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Reading Literacy in Higher Education: Academic and Demographic Differences

Agus Jayadi[1], Rila Hardiansyah[2], Ahmad Muslim[3], M. Rasyid Ridlo[4], Zulfakar[5], Muhammad Iqbal[6]

Faculty of Education and Psychology, Universitas Pendidikan Mandalika, Mataram, Indonesia.
e-mail: muhammadiqbal@undikma.ac.id

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Abstract: *This study investigated the relationship between reading literacy and academic characteristics among university students at the Faculty of Education and Psychology, Universitas Pendidikan Mandalika. Using a quantitative approach with a cross-sectional survey design, data were collected from 185 students across four study programs through a timed reading literacy test based on Bloom's taxonomy, comprising 10 items at cognitive levels C2 through C5. Chi-square analysis was employed to examine the association between reading literacy categories (Very Poor, Poor, Fair, Good, Very Good) and demographic variables. Results revealed significant associations between reading literacy and study program ($\chi^2 = 25.755$, $p = .012$), gender ($\chi^2 = 12.861$, $p = .012$), and academic semester ($\chi^2 = 26.786$, $p = .008$). However, no significant relationship was found with GPA ($\chi^2 = 13.288$, $p = .102$), school origin ($\chi^2 = 2.799$, $p = .592$), or high school major ($\chi^2 = 12.506$, $p = .130$). The majority of students (64.3%) demonstrated good to very good reading literacy, with a mean score of 77.44 (SD = 22.02). These findings suggest that institutional and demographic factors play important roles in shaping students' reading literacy competencies, while prior academic achievement may not be a reliable predictor of reading literacy performance in higher education contexts.*

Keywords: *reading literacy, chi-square analysis, academic characteristics, university students.*

Abstrak: Penelitian ini bertujuan untuk mengkaji hubungan antara literasi membaca dengan karakteristik akademik mahasiswa di Fakultas Ilmu Pendidikan dan Psikologi, Universitas Pendidikan Mandalika. Menggunakan pendekatan kuantitatif dengan desain survei cross-sectional, data dikumpulkan dari 185 mahasiswa yang berasal dari empat program studi melalui tes literasi membaca terbatas waktu berdasarkan taksonomi Bloom, terdiri dari 10 butir soal pada level kognitif C2 hingga C5. Analisis chi-square digunakan untuk menguji hubungan antara kategori literasi membaca (Sangat Kurang, Kurang, Cukup, Baik, Sangat Baik) dengan variabel demografis. Hasil penelitian menunjukkan adanya hubungan yang signifikan antara literasi membaca dengan program studi (χ^2 = 25,755; p = 0,012), jenis kelamin (χ^2 = 12,861; p = 0,012), dan semester akademik (χ^2 = 26,786; p = 0,008). Namun, tidak ditemukan hubungan yang signifikan dengan IPK (χ^2 = 13,288; p = 0,102), asal sekolah (χ^2 = 2,799; p = 0,592), atau jurusan di sekolah asal (χ^2 = 12,506; p = 0,130). Sebagian besar mahasiswa (64,3%) menunjukkan literasi membaca yang baik hingga sangat baik, dengan skor rata-rata 77,44 (SD = 22,02). Temuan ini mengindikasikan bahwa faktor institusional dan demografis memainkan peran penting dalam membentuk kompetensi literasi membaca mahasiswa, sementara prestasi akademik sebelumnya mungkin bukan prediktor yang andal untuk kinerja literasi membaca di konteks pendidikan tinggi.

Kata Kunci: literasi membaca, analisis chi-square, karakteristik akademik, mahasiswa.

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Introduction

Reading literacy constitutes a foundational competency essential for academic success in higher education. The ability to comprehend, interpret, and critically evaluate written texts enables students to engage effectively with scholarly materials, construct knowledge, and participate meaningfully in academic discourse (OECD, 2019). In the contemporary educational landscape, characterized by an exponential growth of information and increasingly complex textual materials, reading literacy has emerged as a critical determinant of students' capacity to navigate and succeed in their academic pursuits (Afflerbach et al., 2020).

The Programme for International Student Assessment (PISA) has consistently documented concerning trends in Indonesian students' reading literacy performance. According to recent PISA results, Indonesian students scored significantly below the OECD average in reading proficiency, indicating systemic challenges in reading literacy development that persist into higher education (OECD, 2023). This situation underscores the urgency of investigating factors that influence reading literacy among university students, particularly within specific institutional contexts.

Previous research has identified various factors associated with reading literacy performance among university students. Study program affiliation has been found to influence reading practices and competencies, as different disciplines require varying levels and types of reading engagement (Lei et al., 2023). Gender differences in reading literacy have been consistently reported, with female students generally demonstrating higher reading proficiency in various contexts (Torppa et al., 2022). Academic progression, reflected in semester level, may also correlate with reading literacy development as students accumulate exposure to academic texts and develop more sophisticated reading strategies over time (Hermida, 2020).

While Grade Point Average (GPA) is commonly assumed to correlate with academic competencies including reading literacy, the relationship may be more nuanced than traditionally conceived. Prior educational background, including school type and high school major, potentially shapes foundational reading skills that students bring to higher education (Nanda & Azmy, 2020). However, empirical evidence regarding these associations within Indonesian university contexts remains limited.

This study addresses a gap in the literature by examining the relationship between reading literacy and multiple academic characteristics among students at the Faculty of Education and Psychology, Universitas Pendidikan Mandalika. The scientific novelty of this research lies in its comprehensive examination of both demographic and academic variables using chi-square analysis to determine patterns of association. Understanding these relationships is crucial for developing targeted interventions to enhance reading literacy competencies among university students.

The research questions guiding this study are: (1) Is there a significant association between reading literacy and study program? (2) Is there a significant association between reading literacy and gender? (3) Is there a significant association between reading literacy and academic semester? (4) Is there a significant association between reading literacy and GPA? (5) Is there a significant association between reading literacy and school origin? (6) Is there a significant association between reading literacy and high school major? This study aims to provide empirical evidence regarding the associations between reading literacy categories and these academic characteristics among university students.

E-mail address: visionary@undikma.ac.id

Theoretical Framework

Reading literacy encompasses the capacity to understand, use, evaluate, reflect on, and engage with texts to achieve goals, develop knowledge and potential, and participate in society (OECD, 2019). This definition extends beyond basic decoding skills to include higher-order cognitive processes such as analysis, synthesis, and evaluation. In higher education contexts, reading literacy involves the ability to engage critically with complex academic texts, extract and integrate information from multiple sources, and apply knowledge to novel situations (Alexander, 2020).

Bloom's taxonomy provides a hierarchical framework for categorizing cognitive processes involved in reading comprehension. The taxonomy identifies six levels of cognitive complexity: remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001). Reading literacy assessment based on Bloom's taxonomy enables differentiated evaluation of students' comprehension abilities across these cognitive levels, from basic understanding (C2) through application (C3) and analysis (C4) to evaluation (C5) (Krathwohl, 2002). This approach allows for more nuanced assessment of reading competencies beyond simple recall.

The sociocultural perspective on literacy suggests that reading competencies are shaped by social, cultural, and institutional contexts (Street, 2019). From this viewpoint, students' reading literacy is influenced by their participation in various discourse communities, including their academic discipline, which may explain variations in reading literacy across study programs. Different academic disciplines cultivate distinct literacy practices, requiring students to engage with discipline-specific genres, terminology, and modes of reasoning (Shanahan & Shanahan, 2021).

Research on gender differences in reading literacy has yielded consistent findings indicating female advantage in reading performance across various age groups and contexts (Reilly et al., 2019). This advantage has been attributed to multiple factors including differential socialization patterns, reading motivation, and engagement with reading activities (McGeown et al., 2021). However, the magnitude and nature of gender differences may vary across educational levels and cultural contexts.

Academic progression theory suggests that students develop increasingly sophisticated reading strategies and competencies as they advance through their academic programs (Hermida, 2020). Exposure to diverse academic texts, explicit instruction in disciplinary literacy, and accumulated practice contribute to this developmental trajectory. However, the relationship between academic progression (measured by semester level) and reading literacy may not be linear, as other factors such as course content and instructional approaches also influence literacy development.

Prior academic achievement, typically measured by GPA, reflects students' overall academic performance but may not specifically capture reading literacy competencies (Richardson et al., 2022). The relationship between GPA and reading literacy is potentially mediated by various factors including course design, assessment methods, and the degree to which reading is explicitly required and evaluated in different courses. Similarly, educational background factors such as school type and high school major may influence foundational literacy skills, though their impact on university-level reading literacy requires empirical investigation.

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Method

This study employed a quantitative approach with a cross-sectional survey design to examine the association between reading literacy and academic characteristics among university students. The research was conducted at the Faculty of Education and Psychology, Universitas Pendidikan Mandalika, Mataram, West Nusa Tenggara, Indonesia.

The sample comprised 185 students selected through convenience sampling from four study programs: Educational Administration (AP; n = 40, 21.6%), Guidance and Counseling (BK; n = 61, 33.0%), Community Education (Penmas; n = 14, 7.6%), and Educational Technology (TP; n = 70, 37.8%). Participants represented various academic semesters: third semester (n = 72, 38.9%), fifth semester (n = 45, 24.3%), seventh semester (n = 47, 25.4%), and ninth semester (n = 21, 11.4%). The gender distribution included 116 female students (62.7%) and 69 male students (37.3%).

Reading literacy was assessed using a researcher-developed instrument based on Bloom's taxonomy, specifically designed to measure research methodology comprehension. The instrument consisted of 10 objective test items distributed across four cognitive levels: understanding (C2; 4 items), applying (C3; 3 items), analyzing (C4; 2 items), and evaluating (C5; 1 item). Each cognitive level was assigned differential weighting to reflect item complexity: C2 items were worth 5 points each, C3 items 10 points each, C4 items 15 points each, and the C5 item 20 points, yielding a maximum total score of 100.

Data collection was conducted via Google Forms, incorporating a time constraint of 10 minutes using the Form Presenter+Timer add-on by Jivrus. This time limitation (approximately 1 minute per item including informed consent completion) was implemented to enhance the accuracy and objectivity of reading literacy measurement by requiring efficient text processing rather than allowing extended deliberation. Participants also provided demographic information including gender, study program, current semester, most recent semester GPA, school origin (public/private), and high school major (science, social science, or vocational).

Reading literacy scores were categorized into five levels based on score ranges: Very Poor (0-20), Poor (21-40), Fair (41-60), Good (61-80), and Very Good (81-100). These categories served as the dependent variable for chi-square analysis. Academic characteristics examined as independent variables included study program (AP, BK, Penmas, TP), gender (male, female), semester (3, 5, 7, 9), GPA category (below 3.00, 3.00-3.50, above 3.50), school origin (public, private), and high school major (science, social science, vocational).

Data analysis was performed using SPSS for Windows. Descriptive statistics including mean, standard deviation, skewness, and kurtosis were calculated for reading literacy scores. Frequency distributions were generated for all categorical variables. Chi-square tests of independence were conducted to examine associations between reading literacy categories and each academic characteristic. The contingency coefficient was calculated as a measure of effect size for significant associations. The significance level was set at $\alpha = .05$ for all statistical tests.

Results and Discussion

Results

Descriptive analysis of reading literacy scores revealed a mean of 77.44 (SD = 22.02) with scores ranging from 0 to 100. The distribution exhibited negative skewness (-1.143) and

E-mail address: visionary@undikma.ac.id

positive kurtosis (0.921), indicating a left-skewed distribution with most scores concentrated at higher values. The categorical distribution of reading literacy is presented in Table 1.

Table 1. Distribution of Reading Literacy Categories

Category	Frequency	Percentage
Very Poor	24	13.0%
Poor	20	10.8%
Fair	22	11.9%
Good	53	28.6%
Very Good	66	35.7%
Total	**185**	**100.0%**

As shown in Table 1, the majority of students (64.3%) demonstrated reading literacy at the Good or Very Good level. However, a notable proportion (23.8%) of students exhibited Poor or Very Poor reading literacy, indicating room for improvement. Chi-square analyses were conducted to examine associations between reading literacy categories and academic characteristics. Results are summarized in Table 2.

Table 2. Chi-Square Analysis Results

Variable	χ^2	df	p-value	Contingency C
Study Program	25.755	12	.012*	.350
Gender	12.861	4	.012*	.255
Semester	26.786	12	.008*	.356
GPA	13.288	8	.102	.260
School Origin	2.799	4	.592	.122
High School Major	12.506	8	.130	.252

*Note. *p < .05*

The chi-square analysis revealed significant associations between reading literacy and three variables: study program ($\chi^2 = 25.755$, df = 12, p = .012), gender ($\chi^2 = 12.861$, df = 4, p = .012), and semester ($\chi^2 = 26.786$, df = 12, p = .008). No significant associations were found with GPA (p = .102), school origin (p = .592), or high school major (p = .130). The contingency coefficients indicated moderate effect sizes for study program (C = .350) and semester (C = .356), and a small-to-moderate effect for gender (C = .255).

Cross-tabulation analysis revealed that Educational Technology (TP) students showed the highest proportion in the Very Good category (43.9%), followed by Guidance and Counseling (BK; 22.7%), Educational Administration (AP; 21.2%), and Community Education (Penmas; 12.1%). Regarding gender, female students demonstrated higher proportions in the Good (66.0%) and Very Good (72.7%) categories compared to male students (34.0% and 27.3%, respectively). Seventh-semester students showed the most favorable distribution, with higher concentrations in Good (37.7%) and Very Good (30.3%) categories.

Discussion

The finding that study program is significantly associated with reading literacy supports the sociocultural perspective on literacy, which posits that disciplinary contexts shape literacy practices (Street, 2019). The superior performance of Educational Technology students may be attributed to their curriculum's emphasis on instructional design and media-based learning, which requires extensive engagement with diverse textual materials and information

processing skills. This aligns with Shanahan and Shanahan's (2021) argument that disciplinary literacy develops through participation in discipline-specific literacy practices.

The significant gender difference in reading literacy, with female students outperforming male students, is consistent with international research findings (Reilly et al., 2019; Torppa et al., 2022). This gender gap may be explained by differential reading motivation and engagement patterns, as female students typically report higher intrinsic motivation for reading and more positive attitudes toward academic reading tasks (McGeown et al., 2021). The persistence of this gender difference in the Indonesian higher education context suggests the need for targeted interventions to enhance male students' reading engagement.

The significant association between semester level and reading literacy provides partial support for academic progression theory (Hermida, 2020). However, the non-linear pattern observed, with seventh-semester students showing the most favorable distribution rather than ninth-semester students, suggests that academic progression effects may interact with other factors such as course load, thesis-writing demands, or research methodology exposure that varies across semesters.

The absence of a significant relationship between GPA and reading literacy is noteworthy and challenges common assumptions about the predictive validity of academic achievement measures. This finding aligns with Richardson et al.'s (2022) observation that GPA may not capture specific competencies such as reading literacy due to the diverse nature of course assessments and grading practices. Universities may need to consider supplementary assessments that specifically target reading literacy competencies beyond traditional grading systems.

Similarly, the non-significant associations with school origin and high school major suggest that prior educational background may have limited lasting effects on university-level reading literacy. This finding supports the view that higher education contexts can provide equitable opportunities for literacy development regardless of students' prior educational trajectories (Nanda & Azmy, 2020). However, it also implies that universities should not assume that students arrive with adequate reading literacy and should provide explicit literacy instruction.

The overall positive distribution of reading literacy, with 64.3% of students achieving Good or Very Good levels, indicates that the majority of students at the Faculty of Education and Psychology possess adequate reading literacy for academic purposes. Nevertheless, the 23.8% of students at Poor or Very Poor levels represents a substantial population requiring intervention. These students may struggle with course materials and academic expectations, potentially affecting their academic success and professional preparation as future educators.

The moderate effect sizes observed for significant associations (contingency coefficients ranging from .255 to .356) indicate that while these relationships are meaningful, they account for only a portion of the variance in reading literacy. Other factors not examined in this study, such as reading motivation, prior reading habits, cognitive abilities, and instructional quality, may also contribute substantially to individual differences in reading literacy (Afflerbach et al., 2020).

This study has several limitations that should be acknowledged. The use of convenience sampling limits the generalizability of findings to the broader population of Indonesian university students. The cross-sectional design precludes causal inferences about the relationships observed. The reading literacy instrument, while based on Bloom's taxonomy,

E-mail address: visionary@undikma.ac.id

focused specifically on research methodology content, which may not fully represent general academic reading literacy. Future research should employ probability sampling, longitudinal designs, and broader measures of reading literacy to address these limitations.

Conclusion

This study demonstrated that reading literacy among university students is significantly associated with study program, gender, and academic semester, while showing no significant relationship with GPA, school origin, or high school major. These findings suggest that institutional and demographic factors play important roles in shaping students' reading literacy competencies. The majority of students (64.3%) demonstrated adequate reading literacy levels, though a substantial minority (23.8%) exhibited concerning deficiencies.

The practical implications of this study include the need for differentiated literacy support across study programs, targeted interventions for male students and lower-semester students, and explicit reading literacy instruction integrated into university curricula. Future research should explore the mechanisms underlying these associations and evaluate the effectiveness of literacy interventions in improving students' reading competencies. Additionally, longitudinal studies tracking reading literacy development throughout students' academic careers would provide valuable insights for educational policy and practice.

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