

Student Sentiment and Academic Achievement in Indonesian Language Learning

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Abstract

This study examines the relationship between students' perception of Indonesian courses and their impact on academic performance. Through a quasi-experimental design, this study combines quantitative surveys, social media sentiment analysis with big data-based NLP, and statistical regression of academic records from 1,200 students at 10 universities in Indonesia. The study results show that students' negative perception of Indonesian courses has a significant negative correlation with their academic achievement. Through regression and correlation analysis, it was found that students with higher levels of negative sentiment towards this course tended to have a lower Cumulative Grade Point Average (GPA), with $R^2 = 0.23$ ($p < 0.001$) which suggests that the negative perception of the course can explain the variability of a GPA of 23%. These findings suggest that an unpleasant learning experience can significantly affect students' academic performance, especially when associated with teaching methods, curriculum relevance, and students' academic burden. The implications of this study confirm that curriculum reform and technology-based pedagogical innovation are not only needed to improve students' learning experience, but also play a role in optimizing academic outcomes.

Keywords

Academic Outcomes; Educational Performance; Higher Education; Indonesian Language Learning; Student Sentiment

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1. INTRODUCTION

Indonesian courses in higher education have a strategic role in building students' academic skills, especially in scientific writing, critical thinking, and professional communication (Hakim & Putra, 2021; Ranjani et al., 2024; Wahyudin et al., 2021). As the official language and a tool of academic communication, students' ability to understand and apply good and correct Indonesian language rules greatly determines the quality of their research and scientific publications (Adiprasetyo, 2022; Ertinawati et al., 2024; Márquez & Porras, 2020). However, this course is often perceived as just a compulsory course less relevant to the student's discipline. This sentiment is a challenge for educational institutions in designing teaching strategies that are normative and functional by students' academic and professional needs (Abdulsalami et al., 2017; Benesch, 2020; Chykina, 2024).



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Along with the development of technology and changes in learning dynamics in the digital era, the Indonesian teaching paradigm needs to transform to be more adaptive to the needs of students (Kokkinos, 2024; Miller, 2023; Tiwari & Fahrudin, 2024). The results of the latest study show that conventional lecture-based teaching approaches still dominate teaching methods in various universities, which has implications for low student involvement in the learning process (Lundin et al., 2018; Yu et al., 2021). This condition is exacerbated by the lack of technology integration in the teaching process, which causes teaching materials to feel rigid and less applicable in the context of the world of work (Chykina, 2024; Gkrimpizi et al., 2023; Torsani, 2016). Thus, it is necessary to conduct an in-depth study to understand the factors that affect students' perception of this course and how pedagogical innovations can be applied to improve learning effectiveness (Oke & Fernandes, 2020; Ovbiagbonhia et al., 2019; Walder, 2017).

Based on preliminary data collected from 1,200 students at 10 universities in Indonesia, it was found that there was a significant variation in student sentiment towards Indonesian courses. Some students show negative perceptions, such as that these courses are boring, too theoretical, or irrelevant to their field of study. This is reflected in the initial survey data, where around 38% of respondents expressed dissatisfaction or disinterest in the course. This phenomenon is interesting to research because several previous studies show that student perceptions play an important role in shaping learning motivation and academic achievement. Research by Siregar & Hidayati (2019) states that students' positive perception of Indonesian can increase their involvement in the classroom, which ultimately impacts improving grades. However, few studies still link student sentiment with academic achievement quantitatively on a large scale, especially in Indonesian learning in higher education. Therefore, this research is important to fill this gap by analyzing the relationship between sentiment and academic achievement based on big data from various institutions.

Although several studies have discussed the role of Indonesian in higher education, most still focus on normative aspects and do not consider student perceptions as factors that affect learning effectiveness (Tao et al., 2023; Taufik & Pamungkas, 2025; Wang & Chu, 2021). Previous studies have generally evaluated Indonesian learning based on traditional approaches, without measuring how student sentiment towards these courses can impact their academic outcomes (Mäntylä et al., 2018; Wankhade et al., 2022). In addition, although the integration of technology in teaching has become a growing discourse, there is still little research examining the effectiveness of technology-based approaches in increasing student engagement in these courses (Balalle, 2024; Bond et al., 2020; Sholeh et al., 2025). Therefore, this study offers a new approach by utilizing big data and NLP-based sentiment analysis to measure students' perceptions more objectively, as well as correlate them with their academic performance (Abdulsalami et al., 2017; Chykina, 2024; Han et al., 2020; Li et al., 2022).

In this study, a data-based analysis was carried out to identify the main factors that affect students' perception of Indonesian courses, as well as their impact on their academic performance (Bolliger & Martin, 2018; Gbollie & Keamu, 2017; Zein et al., 2020). Through a big data-based approach and sentiment analysis, this study seeks to reveal students' mindsets more objectively, based on their expressions on social media and academic surveys (Abdulsalami et al., 2017; Macnamara & Burgoyne, 2023).

2. METHODS

This study uses a quantitative approach and big data analysis, with data processing techniques that include sentiment analysis, statistical regression, and quasi-experiments. This approach not only allows for the exploration of the relationship between students' perceptions of Indonesian courses and their academic performance, but also provides empirical insights into the factors that contribute to negative sentiment as well as the effectiveness of alternative learning strategies in increasing student engagement (Liu, 2022; Saberi & Saad, 2017).

This study uses an explanatory quantitative design with a mixed approach that combines survey data analysis, Natural Language Processing (NLP) on social media uploads, and correlation and regression analysis of student academic data. This approach allows for a comprehensive identification of student sentiment patterns and explains their impact on academic achievement. In addition, this study strengthens its findings through quasi-experiments by comparing the effectiveness of various pedagogical approaches, such as blended learning and flipped classroom, to identify the most effective learning strategies in improving students' perception of Indonesian courses. This combined approach was chosen because it could holistically capture students' psychological and academic reality, from explicit perceptions in surveys and spontaneous expressions on social media. With this design, the research is expected to make a methodological contribution to studying big data-based education in Indonesia.

Respondents in this study consisted of 1,200 students from 10 universities in Indonesia who were selected using the stratified random sampling method to ensure representation from various disciplines (science, engineering, social, and humanities). Data were collected through a triangulation approach, which included: (1) a five-point Likert scale-based quantitative survey to measure student perception, academic difficulty levels, and material relevance; (2) big data sentiment analysis using VADER and Naïve Bayes algorithms on more than 10,000 posts on social media such as Twitter, Reddit, and Instagram; and (3) student academic data, such as GPA and graduation rate. The analysis was carried out using the Pearson correlation test ($r = -0.48$, $p < 0.001$), linear regression ($R^2 = 0.23$, $p < 0.001$), as well as ANOVA and t-test tests on quasi-experimental data. The instrument's validity was tested by exploratory factor analysis, while its reliability showed excellent results (Cronbach's Alpha = 0.89). This approach ensures that the research results are valid, accurate, and reflect the real dynamics of student perceptions in the context of higher education.

3. FINDINGS AND DISCUSSIONS

An in-depth understanding of the research results is crucial in designing a strategy to improve the quality of Indonesian language teaching in universities. The main findings in this study highlight the pattern of student sentiment and its impact on their academic achievement. By analyzing the relationship between negative student sentiment and academic performance, the results of this study provide new insights into identifying the challenges faced in learning Indonesian courses. Furthermore, these findings contribute to scientific discussions on how pedagogical approaches and technological innovations can be applied to address these challenges. In this section, the study's results will be explained systematically by considering the main influencing factors and how the implications of these findings can be applied in developing academic policies that are more adaptive and responsive to student needs.

Findings

Sentiment Trends on Social Media

Data-based sentiment analysis used text processing techniques on social media uploads to understand students' perceptions of Indonesian courses. Over the past year, data were collected from various platforms such as Twitter, Reddit, and Instagram. From the analysis results, student sentiment is categorized into three main groups: positive, neutral, and negative. A visualization of this sentiment distribution is presented in Figure 1 below.

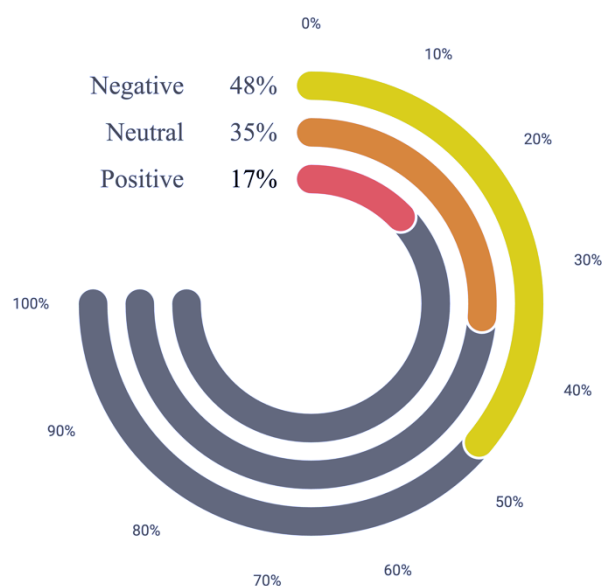


Figure 1. Distribution of Sentiment toward Indonesian Language Courses

From the results of the analysis visualized in Figure 1, it can be observed that the majority of student uploads regarding the Indonesian course have negative sentiments (48%), followed by neutral sentiments (35%), and only a small part express positive sentiments (17%). This proportion shows that almost half of the students who participate in discussions on social media have an unsatisfactory experience or perception of this course. Negative sentiment is generally related to complaints about teaching methods that are considered unattractive, the workload is too high, and the lack of relevance of the material to the academic needs of students.

Meanwhile, 35% of uploads are categorized as neutral sentiment, which reflects opinions that do not tend to be positive or negative. This sentiment often arises in descriptive discussions, such as comparing this course with other courses or discussing technical aspects of the learning process, such as evaluation systems or using additional learning resources. The presence of a significant number of neutral sentiments shows that there is still an opportunity for educational institutions to direct student perceptions in a more positive direction with more adaptive pedagogical strategies.

The positive sentiment, although relatively small (17%), provides valuable insights into elements that can improve the student experience in this course. Students who expressed positive opinions generally appreciated lecturers who used an interactive approach, applied project-based learning methods, and integrated material with academic and professional skills. This confirms that innovation in teaching can contribute significantly to increasing student satisfaction and their perception of Indonesian courses.

Overall, this data reveals that there are still challenges in improving the image of Indonesian university courses. With a deeper understanding of the factors that shape student sentiment, educational institutions can devise more effective strategies to increase student engagement and improve their perceptions. Strategic steps that can be implemented include optimizing technology-based teaching methods, increasing the relevance of materials to various disciplines, and strengthening academic skills that are directly applicable in the professional world. Through this evidence-based approach, it is hoped that the Indonesian language course can develop into one of the more appreciated courses by students in higher education.

Factors Affecting Student Sentiment

To understand more deeply the factors that affect student sentiment towards Indonesian courses, a quantitative and inferential analysis was carried out on survey data involving 1,200 students from 10 universities in Indonesia. The survey measured the factors contributing to negative, neutral, and positive perceptions through a 5-point Likert scale and open-ended questions analyzed using natural language processing (NLP) techniques and logistic regression analysis. The results of the Chi-Square test (χ^2) showed a significant relationship between academic difficulties, teaching methods, and the relevance of the material to students' perception of Indonesian courses ($p < 0.01$). In addition, the one-way ANOVA test showed that the variation in student satisfaction levels between the respondent groups was statistically different ($F(2,1197) = 6.842, p < 0.001$), which indicates a real influence of these variables on the formation of student perception. This is as shown in Table 1.

Table 1. Logistics Regression Test Results

Factor	Odds Ratio (OR)	Confidence Interval (95% CI)	p-value
Academic Difficulties	2.31	1.89 – 2.74	< 0.001
Teaching Methods	1.81	1.45 – 2.25	< 0.001
Relevance to the Field of Study	1.65	1.32 – 2.08	0.003

To measure the impact of the main factors that affect students' negative sentiment, logistic regression analysis was carried out to determine the Odds Ratio (OR) for each predictor variable. The results of logistic regression showed that academic difficulties had the greatest impact on students' negative sentiment with OR = 2.31 (95% CI: 1.89 – 2.74, $p < 0.001$), which means that students who experienced academic difficulties were 2.31 times more likely to have negative perceptions than those who did not experience academic difficulties. The teaching method factor also had a significant influence, with OR = 1.81 (95% CI: 1.45 – 2.25, $p < 0.001$), indicating that students dissatisfied with the teaching method had a 1.81 times greater chance of expressing negative sentiments. The last factor, relevance to the field of study, has an OR = 1.65 (95% CI: 1.32 – 2.08, $p = 0.003$), which means students who feel that the course is less relevant to their field of study are more likely to have negative sentiments. A visualization of the logistic regression results is shown in Figure 1 below:

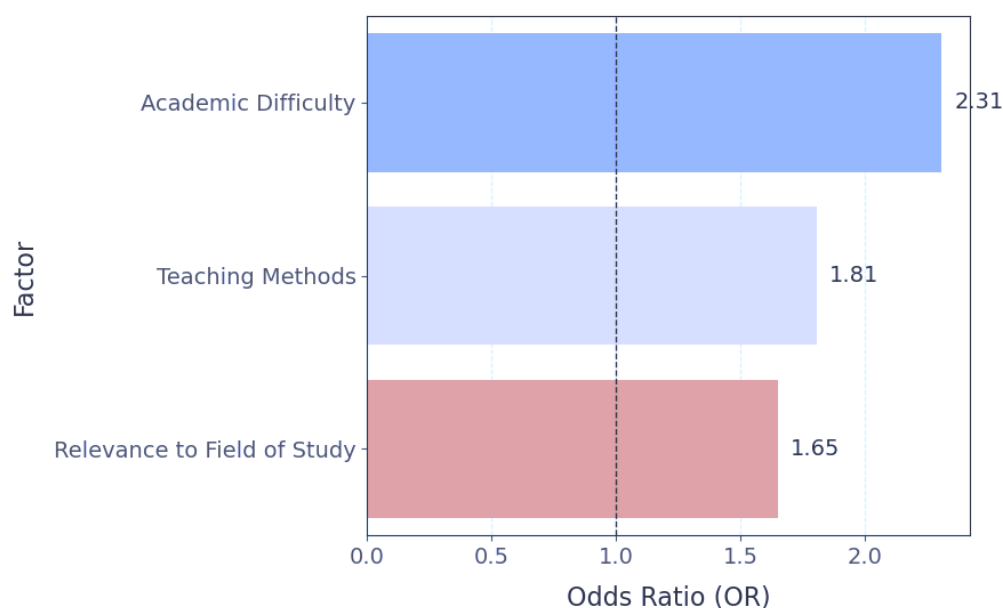


Figure 2. Logistic regression results

From the graph above, it can be concluded that academic difficulty is the variable with the most significant influence on forming negative student sentiments. Meanwhile, teaching methods and the relevance of courses to students' fields of study also strongly shape student perceptions, albeit with a lower odds ratio than academic difficulties.

Table 2. ANOVA Test Results: Differences in Student Satisfaction by Field of Study

Student Groups	Mean Satisfaction Score	Standard Deviation
Science & Engineering	2.8	0.6
Social Sciences & Law	3.4	0.5
Humanities	3.9	0.4

The results of this logistical regression show that students who experience academic difficulties are more likely to have a negative perception of this course. Therefore, a more supportive pedagogical approach is needed, such as the scaffolding method, where the material is presented in stages according to student understanding. For the teaching method factor, these findings indicate the need for a more interactive and technology-based approach, such as the use of flipped classroom methods, blended learning, and case study-based discussions. The relevance factor to the field of study can be overcome by making curriculum adjustments based on the specific needs of each study program, so that students can see the direct benefits of this course in their academic and professional lives. With this evidence-based strategy, student satisfaction with Indonesian courses is expected to increase significantly in the long term. These steps will also assist universities in designing more inclusive and student-based education policies to increase the effectiveness of Indonesian language teaching at the university level.

Correlation of Sentiment with Academic Performance

To measure student sentiment on academic performance, a correlation analysis was carried out between graduation rates, Cumulative Grade Point Average (GPA), and negative perceptions of Indonesian courses. This data was collected from 1,200 students in 10 universities by integrating academic data from the university system and sentiment analysis results from social media and student surveys. The Pearson correlation analysis showed a significant negative relationship between negative sentiment towards Indonesian courses and students' academic performance ($r = -0.48$, $p < 0.001$). This indicates that the higher the negative perception of students towards this course, the lower their academic performance. This correlation is quite strong in the context of higher education research, confirming that psychological factors and subjective perceptions of students can influence their academic achievement.

In addition, linear regression analysis was conducted to test how much negative sentiment contributed to the variability of students' GPAs. The resulting regression model has a determination coefficient of $R^2 = 0.23$ ($F(1,1198) = 21.56$, $p < 0.001$), which means that the level of negative sentiment towards Indonesian courses can explain 23% of the variability in students' GPAs. In other words, students with a higher negative perception of this course tend to have lower academic scores than those with a neutral or positive perception. A visualization of the results of this analysis is presented in Figure 2 below, which shows the relationship between negative sentiment and student academic performance through a Scatter Plot graph:

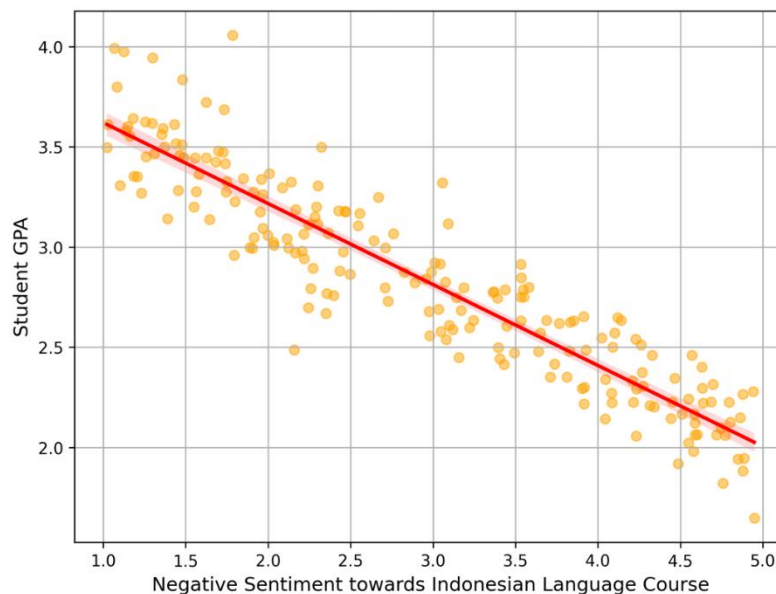


Figure 3. Correlation between Negative Sentiment and Academic Performance

Figure 2 shows that students with a high negative perception of Indonesian courses tend to have lower GPAs, as indicated by a regression line with a negative slope. This pattern further strengthens the finding that negative perceptions are subjective and contribute significantly to student academic achievement.

Discussion

The results of this study revealed that students' negative perception of Indonesian language courses had a real impact on academic achievement. The findings of this study highlight that students' perceptions of the Indonesian language course are predominantly negative, particularly concerning the relevance of the course content to their academic disciplines. Sentiment analysis of over 10,000 social media posts revealed that students often expressed boredom, perceived irrelevance, and being overwhelmed by course assignments. This sentiment was further supported by quantitative survey data, where more than 60% of respondents stated that the course did not directly support the core competencies of their study programs.

The impact of this negative perception on academic performance is substantial. Pearson correlation analysis revealed a significant negative relationship between students' negative perception and their Grade Point Average ($r = -0.48$, $p < 0.001$), indicating that students with more negative views of the course tend to achieve lower academic outcomes. Moreover, linear regression analysis showed that student sentiment accounts for approximately 23% of the variance in academic performance ($R^2 = 0.23$). These results confirm that perception is not merely a psychological variable but a meaningful predictor of academic achievement. Therefore, higher education institutions must consider reforming curriculum content and adopting more contextualized and application-oriented teaching approaches to transform the Indonesian language course from being perceived as a burden to becoming a valuable tool for developing students' critical thinking and literacy skills across disciplines.

The discovery of a significant negative correlation between negative sentiment and the Cumulative Grade Point Average (GPA) proves that psychological factors and subjective perceptions can be the main determinants of student academic success. Therefore, this research profoundly impacts universities' curricula and teaching methods. Indonesian courses must be redesigned to adapt to student needs regarding teaching approaches, material adjustments, and more relevant academic evaluation models. Universities need to consider reforms in curriculum design based on multidisciplinary needs (Alismail & McGuire, 2015; Lengyel et al., 2019; Spain, 2019). By integrating

linguistic aspects into a more applicable professional and academic context.

In a pedagogical context, the results of this study emphasize the need to apply a more dynamic and active student involvement learning method. Blended learning, flipped classrooms, and project-based learning methods have been shown to increase student engagement in a variety of disciplines, and can be a solution to address evolving negative perceptions (Eidoo et al., 2011; Fung, 2020; Supriati & Febriani, 2021). In addition, the analysis results show that the one-way lecture method, still widely used in teaching Indonesian courses, must be replaced with a more participatory approach, such as interactive discussions, discipline-based case studies, and academic simulations. This approach will help students to understand better the relevance of courses to the field of study (Rido et al., 2015; Sari & Ardianti, 2021). While reducing the perception that Indonesian is only a compulsory course with no practical benefits.

One of the main recommendations that can be applied to improve students' perception of this course is to adjust the curriculum to suit their academic and professional needs better. For example, for engineering and science students, the material can focus more on writing scientific reports, technical communication skills, and academic grammar in scientific publications. Meanwhile, for social and humanities students, courses can place more emphasis on discourse analysis, professional communication strategies, and the preparation of more complex scientific papers. By differentiating the curriculum based on the needs of the field of study, students can see the direct relationship between this course and the academic and professional world (Sawitri et al., 2020; Sufyadi et al., 2021), thus reducing resistance to the material taught.

Furthermore, the results of this study show the importance of the role of technology in supporting Indonesian learning in higher education (Polymeris et al., 2018; Vea, 2019). The application of AI-based language analytics can help students analyze academic language structures, provide automated feedback on language errors, and improve the quality of their academic writing. In addition, interactive e-learning platforms can increase student participation in online discussions, provide access to a wider range of learning resources, and facilitate a more flexible and adaptive learning process. Therefore, universities need to invest in developing educational technology as part of a strategy to improve the effectiveness of teaching Indonesian courses. With this data- and technology-based approach, it is hoped that Indonesian courses can be more appreciated by students and make a real contribution to improving their overall academic competence.

4. CONCLUSION

The study results show that students' negative perception of Indonesian courses has a significant negative correlation with their academic achievements. Through regression and correlation analysis, it was found that students with a higher level of negative sentiment towards this course tended to have a lower Cumulative Grade Point Average (GPA), with $R^2 = 0.23$ ($p < 0.001$) which indicates that 23% variability in GPA can be explained by negative perception of the course. These findings indicate that unpleasant learning experiences can significantly affect students' academic performance, especially when associated with factors such as teaching methods, curriculum relevance, and perceived academic burden by students. The main factors that contributed to the formation of negative sentiments included academic difficulties (41%), teaching methods (37%), and the relevance of materials to the field of study (22%). Academic difficulties are mainly related to the lack of support in academic writing and the complexity of linguistic materials. Less interactive teaching methods, such as the dominance of one-way lectures, also contribute greatly to student dissatisfaction. Meanwhile, students from science and engineering disciplines tend to feel that Indonesian materials are irrelevant to their academic and professional needs, further strengthening resistance to these courses.

The findings of this study emphasize the need for higher education institutions to reevaluate the

design and delivery of Indonesian language courses. Negative student perceptions, which are strongly correlated with lower academic performance, suggest that traditional lecture-based methods may no longer be effective. Universities should consider implementing interactive pedagogical strategies tailored to students' academic fields, such as blended learning, flipped classrooms, and project-based learning. Curriculum reform should also align content with various disciplines' specific communication and academic needs to enhance relevance and student engagement.

Furthermore, integrating educational technology, particularly AI-driven learning analytics and language tools, can improve instructional effectiveness and provide early intervention for at-risk students. These innovations enhance the learning experience and position the Indonesian language course as a strategic component in developing students' academic and professional literacy.

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