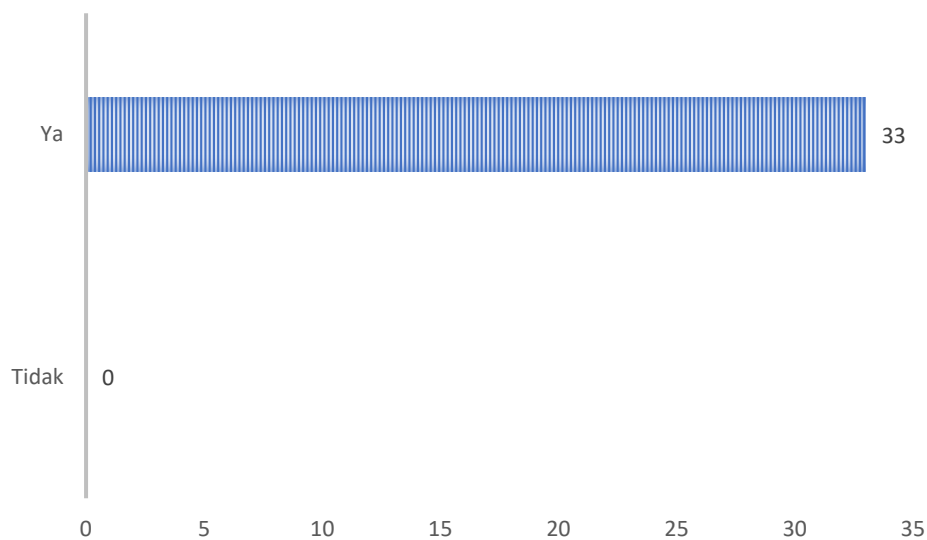

Figure 6. Results of Training Participants' Knowledge Survey of the Mendeley application

Training participants were given and involved in practicing Mendeley, starting from installing Mendeley to using Mendeley in Microsoft Word. Participants who were previously less familiar with reference management tools gained a better understanding of how to use them in writing scientific papers. Students also found this training useful in developing their skills.

Figure 7. Results of training participants ' knowledge survey of Mendeley applications after training

Figure 8. Results of training participants ' knowledge survey of Mendeley applications after training

Participants were asked the question "After attending the training, do you know what the Mendeley application is?" The survey results showed that, after attending the training, all participants (100%) stated that they understood the Mendeley application. This percentage shows that the training was successful in giving students a better understanding of the Mendeley application, which they did not initially know before the training. In addition, the question "Did this training provide new insights or a deeper understanding of scientific writing and reference management?" was also provided, and all participants (100%) stated that this training provided new insights or a deeper understanding of writing

scientific papers and reference management. These results illustrate that the training succeeded in achieving the aim of providing students with a deeper understanding and insight into the basic concepts of writing scientific papers and reference management. This indicates that the training provided significant benefits for students in improving their skills and understanding in writing scientific papers. Thus, these data confirm that the training succeeded in achieving its objectives in educating and providing new insights to students about writing scientific papers and reference management. Overall, the results of this activity show that the training was quite successful in introducing the Mendeley application to students who initially did not know about it, and some also gained a deeper understanding of the concepts of writing scientific papers and reference management. This is a positive indication that training has a positive impact on supporting the academic development of students at STAH Santika Dharma Malang. However, this activity was not without notes, and several participants who were asked for recommendations explained that, to achieve maximum results, students also expected continuous further training.

4. Conclusion

This service activity shows that the implementation of scientific writing skills training, especially the use of reference management, has a beneficial influence on students' skills in both reference management and scientific writing. The influence mentioned above has significant consequences in the world of higher education because it is related to the development of scientific writing skills and the acquisition of reference management skills among students. Higher education institutions have the potential to improve the quality of higher education by offering comprehensive training, faculty assistance, and adequate resources to substantially facilitate the development of students' talent. In additional areas of inquiry, there are many prospects for delving deeper into the consequences of these teaching programs and the variables that exert influence on enhancing students' aptitudes for scientific writing and reference management.

5. Acknowledgements

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