

# The Relationship between Exam Frequency and Students' Achievement in Online Learning

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## ABSTRAK

Frekuensi ujian memegang peranan penting dalam pengajaran bahasa, yang berfungsi sebagai indikator utama pemahaman siswa terhadap materi. Penelitian ini bertujuan untuk menganalisis hubungan antara frekuensi ujian dan prestasi siswa dalam pembelajaran bahasa Inggris dalam konteks pendidikan daring. Penelitian ini menggunakan pendekatan kuantitatif dengan menggunakan analisis korelasi untuk menyelidiki hubungan ini. Data dikumpulkan mengenai frekuensi ujian yang diikuti siswa pada platform pembelajaran digital OpenLearning (OPL) dan nilai ujian akhir mereka. Penelitian ini melibatkan sampel siswa semester pertama yang dipilih melalui pengambilan sampel acak untuk memastikan representasi yang tidak bias. Temuan tersebut mengungkapkan korelasi positif yang signifikan antara frekuensi ujian dan prestasi siswa, yang menunjukkan bahwa ujian yang lebih sering dikaitkan dengan nilai ujian akhir yang lebih tinggi. Selain itu, Analisis Varians (ANOVA) mengonfirmasi perbedaan signifikan dalam prestasi siswa berdasarkan frekuensi ujian, dengan siswa yang mengalami frekuensi ujian yang lebih tinggi memiliki prestasi yang lebih baik. Hasil ini menunjukkan bahwa ujian yang sering dapat meningkatkan hasil belajar dengan mendorong kebiasaan belajar yang konsisten, mengurangi kecemasan ujian, dan memberikan umpan balik secara teratur. Implikasi penelitian ini menyoroti pentingnya mengintegrasikan penilaian yang teratur dan sering dalam strategi pendidikan untuk meningkatkan kinerja akademik. Penelitian di masa mendatang sebaiknya mengkaji frekuensi ujian yang optimal dan mempertimbangkan variabel lain seperti tingkat kesulitan ujian dan keterlibatan siswa guna mengembangkan pendekatan komprehensif untuk meningkatkan pembelajaran bahasa Inggris di lingkungan pendidikan daring.

## ABSTRACT

The frequency of examinations plays a crucial role in language teaching, serving as a key indicator of students' understanding of the material. This study aims to analyze the relationship between exam frequency and student achievement in English language learning within the context of online education. The research employs a quantitative approach using correlation analysis to investigate this relationship. Data were collected on the frequency of exams taken by students on the digital learning platform OpenLearning (OPL) and their final exam scores. The study involved a sample of first-semester students selected through random sampling to ensure unbiased representation. The findings reveal a significant positive correlation between exam frequency and student achievement, indicating that more frequent exams are associated with higher final exam scores. Additionally, an Analysis of Variance (ANOVA) confirms significant differences in student achievement based on exam frequency, with students experiencing higher exam frequencies performing better. These results suggest that frequent examinations can enhance learning outcomes by promoting consistent study habits, reducing exam anxiety, and providing regular feedback. The study's implications highlight the importance of integrating regular and frequent assessments in educational strategies to improve academic performance. Future research should explore the optimal frequency of exams and consider other variables such as exam difficulty and student engagement to develop comprehensive approaches for enhancing English language learning in online education environments.

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## 1. INTRODUCTION

Technological advancements have had a major effect on the area of education, bringing in an exciting new era of innovative thinking and dedication. Utilize technology-driven teaching through the use of media, visual aids, and online learning resources to increase student engagement and comprehension. To enhance the educational experience and student accomplishment, implement a personalized learning strategy that takes into account differences in learning preferences, interests, and proficiency grades (Decuyper et al., 2021; Harefa et al., 2023). Digital platforms exist to transform the educational system, bringing innovative and engaging ways to engage learning. The use of digital technology additionally contributes to an important role in providing electronic resources for the learning process (Aleksandrova & Galimov, 2019; Rostova et al., 2019). Many different types of digital learning platforms are accessible for free and have limited use. A few are Google Classroom, Quizizz, and others.

Teachers are highly conscious of the requirement for enhanced educational practices that increase achievement among learners, and they are constantly on the lookout for new ways to help students achieve success (Kawinkoonlasate, 2020; Sefriani & Sepriana, 2022). Learning innovation through utilizing platforms is one effort to improve efficiency and render learning better. Systematic evaluation of subject matter, often known as 'frequent examination' improves the learning environment for learners. Testing courses at shorter intervals than traditional midterms enhance the learning process. Achieving success necessitates finding a balance between education and assessment (Andrade, 2019; Winget & Persky, 2022). By a variety of learning innovations that employ frequent examinations that encourage learning, teachers can evaluate the learning connected through assessment results. On the positive side, regular exams focused on a few topics can help students better organize their work and encourage consistent studying, providing ongoing feedback on their performance (Morris et al., 2021; Waluyo & Rofiah, 2021). Exams that primarily examine specific learning topics assist learners gain an in-depth comprehension of the subject matter. According to the expectancy-value theory students choose to participate based on how they perceive the utility of active learning (utility value), the time and effort required (cost value), and their belief in their ability to complete the tasks in the active learning exercise (competence beliefs) (Jain & Jain, 2022; Masmuzidin et al., 2022).

Student assessments conducted by teachers and schools are primarily internal evaluations, whereas those conducted by the government are external evaluations. Furthermore, article 58 specifies that educators' examination of learning outcomes is designed to measure progress and continuously enhance student learning outcomes (Hromalik & Koszalka, 2018; Yuliana et al., 2022). Meanwhile, independent organizations examine students, educational measurements, and educational programs on a regular, thorough, transparent, and systemic basis to assess the achievement of national education standards. Exams can be conducted throughout various stages of educational administrations (Elfirdoussi et al., 2020; Zhou, 2021). In this context, the educational syllabus for exam frequency is established by the sort of education delivered. The syllabus is extensively developed to be consistent with specified competency criteria and essential abilities that students are expected to gain. It acts as an accomplished guidance, defining major components such as the syllabus, methods of instruction, criteria for evaluation, and learning objectives that are matched to the educational objectives and standards established for the specific course. The aim is to make sure that the educational material and structure help students achieve the desired competencies and fundamental abilities at the end of the course of study (Momanyi & Rop, 2020; Rind & Mari, 2019). It is planned that managing examinations through digital learning platforms or directly may evaluate the students' level of comprehension and achievement towards comprehending learning.

Open Learning (OPL) has been utilized as the digital learning platform in the present research. OPL is a digital learning platform. OPL is an innovative digital learning platform, representing a paradigm shift in education by providing dynamic and inclusive online learning experiences (Chen, 2022; Liu et al., 2020). This platform promotes a collaborative and participatory environment that extends beyond the requirements of online classes. OPL provides educators tools for creating compelling content, fostering discussions, and implementing assessments, while students benefit from a personalized learning experience. The OPL performance framework in online learning at UMKT is integrated in accordance with UMKT lectures, specifically fourteen modules in fourteen learning meetings in the classroom, and there are also two meetings for mid-term and final examinations (Istianingsih et al., 2019; Sylvia, 2017). This study concerned the English General Basic Course at UMKT. OPL assists teachers in developing and presenting interactive classes, enabling students' opportunities to improve their skills through online learning experiences. Each of the OPL meetings includes an assessment to measure learning in each module (Papadakis & Orfanakis, 2017; Zarrinfard et al., 2021). OPL as a digital learning platform operates on a scoring mechanism to analyze and evaluate learners' progress on its digital platform. Typically, the scoring system consists of several components, including quizzes, assignments, and conversations.

The importance of this research stems from its potential to provide useful insights on the relationship of exam frequency and its effects on the academic achievement of students. The results can be utilized to guide educational practices, policies, and initiatives, helping to continuously enhance English language learning at universities. This study aims to evaluate and understand how exam frequency can be an effective tool in enhancing students' academic achievement in an online learning environment. Researcher analyze the relationship between the frequency of exam and academic achievement in the General Basic Course English at Universitas Muhammadiyah Kalimantan Timur, with an emphasis on identifying the extent to which the frequency of exams for learning affects academic outcomes. This research novelty not only looks at the relationship between test frequency and achievement, but also examines how test frequency affects students' overall learning behavior in an online environment. This may include changes in learning motivation, time discipline, or learning strategies chosen by students.

## 2. METHOD

In this study, a quantitative approach is employed, specifically utilizing correlation analysis. This study examines the relationship between exam frequency and students' achievement in English language learning (Rudd & Honkiss, 2020). This methodology aims to provide an in-depth understanding of the relationship between exam frequency and student academic achievement in online learning English. This study utilized a correlational design to explore the relationship between the frequency of exams completed by students on online learning platforms and the scores that they receive on their final exams. The population of this study includes all first semester students who are taking English as a general course using media platforms in the 2023/2024 academic year. This population represents a relevant target group to determine the relationship between exam frequency and English learning outcomes.

Researcher collected data in two ways: 1) through an online platform that records how frequently students take exams. It also enables us to see the quantity of student attendance at each exam. 2) from academic records containing the student's final exam result. This enables researcher to monitor how well students did on their last exam. In collecting data for this research, the technique that will be used involves two main components, namely recording the frequency of exams and acquiring final student learning results. To obtain a comprehensive picture of exam frequency, the use of exam frequency lists and electronic tracking systems may be involved. This register will record every exam a student takes, including aspects such as the type of exam, date of implementation, and other special characteristics. Meanwhile, data on students' final learning outcomes will be collected through official academic records, including exam scores, midterm scores and final scores. The success of this technique lies in its ability to provide detailed data on test frequency and student academic performance. Thus, correlation analysis can then be applied to this data to reveal the extent of the linear relationship between exam frequency and student learning outcomes in the context of this research.

The analysis of the collected data was conducted using both correlation analysis and Analysis of Variance (ANOVA). Correlation analysis was employed to investigate the relationship between exam frequency and students' academic achievement. Specifically, Pearson's correlation coefficient was calculated to determine the strength and direction of the relationship between the number of exams taken and the final exam scores. This statistical method is suitable for identifying whether a linear relationship exists between two continuous variables. Furthermore, Analysis of Variance (ANOVA) was utilized to examine whether there were significant differences in academic achievement based on different levels of exam frequency. Students were categorized into groups based on the frequency of their participation in the assessments (e.g., low, medium, high frequency). ANOVA was then performed to compare the mean final exam scores across these groups. This method helps to determine if the differences in academic performance are statistically significant, which would suggest that exam frequency plays a role in influencing students' learning outcomes.

## 3. RESULT AND DISCUSSION

### Result

The role of assessment in the learning process is pivotal, especially in language acquisition. Regular assessments are believed to enhance learning outcomes by providing continuous feedback and reinforcing study habits. This study examines the relationship between the frequency of exams and students' achievement in English language learning, utilizing histograms to represent the distribution of exam frequencies and final exam scores is show in [Figure 1](#).

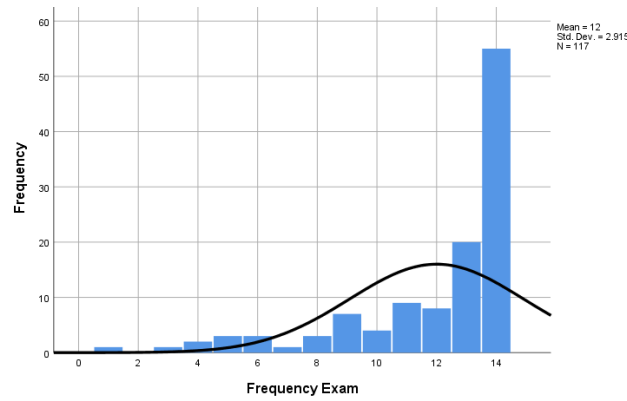


Figure 1. Histogram Frequency Exam

Figure 1 presents that the histogram for the Frequency Exam shows a distribution that is positively skewed, with a mean of 12.00, a standard deviation of 2.915, and a sample size of 117. Most students took exams frequently, as proved by the highest bar at 14 exams, indicating that a significant number of students reached the maximum exam frequency. This suggests a large portion of students participated in exams regularly, reflecting a tendency towards consistent assessment engagement throughout the course. The Histogram of Students' Achievement is show in Figure 2.

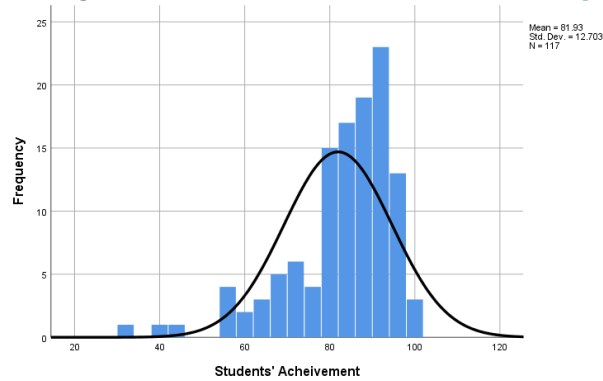


Figure 2. Histogram Students' Achievement

Figure 2 presents the histogram for the Students' Achievement displays a normal distribution, centered around a mean score of 81.93, with a standard deviation of 12.703 and a sample size of 117. The bell-shaped curve indicates that the majority of students scored between 70 and 90, reflecting a balanced level of achievement among the students in the English language learning course.

The data was analyzed using inferential statistics to see if there is a relationship between the two variables, namely Frequency Exam and Students' Achievement. The analysis technique used Product-moment using IBM SPSS Statistics 26. The analysis reveals several key aspects are Distribution Analysis, Correlation Analysis, ANOVA Analysis and post-hoc Analysis. The Kolmogorov-Smirnov (K-S) test is a non-parametric test used to determine if a sample comes from a specific distribution, often the normal distribution. This analysis aims to examine the normality of the final exam scores across different exam frequencies using the K-S test, complemented by the Shapiro-Wilk test. Distribution of frequency exam and students' achievement is show in Table 1.

Table 1. Distribution of Frequency Exam and Students' Achievement

	Frequency Exam	Statistic	df	Sg.
Students' Achievement	4	0.206	2	.
	5	0.253	3	.
	6	0.272	3	.
	8	0.253	3	.
	9	0.141	7	0.200
	10	0.183	4	.
	11	0.179	9	0.200

Frequency Exam	Statistic	df	Sg.
12	0.248	8	0.159
13	0.182	20	0.081
14	0.113	55	0.077

Table 1 presents that the test statistics for different exam frequency scores (e.g., scores of 4, 5, 6, etc.) vary, with corresponding Kolmogorov-Smirnov (K-S) statistics such as 0.260, 0.253, and 0.272. These statistics represent the maximum deviation of the observed cumulative distribution from that expected under the assumption of normality. The significance values (Sig.) for the K-S test are not explicitly detailed for each subgroup due to lower sample sizes (as indicated by omitted frequencies). However, certain scores, such as 9 and 11 (with 7 and 9 degrees of freedom, respectively), have a significance level of 0.200, indicating a borderline rejection of normality at conventional significance levels (0.05 or 0.01).

Intended for the most populated group (frequency score of 14 with 55 samples), the K-S statistic is 0.077, and the p-value is 0.000, indicating a strong rejection of the hypothesis that the data comes from a normally distributed population. This strong result is further supported by the large sample size. The results suggest that for some groups, and certainly for the entire sample of frequency score 14, the exam scores do not follow a normal distribution. This deviation from normality can be attributed to various factors, including the underlying distribution of student abilities, the exam design, or the teaching methods applied.

Non-normality in key variables like students' achievement suggests caution when applying parametric tests that assume normality. Alternative approaches, such as non-parametric tests or data transformation techniques, might be required to analyze such data appropriately. The varying results across different frequency scores highlight the importance of considering subgroup analyses in educational research. Different groups of students may exhibit different patterns that could be masked when analyzing the entire sample as a whole. This underscores the need to tailor statistical approaches to the specific characteristics of each subgroup to derive more accurate and meaningful conclusions.

The analysis of the correlation between exam frequency and students' achievement in English language learning is crucial for understanding how assessment frequency impacts academic performance. This section examines the descriptive statistics and Pearson correlation coefficient to determine the strength and significance of the relationship between these two variables. Correlation frequency exam and students' achievement is show in Table 2.

**Table 2. Correlation Frequency Exam and Students' Achievement**

		Frequency Exam	Students' Achievement
Frequency Exam	Pearson Correlation	1	0.644
	Sig. (2-tailed)		0.000
Score of Final Exam	Pearson Correlation	0.644	1
	Sig. (2-tailed)	0.000	

Table 2 shows that Pearson correlation coefficient of 0.644 indicates a moderate positive correlation between the frequency of exams and final exam scores. According to Karl Pearson's that Pearson correlation coefficient of 0.500 to 0.700 indicates a moderate positive. This suggests that as the frequency of exams increases, students' final exam scores also tend to increase. The correlation is significant at the 0.01 level, confirming that the observed relationship is statistically significant and unlikely to be due to chance. This positive correlation implies that frequent assessments may help reinforce learning and improve students' performance, likely due to consistent engagement with the material and regular feedback on their progress.

Understanding the impact of exam frequency on students' achievement is critical in optimizing educational strategies. This study investigates whether different frequencies of exams affect the students' achievement in English language learning. An Analysis of Variance (ANOVA) is employed to assess the significance of variations in students' final exam scores across different groups subjected to varying exam frequencies. The result of anova test is show in Table 3.

**Table 3. The Result of Anova Test**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8506.006	2	4253.003	47.471	0.000
Within Groups	10213.447	114	89.592		
<b>Total</b>	<b>18719.453</b>	<b>116</b>			

Table 3 shows that ANOVA results reveal a significant effect of exam frequency on students' final exam scores ( $F(2, 114) = 47.471, p < 0.001$ ). This indicates that at least one group's mean score is significantly different from the others. The significant ANOVA results suggest that the frequency of exams has a notable impact on students' performance in the students' achievement. The ANOVA results reveal significant differences in final exam scores across different exam frequencies, indicating that exam frequency significantly affects students' achievement in English language learning. However, the violation of the homogeneity of variances assumption suggests the need for cautious interpretation and potentially more robust statistical methods to confirm these findings.

To identify which groups differ from each other, post-hoc tests such as the Games-Howell should be conducted. The significant Levene's test result, however, warrants a cautious interpretation of these findings, as the violation of the homogeneity of variances assumption can affect the robustness of the ANOVA results. Post-hoc tests are conducted after ANOVA to determine which specific groups' means are significantly different from each other. Given the violation of homogeneity of variances identified in the previous ANOVA, the Games-Howell test, which does not assume equal variances, is appropriate for this analysis. Table 4 presents the results of the Games-Howell post-hoc test, comparing the final exam scores across different exam frequency groups: (a) Group 1: Lower frequency of exams; (b) Group 2: Medium frequency of exams; (c) Group 3: High frequency of exams.

**Table 4. Games-Howell post-hoc test**

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
Group 1	Group 2	7.365	4.809	0.297
	Group 3	-15.161	3.127	0.005
Group 2	Group 1	-7.365	4.809	0.297
	Group 3	-22.527	3.830	0.000
Group 3	Group 1	15.161	3.127	0.005
	Group 2	22.527	3.830	0.000

Table 4 show that show Games-Howell post-hoc test was performed to identify which specific groups differed significantly. The post-hoc Games-Howell test results reveal significant differences in final exam scores between groups with varying frequencies of exams. Specifically in high frequency of exams consistently outperformed both low frequency of exams and medium frequency of exams. There is no significant difference between low frequency of exams and medium frequency of exams.

These findings strengthen the belief that higher frequency of exams is associated with better student performance in final exams. The significant differences highlight the positive impact of frequent assessments on academic achievement in English language learning. Given these findings, educators and policymakers should consider the frequency of exams as a crucial factor in designing assessment strategies. More frequent exams may provide continuous reinforcement of learning, thereby enhancing student performance, while less frequent exams might allow for deeper learning and understanding of the material.

## Discussion

In order to answer the first research question "Is there a positive relationship between the frequency of exams and students' achievement in English language learning?", a correlation analysis was conducted to examine the relationship between exam frequency and students' achievement in English language learning (Haataja et al., 2022; Raković et al., 2022). The results of the correlation analysis reveal a statistically significant positive relationship between the frequency of exams and students' achievement. This suggests that as the frequency of exams increases, students' achievement in English language learning improves. Higher exam frequency appears to help students develop consistent study habits. This aligns with theories suggesting that regular evaluation can reinforce the learning process by providing continuous feedback, reducing exam anxiety through familiarity, and encouraging frequent review of the material (Khotimah, 2018; Kriswanti et al., 2022). These findings also support the cognitive load theory, which posits that proper management of cognitive load can enhance understanding and retention (Aisyah et al., 2023; Fouze & Amit, 2021).

Related to other reseaches, in line with other study state that the focus has predominantly been on the utilization of online learning resources and their impact on various aspects of language learning (Saud et al., 2020). The challenges and benefits of using online platforms for language learning, emphasizing the need for curriculum reform to incorporate more digital resources. In contrast, in this research directly investigates this relationship within the context of English language learning using the

Open Learning (OPL) platform (Liu et al., 2020; Trajkovik et al., 2018). The findings reveal a significant positive correlation between the frequency of exams and students' achievement, indicating that students who participated in more frequent assessments achieved higher final exam scores. This aligns with the Expectancy-Value Theory which suggests that regular, frequent exams can enhance motivation and engagement, leading to better academic outcomes (Sefriani & Sepriana, 2022). This study fills the gap left by previous research by providing empirical evidence that frequent examinations can significantly improve learning outcomes, thereby offering practical implications for educational strategies in online learning environments.

In previous studies, such as those conducted by previous study established a strong positive correlation between English proficiency and academic achievement, similar to my finding that frequent assessments correlate with higher final exam scores (Rudd & Honkiss, 2020). This underscores the importance of regular evaluations in maintaining and improving language proficiency. The ANOVA results in my study further confirm that exam frequency significantly affects students' performance, with those experiencing higher frequencies performing better. Their research emphasized the role of motivation in online learning environments. Frequent assessments, as shown in my study, can sustain student engagement and motivation by providing frequent opportunities for success and feedback (Almusharraf et al., 2020; Riddell, 2015). This consistency highlights the multifaceted benefits of frequent examinations, not only in terms of academic performance but also in fostering a positive learning environment.

Meanwhile, this study builds on this foundation by specifically investigating whether there is a significant difference in students' achievement based on the level of exam frequency. Using ANOVA analysis, the researcher found that there are indeed significant differences in final exam scores among groups with varying frequencies of exams. Specifically, students who experienced high-frequency exams consistently outperformed those with low and medium frequency of exams. These findings align with educational theories suggest that frequent assessments provide regular feedback, encourage consistent study habits, and reduce last-minute cramming, thus enhancing overall academic performance. These findings align with educational theories that suggest frequent assessments can reinforce learning by providing regular feedback, encouraging consistent study habits, and reducing the likelihood of cramming (Theobald et al., 2021). However, it is essential to balance the frequency of exams to avoid potential stress and burnout among students.

These differences highlight the importance of exam frequency in improving academic performance. Students who frequently take exams have more opportunities to test their understanding, receive feedback, and correct their mistakes. This finding is consistent with previous research indicating that regular evaluations can help students better organize their work and promote consistent study habits. The findings of this study have important implications for educational practices and policies. Integrating frequent and regular assessments into educational strategies can enhance student learning outcomes. Educators and curriculum designers should consider scheduling exams that allow for continuous evaluation and frequent feedback. Regular assessments not only help improve academic performance but also reduce exam anxiety and promote healthy study habits.

However, it is crucial to find the right balance in exam frequency. While frequent assessments can reinforce learning, too many exams can lead to stress and burnout among students. Therefore, further research is needed to explore the optimal frequency of exams and consider other variables such as exam difficulty and student engagement. Despite providing valuable insights, this study has several limitations. First, it is limited to one university and one course, which may affect the generalizability of the results. Second, the correlational design of the study means it cannot definitively claim a causal relationship between exam frequency and students' achievement. Recommendations for further research, implement more frequent exams to provide continuous feedback and reinforce learning, ensure that the frequency of assessments is balanced to avoid student burnout and conduct additional studies to explore the optimal frequency of exams and examine the long-term impacts on student learning and retention. Future research should explore the optimal frequency of exams and examine the long-term effects of regular assessments on academic achievement and knowledge retention. Additionally, further studies should consider other factors such as exam difficulty, student engagement, and social support in enhancing English language learning in online education environments.

#### 4. CONCLUSION

The findings of this study strongly support the hypothesis that there is a positive relationship between the frequency of exams and students' achievement in English language learning. The statistical analysis reveals a significant correlation, indicating that students subjected to more frequent exams tend to achieve higher scores. Moreover, the ANOVA results confirm that the level of exam frequency

significantly affects students' performance, with those experiencing higher frequencies performing better. This relationship can be attributed to several factors. Frequent exams may encourage consistent study habits, reduce exam anxiety through familiarity, and provide regular feedback that helps students identify and address knowledge gaps. Additionally, frequent testing can reinforce learning through retrieval practice, a well-documented phenomenon in educational psychology.

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