



ANALYSIS OF STUDENT COMPETENCE IN WRITING SCIENTIFIC PAPERS BASED ON INFORMATION TECHNOLOGY (IT)

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Abstract

Globally, this article is related to students' competence in writing articles. This article aims to describe the content of scientific works as the product of the writing learning process based on information technology (IT). A qualitative descriptive method is used to analyze the data, with its application adapted to the guidelines of the conceptual study and theory of the writing process, writing needs analysis for scientific works, and empirical studies on the current conditions of IT-based scientific writing learning. The data analysis techniques in this research involve data reduction, data presentation, and conclusion drawing. The research findings indicate that, in general, students are still categorized as not fully understanding information technology on one hand. However, the scientific works in the form of articles and theses were rated as "good" based on 10 indicators of scientific work assessment. Meanwhile, the use of Bahasa Indonesia in communicating arguments, ideas, and main issues was classified as effective, as the choice of words, sentence usage, and paragraph structure met the requirements for proper and correct language use.

Keywords: Writing competence, scientific works, and academics

INTRODUCTION

A scientific paper is a written report that is commercialized by presenting the results of research. This work is carried out by an individual or a team while adhering to the standards of scientific principles and ethics that are recognized and followed by the academic community ([Munthe, 2009](#); [Narotzky, 2016](#); [Ouane, & Glanz 2011](#)). Various types of scientific papers are produced by numerous authors, such as research reports, seminar or symposium papers, journal articles, theses, dissertations, and other academic products. These all represent the outcomes of scholarly activities ([Sunindyo, et al.,2011](#); [Syamsuddin & Vismaia, 2006](#)). Theories, field data, conclusions, and information presented in these works often serve as references for other scholars conducting research or analysis. In brief, this work is interpreted as an original research publication presented in a form that allows for experiment repetition and conclusion verification, typically published in journals or other sources available within the academic community ([Abdullah, 2004](#)). University students, especially those at the undergraduate level, are trained to write academic papers such as articles, essays, and theses. Similarly, at the graduate and postgraduate levels, students are trained to present tasks in the form of articles, essays, theses, and dissertations, all of which must be completed as scientific work. Academic papers, such as essays, are

usually assigned to students as a conclusion and scientific thinking based on the review of works written by experts in a specific field of study. Meanwhile, laboratory reports are assigned to develop students' skills in preparing research reports. In some cases, when students conduct laboratory work, they are essentially verifying the research process conducted by previous scholars. Laboratory activities are designed to train basic research skills. Theses, dissertations, and final projects are smaller-scale research reports, but conducted in a more in-depth manner.

The product of scientific work represents one of the writing skills that require a highly complex use of language. Many individuals, including students, face difficulties in mastering the skill of writing. Empirical data from preliminary studies conducted by [Cahyani \(2005\)](#) show several reasons why students struggle to write scientific papers, such as fear of starting or making writing mistakes. Students often find it difficult to identify problems, conclude, organize essays, develop paragraphs, arrange language effectively, construct sentences, select appropriate vocabulary, and apply proper writing techniques. [Syamsuddin \(1994\)](#) identifies the difficulties students face when writing scientific papers, particularly in communicating key issues, determining, and expressing them. [Blumner \(2008\)](#) explains that the shortcomings of a paper often lie in its language aspects and writing techniques. Novice writers frequently struggle with organizing syntactic structure or grammar, particularly in vocabulary selection and sentence construction, leading to inconsistencies in the presentation. [Kellog \(2008\)](#) notes that learning to write a cohesive, coherent, and effective text is a challenging achievement for writers because literacy and cultural achievements are often not formally taught. Writing proficiently involves not only a mastery of language systems but also requires sufficient linguistic experience and knowledge, along with various interconnections to other fields of knowledge, which poses a unique challenge to cognitive systems in memory and thinking.

Writing a scientific text is often considered a form of problem-solving composition. The content issue what will be communicated and the rhetorical issue how to present it are significant concerns that occupy the writer's working memory. In line with this, [Rijlaarsdam \(2008\)](#) explains that writing difficulties arise due to a shift in perspective, where language as a communication tool transitions from being learned as a system to becoming more communicative, logical, and systematic. This means that learning shifts from knowledge acquisition to a process of participation.

Students are often categorized as struggling with writing essays. [Freyhofer \(2008\)](#) suggests that students tend to dislike writing skills lessons, especially essays. They feel bored when given the task of writing an essay. Writing an essay is an unavoidable challenge. A student's challenge in writing an essay is overcoming various problems. One way to address this is by providing motivation from the instructor. Motivation not only helps students but also inspires them to overcome challenges.

Observations show that the content of students' scientific papers often fails to meet the criteria for a complete scientific work. Students' papers are sometimes written only based on literature and lack field data. They rarely utilize empirical data based on actual facts. [Sudjana \(1995\)](#) argues that a good paper should contain both rational and empirical data. Therefore, a paper should include both literature research findings and field research results. Thus, the content of a paper should present literature studies from various sources, including works with national and international reputations in the form of books, magazines, tabloids, internet

communication networks, as well as field studies based on facts that develop in society and supported by the opinions of informants. Etty Indriati (1992) states that writing is a primary task for all academic communities, particularly those who have chosen education and research as their life's calling. The competence of a scholar is measured by the quality and quantity of their scientific works. A scientific paper is the intellectual offspring of an academician, which will remain in the archives of literature long after they are gone. Through their written works, they are known by their contemporaries and future generations. Therefore, scientific communication is the most essential method for advancing and disseminating knowledge. Regarding the position of scientific writing skills in higher education, [Alwasilah & S Suzanna \(2005\)](#) conducted research involving 100 students in Bandung. He revealed that respondents viewed writing skills as the most crucial requirement in fulfilling the need for teaching Indonesian in universities; the writing skill they most wished to master was writing essays. However, the current Indonesian language courses have not maximized their role in improving academic writing skills.

Writing scientific papers is considered a crucial issue because writers often make mistakes. In this regard, [Nurgiantoro \(1995\)](#), states that "common errors in language use occur in proposals or research reports for undergraduate students and in final project reports for diploma students, which include: spelling errors, language errors, content errors, analysis errors, errors in translating analytical results, and conclusions. Errors in research, especially from proposal preparation to research reporting, must avoid plagiarism by adhering to institutional guidelines."

The gap between previous research and this study lies in the insufficient significant impact of Indonesian language courses on improving scientific writing skills, particularly in writing essays and theses, as found in [Alwasilah & S Suzanna \(2005\)](#) study. Additionally, common errors in scientific writing, such as language mistakes, analysis errors, and plagiarism, are still prevalent, as noted by [Nurgiantoro \(1995\)](#). This gap motivates the present study to address these issues by focusing descriptively on the importance of the process of generating scientific work as an IT-based learning outcome for students in higher education. This study aligns with [Joyce et al. \(2000\)](#), who argue that IT-based learning can enhance students' ability to produce high-quality academic work. This research is significant due to the increasing prevalence of IT programs on various online platforms, particularly those offering ready-made writing courses for students. Thus, the primary focus of this paper is to observe "the quality of the content of student essays and theses as a result of their scientific writing skills." The main issues addressed include: first, how is the content of IT-based essays and theses of students at IAIN Ambon? Second, is the use of Indonesian effective in communicating the content of these scientific works?

LITERATURE REVIEW

A number of research studies indicate that academic writing has become a fundamental issue that needs to be verified by writers and researchers, especially those involved in research at higher education institutions today. Research on academic writing issues aligns with the findings of [Nurgiantoro \(1995\)](#), who examined assessments in language and literature teaching, as well as the study by [Gipayana \(2002\)](#), which explored literacy teaching and portfolio assessment in writing instruction. Gipayana also investigated the effectiveness of step-by-step writing instruction and portfolio assessment on students' writing skills as an

experimental study in writing classes in Malang City ([Gipayana, 2002](#)). Additionally, [Suherli \(2002\)](#) examined the development of a literary model to improve writing instruction.

Based on their research findings on the ability to write papers, it is noted that students experience progress. Field data reveals various creative approaches, particularly when engaging with different groups in society. Ultimately, in addition to acquiring research skills, students feel capable of becoming good editors when trained in correcting papers on aspects such as spelling, word choice, sentence structure, and paragraph creation. According to their research, the findings generally have implications for writing instruction and specifically for the General Indonesian Language Course (MKU BI). The implications for research suggest that research-based academic writing instruction can be utilized as a model for academic writing teaching in university courses. The research-based academic writing instruction process is formulated based on research findings with the principles of active, cooperative, and participatory learning for students ([Djuharie & Suherli, 2001](#); [Gunarwan, 2011](#)).

Research-based academic writing instruction can improve critical reading skills. The tasks of writing papers and theses are closely related to reading activities, as the development of writing must be supported by adequate references. Through reading, a wealth of information, knowledge, and ideas beneficial to writing can be obtained. Therefore, every writer must critically engage with reference materials. Critical reading results in summaries of the material read, as well as critical comments on ideas and concepts within the reading, accompanied by relevant citations. Thus, critical reading for writing is essentially reading to obtain relevant and necessary information for the writing being developed. Research-based academic writing and thesis writing instruction can alter scientific paradigms. The research-based academic writing and thesis writing model has implications for the process of seeking scientific truth. This model equips students with scientific process skills, fosters creative spirit, promotes independence or autonomy in learning, encourages tolerance for uncertainty, and nurtures the tentative nature of knowledge ([Borg & Gall, 1979](#); [Bühmann & Trudell, 2008](#)).

Language and Discourse in Scientific Works

When the review team examines proposals and reports of research findings, questions arise simultaneously ([Muno & Brand 2014](#)). How does a researcher reviewer perform their task in reviewing a scientific work? Do they focus primarily on substance and critique, while neglecting the linguistic analysis of the work itself to produce a qualified research outcome? A senior researcher at the Indonesian Institute of Sciences (LIPI), provided an overview that both of these issues are important. He emphasized that while the substance and the various issues of the scientific work should be given priority, reviewers must also consider how the language is used correctly and effectively to communicate the content of the work. Even for reviewers of reputable scientific works indexed in Sinta and Scopus, their tasks include: 1) Evaluating the Quality of Scientific Work: - Assessing the originality, novelty, and contribution of the scientific work to the field of knowledge, - Evaluating the methodology, data analysis, and the conclusions drawn., 2) Assessing Accuracy and Validity: - Evaluating the accuracy and validity of the data, methods, and analyses used, - Determining whether the conclusions are supported by strong data and

analysis, 3) Providing Constructive Feedback to Authors: Identifying the strengths and weaknesses of the work and offering suggestions for improvement. 4) Maintaining Publication Quality: - Ensuring that published scientific works meet high standards of quality, - Contributing to the integrity and reputation of scientific journals. 5) Following Standards and Ethics: - Adhering to the applicable standards and ethics of scientific publication, - Maintaining confidentiality and anonymity during the review process ([Cahyani \(2005\)](#)). Thus, reviewers of reputable scientific works indexed in Sinta and Scopus play a crucial role in maintaining the quality and integrity of scientific publications. In line with this, besides the importance of addressing the substance of research, the language used to communicate the discourse of a research study becomes equally significant. Language is the most essential medium for conveying research discourse. It is important because it is used to express thoughts, ideas, feelings, desires, and human actions ([Crystal, 2000](#)). Therefore, even though language is learned from a young age, including the first language, second language, and even foreign languages, language proficiency must still be continuously improved by studying and understanding its development.

The Function of Language in Scientific Discourse

The function of language used in scientific works can be viewed from the perspective of its linguistic analysis. While some linguists focus on determining the formal properties of a language, discourse analysts of scientific works are responsible for investigating how this language function is utilized. The function of language can be examined from various perspectives. Brown and Yule describe the function of language as 'transactional function,' which is used to express and explain the substance or "content," and the 'interactional function,' which involves expressing social relationships and personal attitudes. These distinctions generally align with the dichotomies of 'representative/expressive' functions in [Bühmann & Trudell, \(2008\)](#) 'referential/emotive' functions in Jakobson 'ideational/interpersonal' functions in Halliday and 'descriptive/social-expressive' functions in Lyons .

In this regard, linguists and philosophers of language tend to follow an approach focused on the functions of language within society. While society recognizes that language is used for communication purposes, there is a general assumption that the most important function of language is the transmission of information. Lyons argues that the conveyance of factual or proportional information is intentionally focused on communicating feelings, moods, and attitudes. Thus, according to Lyons the primary use of language is directed toward delivering factual and proportional information. On the other hand, Bennett views the function of language as the speaker's effort to inform the listener or instruct them to do something. Therefore, language used to convey 'factual or proportional information' is primarily transactional, especially when the speaker (or writer) is concerned with effective information delivery. The language used in such situations prioritizes the message, ensuring the recipient receives the correct details. If a scientist describes an experiment, for example, the writer makes their statements clear in writing. If the message conveyed is not understood correctly by the recipient, it could lead to unpleasant consequences or even disastrous outcomes in the real world ([Herschinger, 2012](#)).

The Meaning of Text and Discourse Context in Academic Works

The term 'text' as a printed record has been recognized in various studies, including those in the realms of language, literature, and other dimensions. A text can be presented differently in various editions, with different fonts, paper sizes, and formats such as single or double columns. Despite these differences, from one edition to the next, these presentations are still considered to realize the "same" text. It is important to note that the "same" text must, at the very least, have the same words and be presented in the same order. Where there are readings of a text whose accuracy is in doubt, editors and reviewers often feel obligated to provide commentary on the most difficult parts for readers to understand. A proper realization of a text involves placing words in the correct letters, choosing appropriate words or diction, using effective sentences with proper language structure and grammatical rules, and constructing cohesive and coherent paragraphs that connect one to another. Thus, the structure and stages of the work as organized by its author must be preserved ([Ross, 2007](#); [Schieffelin, & Ochs, 1986](#)).

In understanding the meaning of a 'text' in discourse, it must be considered that a 'text' can be both 'written' and 'spoken.' Written texts are regarded as a verbal record of communicative acts. Textual meaning is one of three metafunctional meanings. The other two metafunctional meanings are ideational meaning and interpersonal meaning. Metafunctional meaning is the meaning that is simultaneously constructed from three language functions: ideational function, interpersonal function, and textual function. The ideational function reveals physical and biological realities and relates to the interpretation and representation of experiences. The interpersonal function reveals social realities and concerns the interaction between the speaker/writer and the listener/reader. Meanwhile, the textual function reveals semiotic/symbolic realities and concerns the way a text is created within a context ([Riera-Gil, 2018](#); [Robert, 1981](#); [Rodenberg, & Wagenaar, 2018](#)). The meanings within these three functions are called ideational meaning, interpersonal meaning, and textual meaning. Thus, metafunctional meaning encompasses these three types of meaning, and its realization within a text can be seen through the elements of lexicogrammar—the way words are arranged along with all their consequential meanings in forming its register, which is the variety of language influenced by the situational context surrounding the main issues expressed in the text, thus forming a type of text in a specific cultural context (genre). Therefore, textual meaning can be expressed in various ways and its meaning can be analyzed through thematization, lexical cohesion, referential chaining, and text structure ([Tardy, 2011](#)).

Textual Meaning

As one of the metafunctional meaning domains, textual meaning arises from the combination of ideational function and interpersonal function. Textual meaning refers to the meaning that results from the realization of lexico-grammatical elements, which serve as the medium for the realization of a text, whether written or spoken, that is coherent and appropriate to a particular situation when the language is used, with a periodic structure ([Ivanova, 2011](#); [Jacobs, et al. \(1981\)](#)). According to them, a text is a linguistic unit that is mediated in written or spoken form with a certain organizational structure to express meaning in a particular context. It can be emphasized that a text has several characteristics as follows: (1) a text is a linguistic unit; (2) a text has a cohesive organizational structure; (3) a text conveys meaning; (4)

a text is created within a context; and (5) a text can be mediated in written or spoken form.

The terms "text" and "discourse" are considered synonymous and are used interchangeably by Martin, although there are some opinions that distinguish them, as expressed by Cook. A text refers to the physical form, whereas discourse refers to meaning, as stated by Nunan. In both text and discourse, it is believed that form and meaning are complementary; meaning is revealed through form, and therefore, different forms indicate different meanings. Technically, discourse is more abstract and represents the realization of meaning from a text. Martin considers the meaning at the discourse level as discourse semantics. Therefore, although text and discourse can technically be distinguished, in practical analysis, they do not need to be separated, as Martin suggests. At the level of word groups and clauses, textual meaning is expressed through thematization, relationships of meaning through repetition, synonymy, antonymy, hyponymy, co-hyponymy, meronymy, and co-meronymy to express lexical cohesion. At the discourse level, textual meaning is expressed through lexical chaining, reference connections, accumulation of Theme-Rheme arrangements at the clause level, Hypertheme/Hyper-rheme at the paragraph level, and text structure. Textual meaning at the discourse level is essentially about how a text is organized and mediated to produce a work, whether in scientific or fictional form ([Kumar, 2010](#); [Maags, 2018](#)).

RESEARCH METHODS

This study employs a qualitative approach. Qualitative research is a scientific method used to understand a social phenomenon or event by providing a detailed description that aligns with the research theme being studied. In this qualitative research, the researcher adopts a document study approach. The data being researched or analyzed consists of papers and theses. The data sources for this study are 30 papers from scientific writing courses in the Indonesian Language subject and 10 theses from students of IAIN Ambon, Class of 2024. The research subjects were selected from three different programs and faculties: the English Education Program at the Faculty of Tarbiyah and Teacher Training, the Comparative Law Program at the Faculty of Sharia, and the Islamic Economics Program at the Faculty of Economics and Business, from the first semester of the 2024 academic year at IAIN Ambon. Data collection techniques involve reading and note-taking. The researcher conducted intensive readings and took notes on parts of the papers and theses. Data analysis techniques include data reduction, data presentation, and drawing conclusions.

DISCUSSION

Based on the entire research process, the findings of this study are highly beneficial and valuable as a solution for the development and enhancement of students' writing competencies, particularly in academic writing courses at universities, especially at IAIN Ambon. The results of this study include a description of the implementation of research-based academic writing instruction as a form of behavior change among students in the process of improving their academic writing skills, specifically in writing papers and theses. The research findings indicate that:

First, the process of writing research-based academic works generally consists of a text product with ten evaluation criteria indicators, including: Background, Problem Formulation, Objectives and Benefits, Theoretical Framework, Approach, Research Methods, Literature Review, Discussion Systematics, Presentation, and Conclusion. These criteria were then identified, research strategies were determined, data was reproduced through data verification activities and conclusions were drawn, revised, and ultimately resulted in an academic paper or thesis.

Second, based on the treatments and development of the research, it was found that students' academic writing skills were still low, particularly in terms of the content aspect of the academic work, the organization of the substance within the academic writing through language elaboration, including: spelling usage, word choice (diction), sentence and paragraph structure, and the formatting of academic writing. In this case, students were found to lack understanding of theoretical frameworks and the structure of academic works. Based on the analysis, many students were still unfamiliar with the characteristics of academic writing, such as using formal language, maintaining consistency or objectivity, being meticulous, and respecting others' work, including proper citation methods from various sources. Furthermore, they had limited understanding of the structure of academic writing, such as in the introduction, content, and conclusion chapters. Even in terms of formatting, students frequently made mistakes, especially in writing titles, subtitles, author identification, numbering and page placement, and referencing in footnotes and bibliographies. Additionally, from the content aspect of academic writing, students were found to be less thorough in presenting empirical facts and relating or organizing them according to the theoretical foundation based on references. They still lacked understanding of how to obtain material related to the substance of the problem, resulting in academic writing that was often based on readily available knowledge or, in some cases, entire sections of text copied from reference books or downloaded from the internet. Finally, students' academic writing skills were considered to have improved, particularly in addressing the weaknesses observed, especially in the language aspect. Language-related issues were improved, particularly in paragraph organization, sentence effectiveness, word form accuracy, and spelling application.

Data Analysis of Research Results

The research data, which pertains to the implementation of the process of writing scientific papers based on research, was analyzed using qualitative descriptive analysis. The data were described by interpreting all data from the frequency distribution results and the presentation of scores from all research respondents. The entire research data was analyzed in a detailed and systematic manner, then interpreted according to the type of data. The interpretation data is presented in the following analytical explanation.

Paper Data Analysis

In detail, the data consists of texts from 30 papers, with 10 papers from each faculty. This data can be observed in Table 1 below:

Table 1
Recap of All Data Results from the Evaluation of 30 Papers by IAIN Ambon Students

Data Results	Assessment Criteria and Standard Percentage				
	Introduction	Argument Quality	Use of evidence	Presentation	Conclusion
	15 %	40 %	25 %	10 %	10 %
Paper T.1- T.10	5:0	5:0	5:0	5:0	5:0
	4:1	4:0	4:0	4:0	4:0
	3:3	3:6	3:3	3:5	3:6
	2:4	2:4	2:7	2:4	2:3
	1:2	1:0	1:0	1:1	1:1
Paper S.1- S.10	5:0	5:0	5:0	5:0	5:0
	4:2	4:0	4:0	4:0	4:0
	3:5	3:6	3:3	3:7	3:3
	2:1	2:4	2:5	2:3	2:6
	1:2	1:0	1:2	1:0	1:1
Paper UD.1- UD.10	5:0	5:0	5:0	5:0	5:0
	4:0	4:0	4:0	4:0	4:0
	3:2	3:4	3:5	3:5	3:3
	2:6	2:6	2:4	2:3	2:5
	1:2	1:0	1:1	1:2	1:1

Based on the standards and assessment criteria adopted from Bermawi Munthe, of the 30 student papers from IAIN Ambon that have been analyzed and evaluated according to several indicators such as introduction, quality of arguments, use of evidence, presentation, and conclusion. The assessment based on percentage standards in discussing the introduction reveals that none of the papers clearly present the core issues of the material based on a specific theory, and they are not supported by coherent paragraphs. However, there are still three papers categorized as having explained the issues, though they are considered weak in presenting the supporting theoretical basis for the issues. Additionally, ten papers have presented and elaborated on the theoretical framework, even describing it in excessive detail, but the direction and issues are unclear. Furthermore, eleven papers present an introduction that is too lengthy, but the conceptual framework developed is unclear. Six papers did not attempt to describe the conceptual framework at all. As a result, [Jessen & Elander \(2009\)](#) suggest that students' understanding of assessment criteria can be improved through interventions such as training and feedback, which are also crucial in teaching and evaluation contexts. However, in the assessment of the papers, it is evident that none of them clearly express the core issues of the material based on a specific theory, indicating that most authors have not fully understood the need to present structured and coherent arguments ([Hammer, 2007](#)).

In addition to the language material in presenting the introduction, the quality of the arguments was also analyzed. Of the 30 data points analyzed, none of the papers were able to develop arguments logically, as no paragraphs were found that organized ideas or relevant facts and presented evidence clearly, nor did they outline the strengths and weaknesses. However, of the 30 papers, 16 were still categorized as weak in using several aspects of argumentation. Furthermore, 14 papers were very

weak in presenting the quality of their arguments. Regarding the use of evidence to communicate the core issues of the paper, no paper utilized or evaluated evidence to show the relationship between the evidence and the core issue in accordance with the conceptual framework. Only 11 papers included material, but it was not relevant to the framework. Additionally, 16 papers were very weak in discussing the use of evidence in the paper, with 3 papers including a number of materials that were completely irrelevant to the framework and the issues discussed. In terms of presentation, none of the 30 student papers effectively and correctly used language, proper references, or clearly presented material. Although 17 papers were relatively coherent and had clear references, there were still minor errors in grammar usage, particularly in syntax and morphology (word formation or diction choices), such as confusion between the use of prefixes and prepositions, punctuation errors (periods and commas), and inconsistencies in sentence structure, especially in following the Subject-Predicate-Object-Adverb (S-P-O-A) pattern. Moreover, 10 additional papers, along with 3 others, had many errors. These errors appeared in sentence structure, irrelevant issue elaboration in the conceptual framework, and even in the use of language where the direction, purpose, and meaning in each sentence were unclear. Finally, regarding the conclusions, none of the 30 student papers contained substance in the conclusion or the use of language that restates the core issues and creates a coherent perspective with the main problem. However, 12 papers did express conclusions with weak arguments and evidence, while 14 others were even weaker in their conclusions. Some of these had minimal or no evidence and conclusions, or they contained conclusions not based on arguments.

Analysis of Thesis Data

In detail, the results of the analysis of 10 student theses from IAIN Ambon are presented as textual data, consisting of 3 from the Faculty of Tarbiyah, 4 from the Faculty of Sharia, and 3 from the Faculty of Ushuluddin/Dakwah. These 10 theses have been analyzed and verified using 10 standard evaluation indicators. These indicators include: 1) Background, 2) Problem Formulation, 3) Objectives and Benefits, 4) Theoretical Framework, 5) Approach, 6) Research Methodology, 7) Literature Review, 8) Discussion Structure, 9) Presentation, and finally, 10) Conclusion. The standard indicators and evaluation criteria for student theses, as outlined by Bernawi Munthe, have been adopted for this analysis. Based on the Standards and Criteria for Evaluating Theses as explained by Bernawi Munthe, the 10 theses that have been researched, evaluated, and analyzed are subsequently summarized, as presented in the following Table 2.

Table 2
Recapitulation of the Results of Thesis Evaluation Data for IAIN Ambon Students in
the Academic Year 2023-2024

Assessment Criteria and Standard Percentage										
L B	RM	TM	Krk	PD	MP	TP	SP	Pi	Kes	
1	2	3	4	5	6	7	8	9	10	
15 %	10 %	5 %	25 %	5 %	10 %	10 %	5 %	5 %	10 %	
5:0	5:5	5:0	5:0	5:0	5:0	5:0	5:0	5:0	5:0	
4:6	4:5	4:5	4:0	4:4	4:5	4:0	4:0	4:0	4:5	
3:4	3:0	3:5	3:6	3:6	3:5	3:5	3:6	3:5	3:5	

2:0	2:0	2:0	2:4	2:0	2:0	2:5	2:4	2:5	2:0
1:0	1:0	1:0	1:0	1:0	1:0	1:0	1:0	1:0	1:0

The results of the data analysis in the summary table show that from the 10 theses examined using 10 assessment indicators, such as the writing of the background, none of the theses received a score of 5. This indicates that no thesis was able to clearly and cohesively describe the background argument in line with the main problem and theoretical framework. However, 6 out of the 10 theses received a score of 4, meaning that the texts still described the argument, but weaker than expected according to the standard thesis writing criteria. Meanwhile, 4 out of the 10 theses received a score of 3, meaning the thesis still had a background and communicated an argument, but the sentences and paragraphs used were too lengthy, unclear, and not in alignment with the argument.

The assessment of the problem formulation section according to the indicators showed that 5 out of the 10 student theses received a score of 5, meaning the texts were considered able to succinctly and clearly describe the main problem in line with a specific theory and the thesis background. Then, 5 other theses received a score of 4, meaning the texts could describe the main problem, but the use of sentences and paragraphs was slightly weaker than expected by the thesis writing standards and criteria. For the third indicator, which is the purpose and benefit of the research, none of the 10 student theses received a score of 5. This indicates that none of the theses were able to clearly describe the purpose and benefits in line with the main problem. However, 5 of the 10 theses received a score of 4, meaning the texts described the purpose and benefits, but the expression of language in discourse form was weak and unclear, falling short of the standards and criteria in the thesis writing assessment. Meanwhile, 5 other theses received a score of 3, meaning the thesis had a purpose and benefits, but the text was too long, with unclear sentences and paragraphs that did not effectively communicate the research objectives.

Regarding the theoretical framework supporting the main problem, none of the 10 analyzed theses received a score of 5, indicating that none of the theses used sentences and paragraphs to describe the theory holistically and logically, considering both strengths and limitations. Nevertheless, 6 out of the 10 theses received a score of 3, meaning they communicated some aspects and arguments, but the sentence structure was considered weak and lacked focus on the main objective of the thesis. Meanwhile, 4 theses received a score of 2, meaning that the texts used sentences and paragraphs to communicate a number of arguments, but the sentence structure in discussing ideas was very weak and lacked focus. For the approach section, none of the texts received a score of 5, meaning no text could describe the approach holistically and logically regarding the theory underlying the main problem and objectives. However, 4 of the theses received a score of 4, meaning they used language and paragraphs to communicate the main problem, though the structure of the arguments was still considered weak. Meanwhile, 3 other theses received a score of 3, indicating that several aspects supporting the main problem and arguments, as well as the idea structure communicated, were very weak.

In terms of the research method indicator, none of the 10 theses received a score of 5. This means that no thesis could holistically and logically describe the research procedure underlying the theoretical framework. However, 5 theses received a score of 4, meaning that the language structure in the form of sentences and

paragraphs could still communicate the research method indicator, although the sentence structure was weak. Meanwhile, 5 other theses received a score of 3, meaning that certain aspects and arguments supporting the theoretical framework were very weak. Regarding the literature review indicator, none of the 10 theses received a score of 5. This indicates that no thesis could holistically and logically describe the theory underlying the main problem and objectives. However, 5 of the 10 thesis received a score of 3, meaning they used literature to support arguments and ideas related to the main problem, but the language was still weak. Furthermore, 5 other theses received a score of 2, indicating that the literature review was very weak in communicating arguments and ideas. For the discussion structure indicator, no text achieved a score of 5, meaning none of the theses presented a holistic and logical discussion to support the theory underlying the main problem and objectives, considering both strengths and limitations. However, 6 thesis received a score of 3, indicating that only 6 out of the 10 texts could briefly discuss several aspects and arguments but were weak in supporting the main idea. Four other thesis received a score of 2, meaning the description of ideas in the discussion was very weak.

In the presentation indicator, none of the texts received a score of 5, meaning none of the 10 texts provided a holistic and logical description of the theory underlying the main problem and objectives. However, 5 thesis received a score of 3, indicating that 5 out of 10 texts still used weak language and paragraphs to discuss several aspects and arguments. Another 5 theses only received a score of 2, meaning they were very weak in discussing the main arguments and ideas. Lastly, the conclusion indicator revealed that none of the 10 theses provided an argument description that created a coherent perspective with the main problem and demonstrated a relationship with major issues in presenting the conclusion. However, 5 thesis achieved a score of 4, indicating that the argument descriptions were still weak and less proportional in creating a coherent perspective. The remaining 5 thesis only received a score of 3, meaning these texts did describe the conclusion clearly based on the arguments and evidence presented.

Based on all the data from the 10 thesis, as interpreted according to the assessment indicators adopted from Bernawi Munthe, the texts can be categorized as achieving an "adequate" score. This is because 5 out of the 10 thesis observed reached an accumulated score above 30, out of a possible 50 points, which is categorized as "very good" in comparison to the overall score. Meanwhile, the other 5 theses only reached scores above 20. The highest score, categorized as "excellent," must achieve 50 points. For further details, the score for each thesis can be seen in able 3 below.

Table 3
Recapitulation of the Accumulated Scores of 10 Student Thesis from IAIN
Ambon, 2023-2024

Thesis	Thesis	Thesis	Thesis	Thesis	Thesis	Thesis	Thesis	Thesis	Thesis
1	2	3	4	5	6	7	8	9	10
33	28	32	28	34	28	28	29	31	31

The score figures of the thesis texts were adjusted according to the standards and criteria for thesis assessment as explained by Bernawi Munthe.

Data Analysis of the Research Questionnaire Lecturer Questionnaire

Lecturers were one of the respondents involved in this study. They contributed to the process of improving the quality of scientific work produced by students at IAIN Ambon. In line with the research concept, there were ten lecturers who were considered to have taught Indonesian Language courses, and they were asked to answer various questions honestly through the distribution of the research questionnaire. Six main issues were posed as the central topics to be addressed by the respondents. These six issues included (1) The teaching of types of scientific works, (2) The concept of scientific writing, (3) The structure of scientific works, (4) The process of scientific work learning, (5) The students' active participation in the scientific work learning process, and (6) The concept of creating scientific works in Indonesian language courses based on research. The ten respondents provided answers to the questionnaire questions, as explained below. The results of these answers are presented in several tables, as shown in Table 4.

Table 4
Types of Scientific Work Learning
Summary Lecturer Questionnaire Results

Question	Questionnaire Answer Options	Answer				
		Yes %	No %	Sometimes %	not finished %	amount
1	a. Paper	4=40%	4=40%	1=10%	1=10%	10
	b. Practical Report	1=10%	6=60%	2=20%	1=10%	10
	c. Thesis	2=20%	5=50%	1=10%	2=20%	10

Table 4 describes the responses regarding the types of academic works that have been taught by lecturers to students at IAIN Ambon, including papers, practical reports, and theses. Of the 10 respondents asked about the paper writing process, 4 respondents, or 40%, answered "yes," indicating that they had taught academic papers. Meanwhile, 4 respondents, or 40%, answered "never," and 1 respondent, or 10%, answered "sometimes," and "incomplete" for their teaching process. Regarding the practical report writing process, 1 respondent, or 10%, answered "yes"; conversely, 6 respondents, or 60%, answered "never"; 2 respondents, or 20%, answered "sometimes"; and only 1 respondent, or 10%, reported teaching practical reports, but the learning process was "incomplete."

As for the thesis writing process, 2 respondents, or 20%, answered "yes," and 2 respondents, or 20%, answered "incomplete," meaning that thesis writing was taught, but the process was not fully completed. Furthermore, 5 respondents, or 50%, answered "never" had the thesis writing process taught, and only 1 respondent, or 10%, answered "sometimes" had the thesis writing process taught. The results from these responses indicate that lecturers have trained students to write academic papers, practical reports, and theses. However, the teaching process is considered minimal in intensity and frequency. It can be concluded that it is reasonable to assume that students experience difficulties in writing academic papers due to these limited teaching processes.

CONCLUSION

Based on the findings of this study, it can be concluded that this research proves to be effective in enhancing the ability to write academic papers and theses based on research. The design of the research-based academic writing learning strategy can be implemented in the General Indonesian Language Course. More specifically, the conclusions of the study are presented below. The content of thirty papers and ten theses written by students of IAIN Ambon was categorized as “good.” Therefore, the ten evaluation indicators used as measures in the academic papers are considered representative. The forty academic works studied met the “good” qualification target. This is considered “good” because the highest rating standard and criteria should reach fifty points, while ten academic works scored above thirty points. The students’ ability to write in Indonesian to communicate the content of their academic works has been considered effective. The indicators used, such as word choice (diction), the use of effective sentences, and the construction of cohesive/coherent paragraphs, have successfully transformed the arguments, objectives, and key issues in the academic papers produced. Additionally, this study also contributes to improving students’ ability to use Indonesian appropriately and effectively, through measurements in areas such as word choice (diction), effective sentence construction, and cohesive paragraph development. The planning of the “Research-Based Academic Writing Learning Strategy” needs to involve students in independent research to develop their skills in writing papers and theses. Therefore, future researchers are encouraged to develop more innovative teaching methods to enhance the quality of academic writing education at higher education institutions.

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