

## Effectiveness of Quantitative Research Methods Course Module in Fostering Students' Academic Literacy

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**Abstract** This research endeavors to implement pedagogical techniques aimed at enhancing students' writing prowess within the framework of learning modules for courses on quantitative research methodologies utilizing a feedback-oriented approach. This research was carried out employing a pre-experimental design, specifically the type one group pretest-posttest design. The experimental cohort comprised pupils enrolled in the Quantitative Research Methods course, belonging to the History Education Department at Lambung Mangkurat University during the odd semester of the academic year 2022/2023. The research outcomes indicate that implementing the quantitative research methods course module with a feedback approach substantially enhances students' academic literacy in composing research proposals. It can be asserted that the implementation of modules employing a feedback-oriented approach is efficacious in cultivating students' proficiency in academic literacy pertaining to quantitative research methodologies.

**Keywords:** Effectiveness, Academic Literacy, Modules, Feedback Approach

**Abstrak** Penelitian ini bertujuan menerapkan strategi instruksional untuk mengembangkan kemampuan menulis mahasiswa yang terintegrasi dalam perancangan modul pembelajaran mata kuliah metode penelitian kuantitatif dengan menggunakan pendekatan umpan balik. Penelitian ini dilakukan menggunakan pre-experimental design jenis one group pretest-posttest design. Adapun kelas eksperimen yang digunakan yakni mahasiswa Program Studi Pendidikan Sejarah Universitas Lambung Mangkurat pada semester ganjil tahun akademik 2022/2023 yang mengambil mata kuliah Metode Penelitian Kuantitatif. Hasil penelitian yang diperoleh menunjukkan bahwa penggunaan modul mata kuliah metode penelitian kuantitatif dengan pendekatan umpan balik memberikan pengaruh yang signifikan terhadap peningkatan literasi akademik mahasiswa dalam penulisan proposal penelitian. Dengan demikian dapat dikatakan, penggunaan modul dengan pendekatan umpan balik ini efektif dalam menumbuhkan kemampuan literasi akademik mahasiswa pada mata kuliah metode penelitian kuantitatif.

**Kata kunci :** Efektivitas, Literasi Akademik, Modul, Pendekatan Umpan Balik



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## INTRODUCTION

Acquiring knowledge through the scientific method often involves reading. Nonetheless, Indonesia's 2018 PISA evaluation of reading proficiency indicates an average score of 371 and a ranking of 74th, which falls below that of Thailand (68th), Malaysia (58th), and Singapore (2nd) (Hewi & Shaleh, 2020).

Research conducted by the National Library has established that the typical Indonesian individual dedicates approximately 2-4 hours daily to reading. This falls short of UNESCO's recommended 4-6 hours daily (Yulinda & Fernandes, 2019). As stated by Aswat and Nurmaya (2019), cultivating a reading habit is an essential and pivotal aspect that necessitates early development to enhance the standard of educational provision. Consequently, Indonesia has initiated measures to enhance students' literacy skills by implementing Minister of Education and Culture Regulation No. 23 in 2015, which outlines the strategy for promoting the School Literacy Movement (Lestari, et al., 2021).

UNESCO asserts that literacy is a tangible demonstration of genuine abilities, namely the cognitive proficiencies of reading, writing, and analytical reasoning (Purwati, 2017). Meanwhile, according to Praptanti and Ernawati (2019), literacy comprises a range of cognitive faculties, proficiency in spoken and written vernaculars, comprehension of genres, and familiarity with cultural contexts. Henceforth, literacy is intimately linked to language usage in both oral and written forms.

Academic work products produced by students are typically facilitated through the use of academic language. Progress in education is marked by proficiency in using language for cognitive and critical analysis. Academic language abounds with cognitive and analytical processing that functions to present, clarify, and deduce information. The academic requirements placed on language necessitate users to perform tasks such as elucidating, contrasting, comparing, categorizing, elaborating upon, inferring from examples and evaluating (Astuti, 2022).

Learning environments in higher education are commonly associated with utilising scholarly vernacular. In parallel, scholarly literacy is tantamount to literary proficiency. The definition of literary proficiency within the realm of higher education pertains predominantly to producing scientific manuscripts. In order to cultivate students with proficiency in academic literacy, it is imperative to prioritize the acquisition of prerequisite competencies prior to developing writing aptitude.

Individuals encounter unique and varied impediments when initiating the act of writing. According to Wardhana and Ardianto (Ariyani, et al., 2021), two impediments to writing activities exist. The first pertains to internal factors, inhibiting factors that originate from within oneself. Such factors may manifest as a lack of reading habits, deficient language skills, and an absence of interest and motivation towards writing. The second hindrance relates to external factors stemming from outside influences on each individual's personhood. This factor can be in the form of difficulties in obtaining reference materials and references for writing, finding suitable topics or themes, and composing the correct sentences.

Unlike reading literacy, writing literacy has a higher level of difficulty. DePorter (Ariyani et al., 2021) suggest tips to avoid obstacles when writing, including (1) choosing a topic, (2) setting a timer, (3) writing continuously, (4) avoiding collecting ideas, organising sentences, checking grammar, repeating, crossing out or deleting things, (5) keep going until time runs out, and then it is time to stop.

Several previous studies on literacy have been conducted. One of them is research by Dalilan (2021) entitled "Student Literacy: Research of Reading Habits and Attitudes of Library Science Research Programme Students". The results of this research show the percentage level of students' reading habits and reading attitudes. Another research on student literacy skills was conducted by Indriyani, et al. (2021) titled "Information Literacy Level of State University of Malang Students Participant in National Students Scientific Week 2018-2019". This research elucidates the degree of information literacy proficiency among students from the State University of Malang who partook in PIMNAS during 2018 and 2019, as appraised through six distinct standards for information literacy.

The principal disparity between this investigation and antecedent inquiries is that the majority of research on literacy has primarily concentrated on reading proficiencies. Conversely, this research precisely scrutinizes academic literacy, encompassing reading abilities and students' composition and cognition aptitudes. In addition, previous studies describe the level of literacy skills inherent in students, while this research tries to describe the condition of students' academic literacy before and after being given a feedback approach.

Gravett and Kinchin (2020) state that developing student identity in higher education can be done with academic reference practices. Benzie and Harper (2019) also

highlighted academic literacy practices and emphasised the importance of social context in understanding student writing development in higher education. This procedure entails recognizing various communicative methods in creating written works and arguments, which are highly esteemed by scholars and experts in the field. Nevertheless, a notable obstacle is that these disciplinary standards and principles are frequently implicit, concealed within texts, and arduous for academics to convey to their pupils overtly. Complex contexts place a perspective that assumes that students in higher education are already equipped with writing skills that can be used to write about a discipline.

The issue of academic literacy practice likewise affects students enrolled in the History Education Department at Lambung Mangkurat University. The difficulties experienced include not being able to describe the background of the problem to reveal *das sein* and *das sollen*, formulating problem formulations, analysing the relationship/causation between independent and dependent variables, and identifying appropriate research methods.

These empirical outcomes suggest that, in general, learning is a routine activity where the focus on achieving learning goals outweighs the emphasis on developing academic literacy. Such a learning process is likely to limit students' ability to acquire concept ownership and only facilitate concept understanding. In this case, learning only provides opportunities to learn about concepts and to develop scientific reasoning skills but does not prioritised process skills to express creative research ideas in writing.

The writing process entails multiple facets, encompassing adherence to rules and conventions of grammar and punctuation and the coherent organization of ideas, thoughtful selection of appropriate vocabulary, mastery over fluency control, and careful consideration of the purpose and intent behind one's written work. Because of the complexity of writing, not only is learning to write challenging, but teaching writing becomes equally tricky.

To cultivate academic literacy, particularly in critical thinking, fostering academic literacy practices can be achieved by creating instructional modules for quantitative research methods courses incorporating a feedback-oriented approach. McCrimmon (1984) explains that the writing process consists of three stages: planning, drafting, and revising. This research seeks to adopt an integrated instructional strategy to facilitate

students' learning, namely, using the principle of scaffolding to develop learning modules in quantitative research methods courses.

## METHODS

This research uses a pre-experimental design type: one-group pretest-posttest design. According to Sugiyono (2014), a pre-experimental design includes only one group or class that is given a pre-test and post-test. The cohort under experimentation comprised 25 individuals enrolled in the History Education Department during the odd semester of the academic year 2022/2023, specifically those who undertook the Quantitative Research Methods course.

Before crafting a tool for monitoring educational endeavours, it is imperative to establish the standards that undergird said instrument. The ensuing chart explains the parameters by which one may furnish commentary on pupils' preliminary proposals.

**Table 1. Feedback Approach Criteria**

| No. | Criteria                  | Indicators   |
|-----|---------------------------|--|
| 1   | Background of the problem | <p>Highlights a disparity between theoretical framework or literature review and actual empirical observations.</p> <p>Suggests that the proposition is predicated upon suppositions derived from antecedent investigations.</p> <p>Suggests that the inquiry remains unresolved or has been inadequately addressed.</p> <p>Utilize reliable sources to substantiate concepts.</p> <p>Articulate the research dilemma in a lucid and organized fashion.</p> <p>Articulate the research goals with precision and quantifiability.</p> <p>Formulate compelling and logically consistent reasoning.</p> <p>Present more general aspects first, then narrow the analysis to more specific topical information that provides context.</p> <p>Shows the focus on the research problem.</p> <p>Describe the potential outcomes that the proposed research could reveal.</p> |
| 2   | Literature review         | <p>Exhibit a comprehensive analysis and amalgamation of information pertinent to the explored research quandary.</p> <p>Signifies suggestions derived from prior investigations, inquiries posited by fellow researchers, methodologies employed, and the scholar's comprehension of antecedent research discoveries.</p> <p>I am challenging the outcomes of prior studies, necessitating a repeated inquiry.</p> <p>Provide a systematic, logical, concise and relevant description that underpins the research problem.</p>   |

| No. | Criteria             | Indicators  |
|-----|----------------------|---|
| 3   | Research method      | Use references that are current, relevant to the issue, and primary.  |
|     |                      | Using quantitative research methods with available research designs.  |
|     |                      | Identify the logical steps to be taken to achieve the research objectives.  |
|     |                      | Design comprehensive and anticipatory research studies.   |
|     |                      | Identify the research instruments that will be employed to gather and extract data about the analysed variables.              |
|     |                      | Describe the research instruments and strategies used to research the underlying hypotheses and research questions.           |
|     |                      | Demonstrate how to process data and the procedures used to analyse data.  |
|     |                      | Signifies probable constraints, specifically practical restrictions, that could impact the gathering of data.                 |
|     |                      | Demonstrate proper procedures in the process of selecting subjects and sampling within the population.                        |
|     |                      | Provide background and rationale for methodologies that are unfamiliar to the reader.   |
| 4   | Language and grammar | Use correct Indonesian spelling based on the General Guidelines for Indonesian Spelling (PEUBI).                              |
|     |                      | Utilize a written composition structure that adheres to the relevant protocols of scientific writing.                         |
|     |                      | Demonstrate consistency in writing format and language.   |
|     |                      | Use good, neat, and structured writing techniques and grammar.  |
|     |                      | Craft an introduction succinctly showcasing the author's sharp analysis, polished prose, and meticulous research methodology. |

Source: Research (2022).

The parameters for this method of providing feedback are subsequently explicated through an observational instrument that employs a measurement scale devised by Likert, which encompasses a scoring continuum spanning from 1 to 5. A value of 1 represents the nadir on the scale, while a score of 5 indicates the apex for affirmative (+) assertions. The alternative answers in the observation instrument include very good, good, enough, less, and significantly less. (Sugiyono, 2014).

## RESULTS AND DISCUSSION

### Validity of the Quantitative Research Methods Course Learning Module

Validity estimation is commonly accomplished through the use of correlational analysis methodologies. Nevertheless, statistical analysis is only sometimes necessary for

all validity approaches. Distinct types of validity necessitate diverse methods of analysis. According to Azwar the types of validity are content, construct, and criterion-related.

Content validity aims to demonstrate the degree to which the items in a learning module encompass the entire scope of subject matter intended for assessment. As such, it is crucial that this content area be not only all-encompassing but also germane and aligned with the measurement objectives at hand. Haynes et al. (1995) said that the meaning of content validity is the extent to which the elements in a measuring instrument are truly relevant and represent the construct in accordance with the measurement objectives.

According to Matondang (2009), content validity is carried out to determine the extent to which a test measures mastery of certain content or material that teaching objectives should master. Consequently, content validity cannot be assessed through statistical analysis; it requires rational analysis. A pragmatic approach to ensure content validity is to examine whether the module's items conform to the measuring domain's predetermined boundaries. Moreover, verifying if each item aligns with its corresponding behavioural indicators is essential. Therefore, content validity testing should be conducted by a panel of experts, not the item writers or designers themselves. (Straub & Gefen, 2004)..

After the preliminary learning module was completed, experts were consulted to validate it. The purpose of these validation activities was to gather feedback and recommendations for enhancing and refining the created module. To determine the module's validity, a content validity test was conducted involving three validators.

The validity assessment tool for the module was constructed utilizing a measurement scale designed by Likert, featuring a scoring range of 1-5. In this system, score 1 denotes the least favourable evaluation, while score 5 represents the most optimistic appraisal for affirmative (+) statements. This module's validity test results are determined based on the alternative answers chosen by the validator. The assessment is carried out by adding up all the scores the validator gave by the predetermined aspects. The expert team validation score results can be seen in the following table.

**Table 2. Results of Content Validity of the Learning Module for Quantitative Research Methods Course**

| No. | Validator             | Score |
|-----|-----------------------|-------|
| 1   | Expert<br>Validator 1 | 70    |
| 2   | Expert<br>Validator 2 | 68    |
| 3   | Expert<br>Validator 3 | 72    |

According to the lattice of the module content validation instrument, validators are presented with 15 assessment items on a Likert Scale ranging from 1 (lowest score) to 5 (highest score). Based on their scores, evaluators will refer to assessment criteria guidelines to assess the validity of the module content.

**Table 3. Assessment Criteria Guidelines**

| Score Range  | Score Interval   | Criteria |
|--|------------------|----------|
| $X > \bar{x}_1 + 1,8 SB_i$                           | $X > 63$         | SB       |
| $\bar{x}_1 + 0,6 SB_i < X \leq \bar{x}_1 + 1,8 SB_i$ | $51 < X \leq 63$ | B        |
| $\bar{x}_1 - 0,6 SB_i < X \leq \bar{x}_1 + 0,6 SB_i$ | $39 < X \leq 51$ | C        |
| $\bar{x}_1 - 1,8 SB_i < X \leq \bar{x}_1 - 0,6 SB_i$ | $27 < X \leq 39$ | K        |
| $X \leq \bar{x}_1 - 1,8 SB_i$                        | $X \leq 27$      | SK       |

Description:

$\bar{x}_1$  = average ideal score =  $\frac{1}{2}$  (max score - min score)

$SB_i$  = ideal standard deviation =  $\frac{1}{6}$  (max score - min score)

X = average score

(Widoyoko, 2009).

Based on the evaluations provided by proficient validator 1 ( $X_1$ ) = 70, proficient validator 2 ( $X_2$ ) = 68, and adept validator 3 ( $X_3$ ) = 72, the mean score X is computed as  $(X_1+X_2+X_3):3=70$ . The average score is then consulted using the assessment criteria guidelines, namely  $70 > 63$ , to conclude that the module content validity instrument is valid with the very good category.

### **Validity and Reliability of Observation Instruments Using the Feedback Approach**

Prior to utilization, the observation apparatus that has been established by the observation standards is subjected to validity assessment and subsequent refinement. Subsequently, the instrument undergoes reliability testing to ascertain its dependability in measuring learning activities. According to Kesuma (2019), According to Kesuma



(2019), an instrument is said to be reliable or reliable if the measurement results are consistent or stable when tested repeatedly on different samples. The results of the validity and reliability of the observation instrument with the feedback approach can be seen in the following table.

**Table 4. Validity and Reability of Observation Instruments**

| <i>Case Processing Summary</i> |                             |    |       | <i>Reliability Statistics</i>                       |      |    |
|--------------------------------|-----------------------------|----|-------|---|------|----|
|                                |                             | N  | %     | <i>Cronbach's Alpha Based on Standardised Items</i> |      |    |
| <i>Cases</i>                   | <i>Valid</i>                | 25 | 86.2  | <i>Cronbach's Alpha</i>                             | .992 | 29 |
|                                | <i>Excluded<sup>a</sup></i> | 4  | 13.8  |   |      |    |
|                                | <i>Total</i>                | 29 | 100.0 |   |      |    |

Source: Research (2022)

Hence, the tool utilized for monitoring educational endeavours through the quantitative research methodology curriculum can be deemed as both valid and dependable. As stated by Azwar (2012), a measurement that can produce data with a high level of reliability is called a reliable measurement. The magnitude of the reliability coefficient ranges from 0.0 to 1.0, but in reality, the reliability coefficient of 1.0 is practically never found. An instrument is categorised as reliable if it has a reliability coefficient  $\geq 0.80$  (Usman & Akbar, 2017).

### **The Effectiveness of a Feedback Approach in Fostering Academic Literacy**

The assessment tools that have undergone rigorous testing for both validity and reliability are subsequently employed to gauge the efficacy of the feedback strategy in promoting students' academic proficiency in courses focused on quantitative research methods. The implementation of the feedback approach was carried out in three stages, namely pre-test activities, learning activities, and post-test activities.

According to Adri (2020), the teaching and learning process that is preceded by using the pre-test method and ends with a post-test aims to see the cognitive development that exists in students with the material that will and has been taught. In this case, the pre-test was conducted to measure students' academic literacy skills before using the feedback approach. Measurements were conducted on research proposals authored by students utilizing observational instruments. This undertaking will yield data/scores that demonstrate the level of literacy proficiency exhibited by students prior to undergoing treatment.

After obtaining the results of the pre-test activities, learning activities using the feedback approach were carried out. This educational endeavour spanned ten sessions, with a comprehensive breakdown of the contents as delineated below: (1) lecture contract, introduction to the course, and direction of structured assignments; (2) problems of learning high school history; (3) background and significance of research problems; (4) objectives and research basis; (5) literature review; (6) research variables; (7) population and sample; (8) research instruments; (9) data collection and analysis; and (10) research design.

This course module on quantitative research methods utilizes a feedback-oriented approach throughout its implementation. Upon completing the material discussion, students will be assigned coursework to further their comprehension and application of the subject matter. The assignment is then given feedback at the next meeting. Susilana & Riyana (2008) state that the module is a package of programmes that are arranged and designed in such a way for the benefit of student learning so that the approach in module learning uses student experience.

The last activity was to conduct a post-test, which measured students' academic literacy skills after using the feedback approach. The instrumentation utilized in the concluding examination was identical to that employed in the preliminary assessment. The evaluation was conducted on an amended research proposal, which had been revised based on input from the supervising professor. This undertaking is expected to yield data or scores reflecting the degree of literacy proficiency students attain after undergoing the treatment protocol.

**Table 5. Pre-Test and Post-Test Results Using the Learning Activity Observation Instrument**

| No. | Respondents | Initial Test |    |    |    | Final Test |    |    |    |
|-----|-------------|--------------|----|----|----|------------|----|----|----|
|     |             | LB           | TL | MP | TB | LB         | TL | MP | TB |
| 1   | R1          | 3            | 2  | 3  | 3  | 4          | 5  | 4  | 4  |
| 2   | R2          | 3            | 2  | 4  | 3  | 4          | 4  | 5  | 5  |
| 3   | R3          | 2            | 3  | 2  | 4  | 5          | 4  | 4  | 4  |
| 4   | R4          | 3            | 4  | 2  | 3  | 4          | 4  | 4  | 4  |
| 5   | R5          | 2            | 2  | 3  | 3  | 4          | 5  | 4  | 5  |
| 6   | R6          | 3            | 3  | 3  | 2  | 4          | 4  | 4  | 4  |
| 7   | R7          | 3            | 2  | 3  | 2  | 5          | 4  | 5  | 4  |
| 8   | R8          | 2            | 3  | 3  | 3  | 4          | 5  | 4  | 4  |
| 9   | R9          | 2            | 3  | 2  | 3  | 3          | 4  | 4  | 4  |
| 10  | R10         | 3            | 2  | 3  | 2  | 4          | 5  | 4  | 4  |
| 11  | R11         | 3            | 2  | 3  | 3  | 4          | 5  | 4  | 4  |

| No.     | Respondents | Initial Test |     |     |     | Final Test |     |     |     |
|---------|-------------|--------------|-----|-----|-----|------------|-----|-----|-----|
|         |             | LB           | TL  | MP  | TB  | LB         | TL  | MP  | TB  |
| 12      | R12         | 3            | 2   | 4   | 3   | 4          | 4   | 5   | 5   |
| 13      | R13         | 2            | 3   | 2   | 4   | 5          | 4   | 4   | 4   |
| 14      | R14         | 3            | 4   | 2   | 3   | 4          | 5   | 4   | 4   |
| 15      | R15         | 2            | 2   | 3   | 3   | 4          | 5   | 4   | 5   |
| 16      | R16         | 3            | 3   | 3   | 2   | 4          | 4   | 4   | 4   |
| 17      | R17         | 3            | 2   | 3   | 2   | 5          | 4   | 5   | 4   |
| 18      | R18         | 2            | 3   | 3   | 3   | 4          | 5   | 4   | 4   |
| 19      | R19         | 2            | 3   | 2   | 3   | 3          | 4   | 4   | 4   |
| 20      | R20         | 3            | 2   | 3   | 2   | 4          | 5   | 4   | 4   |
| 21      | R21         | 2            | 3   | 2   | 4   | 5          | 4   | 4   | 4   |
| 22      | R22         | 3            | 3   | 2   | 3   | 4          | 4   | 4   | 4   |
| 23      | R23         | 2            | 2   | 3   | 3   | 4          | 5   | 4   | 5   |
| 24      | R24         | 2            | 3   | 2   | 3   | 3          | 4   | 4   | 4   |
| 25      | R25         | 3            | 2   | 3   | 2   | 4          | 5   | 4   | 4   |
| Average |             | 2.6          | 2.6 | 2.8 | 2.8 | 4.1        | 4.4 | 4.2 | 4.2 |

Source: Research (2022)

Before drafting the research proposal, students are acquainted with scientific writing and instructed on the requisite criteria and techniques. They possess a fundamental understanding of the framework and methodology of scientific writing. However, the results obtained based on pre-test observations were still below expectations. Therefore, a feedback approach is used in learning activities to improve students' academic literacy in scientific writing. Students' ability to correctly write the problem's background (LB) showed that the average score on this aspect was only 2.6 before using this approach. As expected, the average score increased to 4.1 after they were given feedback. The improvement reached 63.4%.

In parallel with the contextualization of the issue, it was observed that students achieved a mean score of 2.6 in their literature review (LR). This outcome fell below-anticipated standards. However, employing feedback tactics resulted in a 59% increase in writing proficiency from 2.6 to 4.4 among students. As for the research method (MP) and grammar (TB) aspects, the mean scores tended to be the same, shifting from 2.8 to 4.2, showing a 66.67% improvement between before and after using the feedback approach in learning.

The research's data demonstrates that incorporating a feedback approach into the learning module effectively enhances academic literacy, as evidenced by students' research proposal drafts. Trepczyńska (2019) states that teaching writing is critical

because it bridges the gap between more personal proficiency-orientated types of writing and severe and complex research-based writing.

Proficiency in literacy is a paramount aspect of both education and life. Within the realm of learning, this aptitude serves as an essential foundation for attaining productive educational outcomes, ultimately facilitating the creation of superior ideas and works (Purwo, 2017).

More specifically, Azizah et al. (2018) mentioned that someone with good academic literacy skills would gain knowledge and hone critical thinking skills on existing problems. Meanwhile, Bharuthram and McKenna (2012) found that feedback on the academic writing process can help students improve their academic literacy. Therefore, pertinent research and empirical evidence indicate that the utilization of a feedback methodology can facilitate the cultivation of students' scholastic literacy abilities.

## CONCLUSIONS

Based on the investigation outcomes, it can be inferred that the learning module for the Quantitative Research Methods course is valid. This is predicated upon the outcomes of the expert panel evaluation, which yielded an average score ( $X$ ) of 70. Subsequently, this score was referenced against the assessment criteria guidelines within the  $X > 63$  range and categorized as Very Good (SB). Second, the instrument for observing learning activities using the Quantitative Research Methods course module is valid and reliable based on the trial results. The observation instrument exhibits a high level of reliability, as evidenced by its coefficient of 0.992. Third, the Quantitative Research Methods course learning module is efficient to use. Upon analyzing the results obtained from the preliminary and conclusive evaluations of the initial research proposal, it was observed that numerous facets had improved. Specifically, there was a considerable enhancement in the background aspect of the problem by 63.4%, while an increase of 59% was noted in the literature review. Additionally, regarding research methodology and grammar aspects, similar levels of progress were observed at a rate of 66.67%.

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