

Research Article

Training on the Use of the Zotero Application to Improve the Quality of Students' Academic Writing at Ma'had Al-Jami'ah, UIN Sheikh Ali Hasan Ahmad Addary Padangsidempuan

Latifah Hanum^{1*}, Yona Riska Amelia², Indah Rahmadani Putri³, Zulhammi⁴

¹⁻⁴ UIN Syekh Ali Hasan Ahmad Addary Padangsidempuan

* Corresponding Author: latifahhanumsrg16@gmail.com

Abstract: Scientific writing is an important competency that must be mastered by students, especially in writing a thesis as a requirement for graduation at the undergraduate level. One of the problems often encountered is the weak ability of students to manage references and compile citations in accordance with academic rules. This condition has the potential to reduce the quality of scientific work and violate the principle of academic integrity. Therefore, this community service activity aims to improve students' understanding and skills in reference management through socialization of the use of the Zotero application. This activity was carried out at the Syekh Al-Hasan Ahmad Addary State Islamic University in Padangsidempuan, involving 45 students as participants. The methods used were socialization and training, which included the delivery of conceptual material on scientific writing and citations, as well as practical assistance in using the Zotero application. The results of the activity showed that students gained a better understanding of the importance of reference management and were able to recognize the use of Zotero as a tool to systematically compile citations and bibliographies. The output of the activity was a Zotero usage guide document that can be used as a supporting reference in writing scientific papers. This activity contributes to improving students' academic and digital literacy and supports efforts to prevent plagiarism in the university environment.

Keywords: Academic Integrity; Digital Literacy; Scientific Writing; Students; Zotero Application.

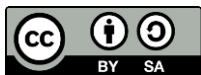
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1. Introduction

Scientific writing is an academic competency required for university students (Heriyudananta, 2021; Rakedzon & Baram-Tsabari, 2017b). Scientific writing not only serves as a means of conveying scientific ideas but also serves as an indicator of a student's academic achievement during their higher education. At the undergraduate level (S1), students are required to write various forms of scientific work, such as papers, research reports, scientific articles, and even a thesis or final project, which is a primary requirement for graduation.

Theses and final assignments are crucial because they demonstrate a student's ability to comprehensively apply theory, research methods, and academic ethics. Through theses, students are required to scientifically analyze problems, utilize relevant sources, and present their findings systematically and responsibly. Therefore, the quality of scientific writing, particularly in terms of citations and bibliography, is an integral part of academic assessment.

However, in practice, many undergraduate students still encounter challenges in writing scientific papers, particularly in the technical aspects of writing. Citation errors, inconsistent bibliography formats, and improper use of sources are still common in student papers and

theses. Chien, (2025) Proper citation is an important part of academic integrity because it demonstrates scientific honesty and respect for the work of others.

Several experts state that the low quality of students' academic writing is often caused by a weak understanding of citation techniques and reference management. (Chien, 2025; Rakedzon & Baram-Tsabari, 2017a) explained that citation errors and inconsistencies in bibliographies remain common problems in student writing. This situation not only impacts academic quality but also has the potential to lead to plagiarism, both intentional and unintentional, which can hinder the completion of studies (Fatemi & Saito, 2020; Moss et al., 2018).

Based on these conditions, mastery of reference management has become an urgent need in the academic world, especially for students who are writing theses and final assignments. Along with the development of digital technology, the academic writing process has undergone a significant transformation (Jiang et al., 2013). Various reference management applications have been developed to help authors manage reference sources more systematically and efficiently. One application that is widely used in the academic environment is Zotero. Zotero is an Chien, (2025); Zahro' et al. (2025) open-source reference management software that can help authors collect, store, manage, and organize citations and bibliographies automatically according to a specific writing style.

Zotero excels in ease of use, integration with various browsers, and compatibility with word processing software like Microsoft Word . Furthermore, Zotero allows users to store references in various source formats, such as journals, books, proceedings, and online sources. However, Zotero's use among students, particularly undergraduates, remains relatively low. This is due to limited knowledge and a lack of training in using reference management applications. Based on initial observations, most undergraduate students still compile citations and bibliographies manually, which can potentially lead to formatting errors and inconsistencies. This situation highlights the need for mentoring and outreach efforts to improve student academic literacy, particularly in the use of applications to support scientific writing (Ferez, 2005).

In the context of higher education, writing scientific papers is inseparable from students' academic demands (Jaya, 2025; Scholtz, 2018). Scientific works such as papers, articles, research reports, and even theses or final assignments are academic products that students must produce as part of the learning process and are one of the main requirements for completing undergraduate studies. The thesis, in particular, is seen as the culmination of students' ability to integrate the knowledge, methodological skills, and academic ethics acquired during their studies.

However, the reality on the ground shows that many students still experience difficulties in compiling scientific papers systematically and in accordance with academic principles. These difficulties relate not only to problem formulation and research methods but also to technical aspects of writing, particularly the use of citations and bibliography. However, accurate citations and consistent bibliography are important indicators of the quality of scientific papers and are one of the assessment aspects in the preparation of theses and final assignments.

Inaccurate citations in student academic work are often caused by a limited understanding of scientific writing styles and a lack of mastery of academic writing tools. In many cases, students still copy references manually without paying attention to proper formatting, potentially leading to spelling errors, inconsistencies, and even violations of academic ethics. This situation indicates that students need guidance that is not only conceptual but also practical and applicable.

Therefore, utilizing reference management applications like Zotero is highly relevant in supporting students' scientific writing process, particularly in the preparation of theses and final assignments. Using Zotero, students can manage reference sources more efficiently, automatically compile citations and bibliographies, and minimize technical writing errors. Mastering this application is expected to help students meet academic demands and complete their studies on time.

As a form of academic contribution and strengthening scientific writing literacy, students of the Master's Program (S2) Department of Islamic Religious Education (PAI) conducted a socialization activity on the use of the Zotero application to undergraduate students. This activity focused on introducing the importance of citations in scientific works, especially theses and final assignments, as well as basic practices in using Zotero as a supporting application for academic writing. This article is written to describe the background, implementation, and results of this socialization activity as a form of scientific work based on academic activities.

2. Research Methods

The community service activity was held on November 23, 2025, at the Syekh Al-Hasan Ahmad Addary State Islamic University, Padangsidempuan. This activity was held in the Auditorium of the Syekh Al-Hasan Ahmad Addary State Islamic University, Padangsidempuan, and was attended by 45 students who were currently studying in their final semester. The community service activities carried out by the team include socialization of the use of the Zotero application and the steps for implementing the service at each stage, namely First, the socialization of the use of the Zotero application. At this socialization stage, the importance of using Zotero in academic writing by emphasizing the benefits to be obtained, such as efficiency in reference management and ease of citation. Next, conducting a live demonstration on how to download, install, and set up a Zotero account including the Zotero connector. Showing how to import references from various sources (e.g. journals, books, websites), organizing them into folders, and integrating them with word processors such as Microsoft Word. Providing assistance to participants for direct use of Zotero, from adding references to creating a bibliography. A question-and-answer session was then held to address any issues students might encounter when using Zotero. This activity employed two methods: first, providing material related to the Zotero application and then providing guidance on how to use it.

3. Results And Discussion

Students at the Syekh Al-Hasan Ahmad Addary State Islamic University in Padangsidempuan are required to be able to write quality scientific papers as part of fulfilling academic standards, especially in completing their final assignments (thesis). One important component in writing scientific papers is the ability to manage references appropriately. The use of reference management applications such as Zotero is a strategic factor in improving the quality of students' scientific papers, as it helps authors compile citations and bibliographies in a structured, consistent manner, and in accordance with applicable academic rules. In addition, mastery of reference management applications also contributes to minimizing plagiarism and maintaining academic integrity in scientific writing.

The urgency of promoting the use of Zotero is growing stronger based on initial observations showing that most students at the Syekh Al-Hasan Ahmad Addary State Islamic University in Padangsidempuan still lack adequate reference management skills. Many students still compile citations and bibliographies manually, resulting in frequent formatting errors and inconsistencies with established citation styles. This situation directly impacts the quality of scientific writing, particularly theses, which are a primary requirement for graduation at the undergraduate level. Therefore, implementing this outreach activity through a community service program is expected to be an alternative solution to improve student competency in academic reference management.

This socialization activity was attended by 45 students. The event was organized by postgraduate students from the Department of Islamic Religious Education, who possess competency and experience in academic writing and reference management. The event focused not only on delivering conceptual material but also on practical guidance in using the Zotero application as a reference management tool for writing scientific papers.

Implementation of Socialization Activities

This community service activity was carried out in the form of socialization and training on the use of the Zotero application for undergraduate students (S1). The socialization was carried out in a structured manner through several stages, starting with the delivery of conceptual material regarding scientific writing, the importance of citations, and academic ethics. In the initial stage, students were given an understanding of the role of citations in scientific work, particularly in writing papers, scientific articles, theses, and final assignments as a requirement for graduation. In this session, participants were introduced to the basic concepts of reference management and how these skills can be applied to improve the quality of scientific writing. The main focus was given to understanding and using Zotero to manage references efficiently, prevent plagiarism, and ensure accuracy and consistency in bibliography creation.



Figure 1. Preparation for Socialization Activities.

This introduction to the Zotero application, a reference management software tool that can be used to support academic writing. The introduction includes an explanation of Zotero's main functions, the application's advantages, and its relevance in helping students automatically compile citations and bibliographies. The material is presented systematically and accompanied by examples of its application in scientific writing.

Zotero Application Usage Socialization Process

In the core phase of the activity, undergraduate students were given a hands-on demonstration on how to use Zotero. The practical material covered the installation process for the Zotero application and browser connector, how to add references from various sources (journals, books, and online sources), grouping references in folders, and integrating Zotero with word processing software. Students were also introduced to various citation styles commonly used in academic writing.

Through a comprehensive understanding of the various features available in the Zotero application, participants are expected to be able to manage references more efficiently, thereby saving time in the scientific writing process. Utilizing Zotero also contributes to improving the credibility and quality of the resulting scientific work. Furthermore, using this application supports academic integrity by helping authors systematically and accurately record reference sources, thus minimizing the risk of plagiarism.



Figure 2. Introduction to the Zotero Application.

During the socialization process, students demonstrated considerable enthusiasm, as evidenced by their active participation in demonstrations and questions related to Zotero's use. The activity also included a Zotero user guide document that students could use as self-study material after the event.

To strengthen participants' understanding, the learning session also included an interactive discussion. Participants were given the opportunity to express various problems they encountered in creating bibliographies and citations, which are still done manually. In this phase, students were provided with guidance on using the Zotero application to manage references and citations more efficiently. They were taught how to import references, automatically compile bibliographies, and cite them in various formats. These discussions allowed participants to share experiences and help each other overcome the challenges they faced. This approach proved effective in both outreach and mentoring, as participants demonstrated high levels of enthusiasm throughout the activity.



Figure 3. Q&A Session.

Community Service Activity Results

The results of this community service activity demonstrated an increased understanding by undergraduate students regarding the importance of citations and reference management in scientific writing. Students gained new knowledge regarding the use of the Zotero application as an academic tool that can facilitate the process of compiling citations and bibliographies, particularly in writing theses and final assignments.

The main output of this activity is a systematically compiled Zotero socialization document and user guide. The document includes a basic explanation of citation concepts, steps for using Zotero, and examples of its application in scientific writing. It is hoped that this output will be continuously utilized by students as a supporting reference in completing academic assignments.

4. Conclusion

The socialization of Zotero application usage conducted by Islamic Religious Education (PAI) Master's students to undergraduate students went well and resulted in a Zotero user guide document. This activity provided undergraduate students with an initial understanding of reference management and the importance of citations in scientific writing. In the future, similar activities can be developed into advanced training accompanied by evaluations to improve the quality of students' academic writing.

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