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STUDENTS' LEVEL OF THINKING SKILLS IN ACADEMIC READING SUBJECT AT THE FOURTH SEMESTER OF ENGLISH EDUCATION STUDY PROGRAM

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Abstract

This study is focused on the analysis of students' level of thinking skills in academic reading subject at the fourth semester of English education study program. This study was designed to describe the level of students thinking skills whether in low-order thinking skill, medium-order thinking skill or high-order thinking skill. The subject of this research was students of Academic Reading Class in English Education Study Program at Pattimura University comprised of 20 students. The data was collected from questionnaire, test, and interview. The research methodology used in this research was descriptive quantitative research design. The study concludes with the result that students' level of thinking skills are still in the low level and need improvement to achieve high-order level of thinking skill. In addition, to help improve the students' level of thinking, it should become awareness for the instructor and also the students. Further researchers could investigate more on the need of strategies or procedure to face difficulties and challenges in empowering students' level of thinking from LOTs to HOTs.

Keywords: *Level of Thinking, Reading, Higher-order thinking, Lower-order thinking*

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INTRODUCTION

In the ever-evolving landscape of higher education, the need to equip students with critical thinking and cognitive skills has become more urgent than ever. As the world increasingly demands innovative thinkers, the role of higher education institutions becomes vital in developing these skills (Filah et al., 2018). This development is particularly crucial in language education, where students are not only expected to acquire knowledge of a new language but also engage with complex academic texts, analyze information, and formulate reasoned arguments (Garner, 2012).

Academic reading, as one of the core components in the English Education Study Program, requires more than just the ability to decode written language. It necessitates an engagement with the content at multiple cognitive levels: students must understand the material, apply its concepts to new situations, analyze its structure, synthesize ideas, and, ultimately, evaluate the information critically (Alyousef, 2005). Reading, in this context, is not just a mechanical act of decoding words but an interactive cognitive process that demands active engagement with the text. The reader must interpret, make inferences, evaluate ideas, and synthesize new perspectives based on the information provided (Grabe, 1991).

In academic settings, reading skills are essential for students to not only comprehend but critically analyze and synthesize information. These skills involve the ability to engage with a text at different levels—ranging from understanding its basic meaning to evaluating its ideas and drawing conclusions based on evidence (Duke & Pearson, 2002). Reading comprehension, which is often viewed as the foundation of academic success, involves not just the retrieval of information but the active processing of ideas, integrating new knowledge with prior experiences, and critically engaging with the content (Brown, 2001). The effectiveness of reading as a skill is heavily dependent on the thinking skills employed by students, which play a key role in how they interpret, respond to, and retain information.

This study focuses on students' thinking skills in academic reading, which involves more than just memorization or basic understanding. According to Bloom's Taxonomy (1956), thinking skills can be categorized into lower-order thinking skills (LOTS), such as remembering and understanding, and higher-order thinking skills (HOTS), which involve more complex cognitive activities like analysis, synthesis, and evaluation. In the context of academic reading, students are expected to not only recall information but also analyze and critically evaluate the ideas presented in texts. Higher-order thinking skills, such as analysis and evaluation, are particularly crucial in academic reading because they allow students to go beyond surface-level comprehension and engage with the material in a deeper, more meaningful way (Anderson & Krathwohl, 2001).

Students' thinking skills, therefore, refer to their ability to process information at different levels. This involves both the ability to recall and understand basic information (LOTS) and the capacity to engage with information critically (HOTS). The development of thinking skills in students has long been a critical goal of education, as these skills are foundational for problem-solving, decision-making, and the ability to make well-reasoned arguments (Garner, 2012). Critical thinking, a core aspect of HOTS, refers to the process of thinking critically and logically to evaluate information, consider alternative viewpoints, and draw reasoned conclusions. As highlighted in the literature review of this thesis, critical thinking is essential in enabling students to engage with academic texts in a way that fosters deep learning and understanding.

However, despite the growing emphasis on HOTS in modern education, research indicates that many students, especially in the early stages of their academic journey, still struggle to move beyond LOTS. Students often focus on recalling and understanding basic facts but fall short of engaging in higher-level cognitive activities such as analysis and evaluation (Mbato, 2019). This challenge is particularly apparent in the Academic Reading course, where students need to engage not only with the content of the text but also with its implications, make inferences, and evaluate the author's arguments.

In the preliminary study conducted for this research, students exhibited weaknesses in developing their thoughts into coherent arguments during writing exercises. Many students demonstrated an inability to process and critically analyze information, instead relying on basic facts without attempting to engage in higher-order cognitive tasks like evaluation or synthesis. This finding is consistent with the literature, which suggests that students' ability to engage in deep, critical thinking is often underdeveloped, particularly in academic contexts (Filah et al., 2018).

The importance of fostering higher-order thinking in students is emphasized in both educational theory and practice. As Lipman (2003) suggests, education plays a central role in

enhancing students' thinking abilities, and the cultivation of critical thinking should be a core goal of the curriculum. In the context of academic reading, it is crucial that students not only comprehend the material but engage with it critically, using their thinking skills to analyze, evaluate, and synthesize information. This approach is supported by the findings in the Literature Review of this thesis, which argue that teaching reading at higher cognitive levels is essential for academic success in higher education (Harmer, 2007).

This study aims to explore the level of thinking skills in students enrolled in the Academic Reading course at the fourth semester of the English Education Study Program at Pattimura University. By analyzing students' thinking skills through the lens of Bloom's Taxonomy, this research seeks to identify the predominant level of thinking among the students, assess the frequency of higher-order thinking skills, and propose strategies to enhance students' cognitive abilities. The study will explore the challenges students face in moving from lower-order thinking to higher-order thinking and provide insights into how both students and lecturers can adopt strategies to improve cognitive skills (Dilekli, 2019).

Understanding students' thinking skills in reading is essential for developing teaching strategies that encourage critical engagement with texts and help students progress toward higher-order thinking. By identifying the barriers to developing HOTS and proposing strategies for improvement, this study aims to contribute to the ongoing dialogue on improving teaching practices in higher education, particularly in the English Education Study Program.

METHODOLOGY

This study adopts a descriptive quantitative research design, as this approach allows for the examination of the current levels of thinking skills in students enrolled in the Academic Reading course at the fourth semester of the English Education Study Program at Pattimura University. Descriptive research is appropriate for understanding the characteristics of a population or phenomenon as it exists, without manipulating or controlling variables (Creswell, 2014). The goal of this study is to describe and analyze the students' thinking skills in academic reading, particularly focusing on lower-order thinking skills (LOTS), middle-order thinking skills (MOTS), and higher-order thinking skills (HOTS), as categorized by Bloom's Taxonomy of Cognitive Domains (Anderson & Krathwohl, 2001).

The research design is structured to collect both quantitative and qualitative data to provide a comprehensive analysis of students' thinking skills. The quantitative data offers measurable insights into the students' performance in reading tasks, while the qualitative data collected through interviews allows for a deeper understanding of students' cognitive processes, perceptions, and challenges in academic reading (Creswell, 2014).

The participants in this study were 20 students enrolled in the Academic Reading course at Pattimura University. These students are in their fourth semester of the English Education Study Program. The selection of participants was based on their enrollment in the course, ensuring that the sample accurately represents students who are actively engaged in academic reading at an intermediate level of their education (Ary, 2010). This group was also chosen to represent a diverse range of cognitive abilities, ensuring a varied set of responses.

To gather data on students' thinking skills, this study employed three primary instruments: a questionnaire, a reading test, and in-depth interviews. Each instrument served a specific purpose in capturing different aspects of students' cognitive abilities and their experiences in academic reading (Blaxter et al., 2006).

1. Questionnaire

   The first instrument used was a questionnaire that measured students' self-awareness regarding their thinking skills. This instrument aimed to capture the students' perceptions of their cognitive processes during academic reading. The questionnaire included 15 closed-ended items, with responses measured on a yes/no scale. These questions were designed to assess students' familiarity with various types of thinking skills (e.g., memorization, understanding, analysis, evaluation) and their confidence in applying these skills during academic tasks (Blaxter et al., 2006). The responses helped identify whether students recognized the importance of higher-order thinking and whether they felt equipped to engage with texts at a deeper level.

   The first step in data collection involved distributing the questionnaire to all 20 students. The students were asked to complete the questionnaire, which was designed to gather information about their awareness and self-assessment of their thinking skills. The results from the questionnaire provided initial insights into students' perceptions of their thinking abilities and helped guide the selection of students for the interviews.

2. Reading Test

   The reading test was designed to assess students' level of thinking skills in academic reading. The test consisted of two parts: multiple-choice questions and short-answer questions. These questions were formulated based on Bloom's Taxonomy and aimed to assess the students' ability to engage with texts at different cognitive levels. The multiple-choice questions were used to measure LOTS, such as remembering and understanding, while the short-answer questions were designed to evaluate students' abilities in applying, analyzing, and evaluating the information they read, which are considered HOTS (Anderson & Krathwohl, 2001). This two-part test allowed the researcher to assess the range of thinking skills students applied while reading and to identify the cognitive gaps between lower and higher-order thinking.

   After completing the first stage of collecting data from questionnaire, the students were given the reading test, which consisted of 32 questions. The reading test was administered in class, and students were allotted a fixed amount of time to complete both the multiple-choice and short-answer sections. The test was designed to assess students' cognitive engagement with academic reading materials, with the multiple-choice questions addressing basic comprehension and recall, and the short-answer questions designed to test higher-order thinking processes such as analysis and evaluation (Hughes, 1989).

3. In-depth Interviews

   In addition to the quantitative instruments, in-depth interviews were conducted with six students selected from the pool of 20 participants. These students were chosen to represent a range of performance levels (low, middle, and high scores on the reading test). The purpose of the interviews was to gather qualitative data on the students' experiences with reading and thinking processes. The interview questions focused on how students approach academic reading, what strategies they use to understand and analyze texts, and how they perceive their own thinking skills in relation to academic tasks (Zohrabi, 2013). These interviews provided a deeper insight into the challenges students face in developing higher-order thinking skills and allowed the researcher to explore strategies that could help improve their cognitive engagement with academic materials.

This was the final stage of data collection involved conducting in-depth interviews with six selected students. These interviews were semi-structured, allowing the researcher to ask follow-up questions based on students' responses. The interviews were recorded, transcribed, and analyzed to identify patterns and insights related to students' thinking processes during academic reading. The qualitative data collected from the interviews helped to provide a richer understanding of the students' cognitive skills, challenges, and strategies in academic reading (Zohrabi, 2013).

Furthermore, the data collected from the questionnaires and reading tests were analyzed quantitatively using descriptive statistical methods. The questionnaire responses were tabulated to determine the frequency of students' self-reported thinking skills, while the reading test results were scored based on Bloom's Taxonomy levels (remembering, understanding, applying, analyzing, evaluating, creating). The responses were categorized into LOTS, MOTS and HOTS to evaluate the prevalence of each cognitive level (Anderson & Krathwohl, 2001). For the reading test, the analysis was conducted by scoring each student's performance in relation to the cognitive skills required for each question. The test results were used to identify the distribution of students' thinking skills across the three levels of thinking (LOTS, MOTS, HOTS).

The interview data were analyzed qualitatively using thematic analysis (Braun & Clarke, 2006). Thematic analysis involved transcribing the interviews, coding the responses, and identifying key themes related to students' thinking processes, challenges, and strategies for improving reading skills. The results from the interviews provided context to the quantitative findings, allowing for a deeper understanding of the barriers students face in developing higher-order thinking skills in academic reading.

To ensure the validity and reliability of the instruments used in this study, the researcher consulted with experts in the field of education to refine the questionnaire and reading test. The instruments were piloted with a small group of students prior to the main data collection to ensure clarity and appropriateness. In addition, the use of triangulation, combining quantitative and qualitative data, helped to validate the findings by cross-checking the results from the questionnaires, reading tests, and interviews (Creswell, 2014).

RESULT AND DISCUSSION

3.1. Levels of thinking skills in students

Students are not born with thinking skills; rather, these skills are developed through practice and regular learning. Thinking is a cognitive process essential for learning, and a study was conducted to analyze the levels of thinking skills among college students in a reading class. The analysis of the data collected through the reading tests and questionnaires revealed significant insights into the students' levels of thinking skills in the Academic Reading course.

Based on Bloom's Taxonomy (Anderson & Krathwohl, 2001), students' thinking skills were categorized into three levels: LOTS, MOTS, and HOTS. The results indicated that the majority of students predominantly exhibited LOTS, which included basic recall and comprehension.
The study found that a majority of students operate at the low-level thinking skills of C-1 and C-2. They tend to answer questions by simply recalling or copying information directly from the text. Only a small percentage, specifically 6.7%, showed the ability to reach the C-5 level of evaluating, which involves critical assessment. The research revealed that students often fail to process information with their own thoughts, relying instead on the direct words of the

source material. This habit of taking information as fact without generating new ideas is a key factor hindering their development of higher-level thinking.

Furthermore, the study suggests that a lack of motivation contributes to this issue. Students tend to avoid questions that require complex thought or difficult vocabulary, preferring those with easy-to-find answers. They also showed a discrepancy between their self-reported habits—like using multiple sources—and their actual behavior, which involved taking information from new sources without combining it with their own understanding. This indicates that students are not motivated to actively synthesize information, leading them to remain at a low level of cognitive ability. As a result, many students who are expected to be at a higher level of thinking remain at a lower one, unable to solve problems by interpreting and connecting information to create solutions.

3.2. The frequency of higher order thinking skills in reading performance

HOTS are a crucial aspect of higher education. They encompass analysis (C4), evaluation (C5), and creation (C6), which are considered sub-skills of critical thinking (Anderson & Krathwohl, 2001). While these skills are essential, students in higher education often demonstrate LOTS skills (Yuliati, et al., 2018).

The current study investigated the frequency of HOTS among students in a reading class. The findings reveal that the use of HOTS is infrequent, with most participants operating at low to medium cognitive levels. Specifically, only one participant (Participant X) demonstrated medium-level thinking, specifically at the analysis (C4) level. Based on the Hess (2009) rubric, this participant was able to compare facts from multiple sources and construct a rationale for their comparisons. Furthermore, only one participant (Participant Y) reached a high level of thinking, achieving the evaluation (C5) level. This participant processed information critically, connecting it with external sources to formulate well-reasoned arguments. Notably, this participant demonstrated evaluative skills even when answering questions designed for lower cognitive levels.

The results (Table 1) indicate a very low frequency of HOTS among the participants, with only 6.7% of the total demonstrating these skills. This suggests a significant need for pedagogical interventions to enhance students' thinking abilities beyond rote memorization and simple recall, integrating HOTS into the daily learning process rather than reserving it for final examinations.

Table 1. HOTS percentage

Bloom Taxonomy Level	Number of Students	Percentage (%)
Remembering (C1)	5	33,3%
Understanding (C2)	8	53,3%
Applying (C3)	-	-
Analyzing (C4)	1	6,7%
Evaluating (C5)	1	6,7%
Creating (C6)	-	-

It is important to note that these findings are based on a single cohort from one semester and thus cannot be generalized to all students in the English language education program. However, the results provide a valuable baseline for future research and targeted educational efforts aimed at improving students' critical thinking and reading comprehension skills.

3.3. New insights for improving students' thinking skills

Through the in-depth interviews, students shared their experiences and insights into how they perceive and approach academic reading. Many students reported challenges in engaging with complex texts, particularly when asked to analyze and synthesize information. Some students expressed frustration with academic texts that they found dense or difficult to understand, which may have hindered their ability to engage with the material at a deeper level (Garner, 2012).

Lecturers also provided valuable insights into the challenges students face in developing higher-order thinking skills. One major challenge identified was the lack of explicit instruction in critical thinking and reading strategies. Several lecturers noted that while students are often encouraged to memorize information, there is little emphasis on how to apply, analyze, or synthesize knowledge (Harmer, 2007). This lack of structured guidance in developing thinking skills may contribute to the low levels of HOTS observed in the study.

To address these challenges, both students and lecturers suggested a need for more interactive and student-centered learning environments that encourage critical engagement with texts. Lecturers proposed incorporating more discussions, debates, and assignments that require students to apply their reading to real-world situations, thus promoting deeper cognitive engagement. This finding echoes the suggestions made by Lipman (2003), who emphasized the importance of fostering critical thinking through interactive and engaging teaching methods.

3.4. Implications for teaching and learning

The findings of this study have significant implications for teaching practices in the English Education Study Program. The results suggest that there is a need for a more structured and focused approach to teaching HOTS in academic reading. To facilitate this, lecturers could integrate more activities that require students to move beyond basic comprehension to engage in tasks that involve analysis, synthesis, and evaluation. For example, assignments that encourage students to analyze academic texts, synthesize information from multiple sources, and evaluate the arguments presented would be beneficial in developing their critical thinking skills.

Furthermore, lecturers could benefit from incorporating explicit thinking skills frameworks into their lessons, helping students become more aware of the cognitive processes involved in academic reading. This approach aligns with the suggestions of Filah et al. (2018), who advocate for a curriculum that incorporates thinking skills development alongside content learning. On a broader scale, the research offers a fundamental reference for developing curricular policy. Educational programs and institutions can leverage these findings to inform policy-making that mandates the integration of HOTS-focused activities. This may involve redesigning learning attributes, such as course materials and assignments, to foster intellectual curiosity and the ability to process new information. Ultimately, this research provides a framework for creating learning content, helping educators classify materials, and aligning content with the cognitive tasks students are required to perform.

CONCLUSION

This study revealed that students in the Academic Reading course at the fourth semester of the English Education Study Program predominantly demonstrate LOTS, with limited engagement in HOTS. While some students were able to analyze and evaluate texts, the ability to synthesize and create new ideas based on readings was less common. These findings suggest that there is

a need for more focused instruction on critical thinking and reading strategies to help students develop their cognitive abilities.

The study also highlights the importance of fostering self-awareness in students regarding their thinking skills. By promoting critical thinking and providing opportunities for students to engage with texts at deeper cognitive levels, lecturers can better prepare students to meet the demands of academic and professional life. In conclusion, the development of higher-order thinking skills in academic reading is essential for students' academic success and should be prioritized in educational practices to help students become more effective and independent thinkers (Garner, 2012; Lipman, 2003).

ETHICAL STATEMENTS

This study was conducted in full compliance with established ethical principles, including informed consent, the protection of informant confidentiality, and respect for local cultural values. No external funding was received for this research, and the authors declare no conflicts of interest. All data and information presented in this article were collected using valid research methods and have been verified for accuracy and reliability. The use of artificial intelligence (AI) tools was strictly limited to technical assistance for language editing and writing, and did not influence the scientific substance or conclusions of this work. The authors take full responsibility for the content and conclusions of this article.

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