

THE STUDENT PERCEPTIONS, ITEM ANALYSIS, AND ISLAMIC ACADEMIC PERFORMANCE IN THE REPRODUCTION BLOCK AT THE FACULTY OF MEDICINE UMP

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ABSTRAK

Fakultas Kedokteran Universitas Muhammadiyah Purwokerto (FK UMP) mengintegrasikan nilai-nilai Islam ke dalam kurikulumnya, terutama dalam blok reproduksi, yang selaras dengan standar kompetensi nasional dan Muhammadiyah. Kinerja mahasiswa dalam materi keislaman dinilai dengan menggunakan pertanyaan pilihan ganda (MCQ), yang kemudian dianalisis kualitasnya. Penelitian ini menguji korelasi antara persepsi mahasiswa, analisis butir soal, dan kinerja akademik Islam di blok reproduksi di FK UMP. Penelitian observasional, analitik, dan cross-sectional dilakukan pada 103 mahasiswa FK UMP (angkatan 2021). Data dikumpulkan melalui kuesioner persepsi 35 item yang telah divalidasi (Cronbach's alpha = 0,86) dan analisis item MCQ menggunakan Anates versi 4.0. Skor pada 10 MCQ Islam mengukur kinerja akademik. Hasil penelitian menunjukkan bahwa tidak ada korelasi yang signifikan antara persepsi siswa dan kinerja akademik ($p = 0,278$). Namun, analisis butir soal berkorelasi secara signifikan dengan prestasi akademik ($p < 0,01$). Kesimpulan dari penelitian ini adalah bahwa persepsi mahasiswa tidak secara signifikan berdampak pada kinerja akademik; item MCQ berkualitas tinggi sangat terkait dengan hasil akademik Islam yang lebih baik di blok reproduksi.

Kata kunci : persepsi, analisis item, kinerja akademik, MCQ, blok reproduksi

ABSTRACT

The Faculty of Medicine at Universitas Muhammadiyah Purwokerto (FK UMP) integrates Islamic values into its curriculum, particularly within the reproduction block, aligning with national and Muhammadiyah competency standards. Student performance in Islamic materials is assessed using multiple-choice questions (MCQs), which are analyzed for quality. This study examines the correlation between student perceptions, item analysis, and Islamic academic performance in the reproduction block at FK UMP. An observational, analytic, cross-sectional study was conducted among 103 FK UMP students (class of 2021). Data were collected via a validated 35-item perception questionnaire (Cronbach's alpha = 0.86) and MCQ item analysis using Anates version 4.0. Scores on 10 Islamic MCQs measured academic performance. The results show that there is no significant correlation found between student perceptions and academic performance ($p = 0.278$). However, item analysis significantly correlated with academic performance ($p < 0.01$). The conclusion of this research is that student perceptions did not significantly impact academic performance; high-quality MCQ items were strongly associated with better Islamic academic outcomes in the reproduction block.

Keywords: Perception, item analysis, academic performance, MCQ, Islamic studies, reproduction block

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1. INTRODUCTION

Education is vital for developing competent Muhammadiyah doctors, with FK UMP adopting an integrated block matrix curriculum rooted in both national (SKDI) and Muhammadiyah (SKKDM) standards, emphasizing Islamic values (Sukaca et al., 2022). The reproduction block serves as a key context for integrating these competencies (Sagala dan Andriani, 2019). Student learning outcomes are primarily assessed through MCQs, making item analysis essential for ensuring test validity and reliability (Hartono, 2015). High-quality MCQs not only reflect students' mastery of Islamic content but also support the development of higher-order thinking skills (Kumar et al., 2021). Despite the recognized importance of perceptions and item quality, few studies have explored their combined impact on Islamic academic performance within a medical curriculum. This study uniquely investigates the correlation between student perceptions, MCQ item quality (analyzed with Anates software), and Islamic academic performance in the reproduction block at FK UMP, providing evidence to inform assessment practices and curriculum development.

2. METHOD

This study utilized a quantitative observational method with a cross-sectional design. Data were collected using student perception questionnaires and item analysis applications from June 2024 to July 2024 at the Faculty of Medicine, Universitas Muhammadiyah Purwokerto. The study population consisted of active students from the class of 2021. A sample of 103 students was selected based on inclusion and exclusion criteria, calculated using G*Power 3.1.9.7 software to achieve a small effect size, a statistical power of 78%, and a significance level of 0.05. Inclusion criteria were active students who agreed to participate and completed the entire research process. Students on leave, those who were demoted, or who had not participated in the reproductive block learning activities were excluded. Student perceptions were measured using a 35-item questionnaire, adapted from Masrurroh (2022), focusing on the integration of Islamic values in reproductive block learning. The questionnaire's validity and reliability were confirmed through expert review and statistical testing, resulting in a Cronbach's alpha of 0.86, indicating good internal consistency. Item analysis, an independent variable, was conducted on 10 Islamic multiple-choice questions (MCQs) from the reproduction block using Anates version 4.0 software (Arif, 2014). Anates was used to assess item difficulty, discrimination index, and distractor effectiveness, identifying items needing revision or elimination to improve the overall quality of the assessment (Elviana, 2020). The dependent variable, Islamic academic performance, was assessed using the scores from these 10 Islamic MCQ items. Data collection involved primary data from student perception questionnaires and secondary data from item analysis using Anates. Univariate analysis described the characteristics of each variable using frequency and distribution tables. Bivariate analysis examined the correlation between student perceptions and item analysis on academic performance using the Chi-square test, with the null hypothesis (H_0) stating no correlation and

the alternative hypothesis (H1) stating a correlation existed.

3. RESULTS

The table 1 and Figure 1 above shows the univariate analysis, where one student (0.97%) obtained a very positive perception, 65 students (63.11%) had a positive perception, and 37 students (35.92%) had a neutral perception with no negative or very negative results found. The item analysis results discovered that the majority of subjects were from the high group, with 54 students (52.43%), and the academic performance results show that 72 students (69.9%) failed, while 31 students (30.1%) passed.

Table 1. The univariate analysis based on student perceptions, item analysis and academic performance

No.	Variable	Interpretation	N	%
1	Student Perceptions	Very Positive	1	0,97%
		Positive	65	63,11%
		Neutral	37	35,92%
		Negative	0	0
		Very Negative	0	0
		Total	103	100%
2	Item Analysis	Low	49	47,57%
		High	54	52.43%
		Total	103	100%
3	Academic Performance	Passed	31	30,10%
		Failed	72	69,90%
		Total	103	100%

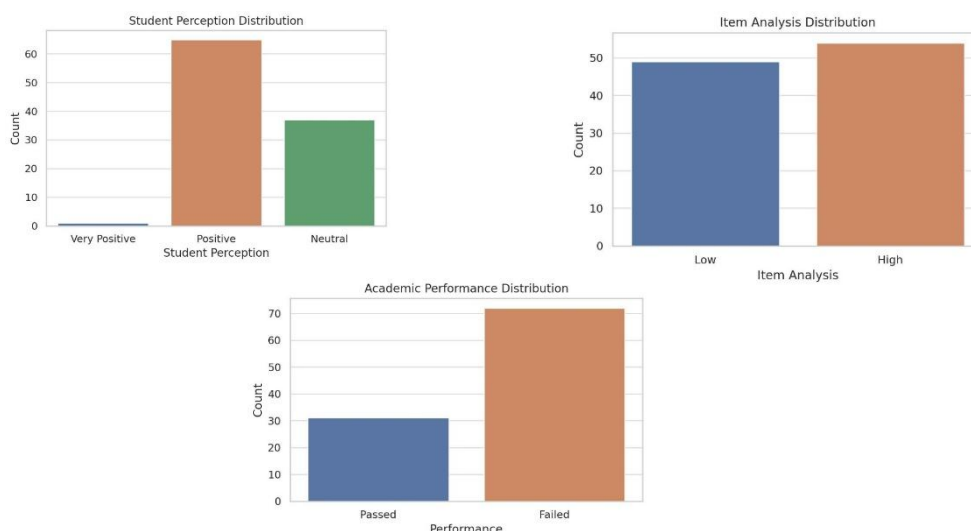


Figure 1. The univariate analysis based on student perceptions, item analysis and academic performance

The table 2 and Figure 2 above shows the bivariate analysis results for the correlation between student perceptions and academic performance with 103 subjects, showing a p-value of 0.278 ($p < \alpha = 0.05$), thus accepting H0 and rejecting H1, indicating no significant correlation between student perceptions and academic performance in the class of 2021 Faculty of Medicine, Universitas Muhammadiyah Purwokerto.

Table 2. The bivariate analysis results for the correlation between student perceptions and academic performance

Student Perception	Academic Performance				Total		P-Value
	Failed		Passed				
	N	%	N	%	N	%	
Very Positive	1	100%	0	0%	1	100%	0.278
Positive	42	64.62%	23	35.38%	65	100%	
Neutral	29	78,38%	8	21.62%	37	100%	
Total	72	69.91%	31	30.09%	103	100%	

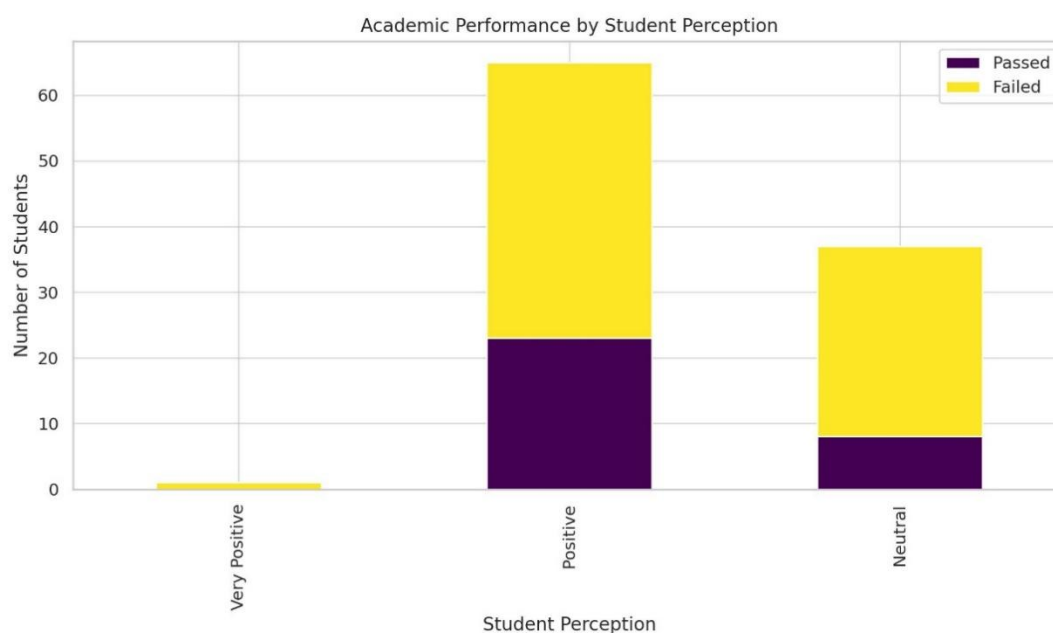


Figure 2. the correlation between student perceptions and academic performance

The table 3 and Figure 3 shows the bivariate analysis results for the correlation between item analysis and academic performance with 103 subjects, showing a p-value of <0.01 ($p < \alpha = 0.05$), thus rejecting H_0 and accepting H_1 , indicating a significant correlation between item analysis and academic performance in the class of 2021 Faculty of Medicine, Universitas Muhammadiyah Purwokerto.

Table 3. The correlation between item analysis and academic performance

Item Analysis	Academic Performance				Total		P-Value
	Failed		Passed				
	N	%	N	%	N	%	
High	22	40.741%	32	59.259%	54	100%	<.001
Low	49	100.00%	0	0.000%	49	100%	
Total	72	69.903%	31	30.097%	103	100%	

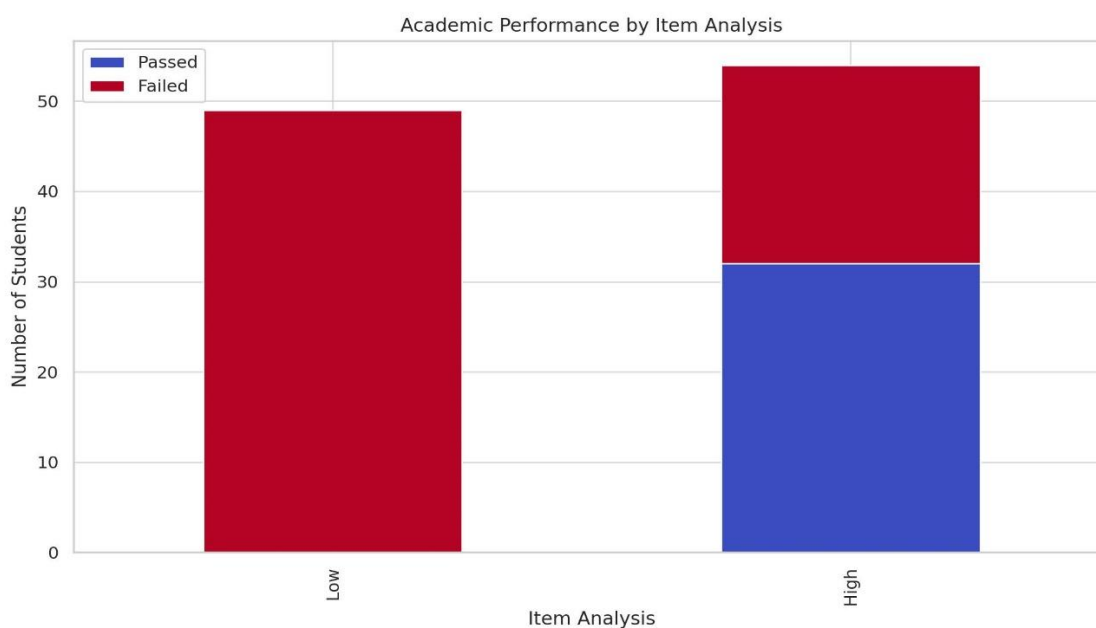


Figure 3. The correlation between item analysis and academic performance

4. DISCUSSION

The instrument used in this study was a questionnaire titled "Perceptions of Medical Students at Universitas Muhammadiyah Purwokerto on the Integration of Islamic Values in Reproductive Block Learning," modified based on the questionnaire by Masruroh (2022). The questionnaire consisted of 35 items. It had been validated and reliability-tested, with a Cronbach's alpha of 0.86, indicating that the questionnaire was suitable as a parameter for assessing students' perceptions of the integration of Islamic values in reproductive block learning.

The item analysis of the Islamic questions was conducted to enhance the quality of test items or multiple-choice questions (MCQs). High-quality test items positively impacted the objectivity of the scores obtained by students. The results of this study revealed a p-value of <0.01 ($p < \alpha = 0.05$). The subjects were categorized into four groups: superior non-passed (22 students, 40.741%), superior passed (32 students, 59.259%), inferior non-passed (49 students, 100%), and inferior passed (0%). A student from the Faculty of Medicine at Universitas Muhammadiyah Purwokerto was considered to have passed the Islamic MCQ if they scored ≥ 7 out of 10 items, indicating a significant correlation between item analysis and academic performance. The results of this study aligned with previous research by Rifyandi et al., (2020), which discovered that cognitive aspects positively affected academic achievement. Students' success in answering Islamic MCQs could be seen in both the superior and inferior groups, reflecting their perceptions and academic performance. The better the students' perceptions, the more likely they were to be classified in the superior group, serving as a benchmark for learning success. This finding was consistent with research by Zakiah dan Khairi (2019).

This study has several limitations that should be considered when interpreting the results. First, the assessment of Islamic academic performance relied solely on multiple-choice questions (MCQs). While MCQs are efficient for assessing knowledge recall, they may not fully capture higher-order thinking skills such as critical analysis, problem-solving, and the application of Islamic principles in complex scenarios (Hartini, 2015). Future research could incorporate more diverse assessment methods, such as essays, case studies, or practical exams, to provide a more comprehensive evaluation of students' understanding and abilities. Second, the study was conducted at a single institution, the Faculty of Medicine at Universitas Muhammadiyah Purwokerto, which may limit the generalizability of the findings to other contexts or populations (Atmadja, 2018). Factors such as curriculum design, teaching methodologies, and the student body's characteristics may vary across institutions, potentially influencing the relationships between student perceptions, item analysis, and academic performance. Further research involving multiple institutions or a broader range of participants would enhance the external validity of the results.

5. CONCLUSION

This study concludes that there is no significant correlation between the implementation of students' perceptions and academic performance. At the same time, there is a significant correlation between the implementation of item analysis and academic performance in the Faculty of Medicine at Universitas Muhammadiyah Purwokerto, Class of 2021. Item analysis is very beneficial for determining high-quality questions and students' ability to understand the material and engage in higher-order thinking when answering MCQs.

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CONFLICT OF INTEREST

There are no potential conflicts of interest to declare.

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