

EFFECTS OF INDIVIDUALISED AND SPACED-REPETITIVE LEARNING STRATEGIES ON ACADEMIC PERFORMANCE AND RETENTION OF SECONDARY SCHOOL STUDENTS IN ISLAMIC STUDIES IN KATSINA STATE, NIGERIA

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Abstract

This study investigated the effects of individualized and spaced-repetitive learning strategies on the academic performance and retention of SS II students in Islamic Studies in Katsina State, Nigeria. A quasi-experimental pretest and post-test design was adopted. The population of the study comprised of all SSII students in Katsina state out of which two hundred and ninety four (222) students were selected through multi-stage sampling technique from four (4) selected schools. 30 multiple-choice Islamic Studies Student's Performance Test (ISSPT) was used as instrument for data collection. The reliability of the instrument was established using test-retest method; computed using PPMC and the value obtained was 0.80. The experimental groups were taught using individualized and spaced-repetitive learning strategies while, the control group was taught using lecture method. T-test for independent sample was used to test the hypotheses. Findings of the study indicated that students exposed to the individualized and spaced-repetitive learning strategies achieved significantly higher academic performance in Islamic Studies compared to their counterparts taught using the lecture method. The study concluded that individualized and spaced-repetitive learning strategies significantly enhanced the academic performance of secondary school II students in Islamic Studies compared to the conventional lecture method. Based on the findings, it is recommended that government and educational stakeholders should provide funding and resources for the development of instructional materials that support individualized and spaced-repetitive learning, such as modular lesson packages, revision guides, and digital learning tools.

Keywords: Individualized Learning Strategy; Spaced-Repetitive Learning Strategy; Academic Performance; Retention; Islamic Studies.

Introduction

Education is an essential process in human development. It also deals with the total process of human learning by which knowledge is imparted, faculties are trained and different skills are developed. Education is expected to affect the social behavior of the person being educated. Education is a life-long process which is always used to imply a positive state of mind. Grace (2022) noted that education is a process of transferring knowledge and experience from one generation to another. It involves developing within students the necessary intellectual, social

and physical skills that will enable them to be productive citizen, capable of meeting the demand and challenges of society.

Learning strategies refer to the various approaches or methods employed to facilitate the acquisition and retention of knowledge. They play a crucial role in enhancing the quality of learning by supporting learners' understanding and promoting meaningful engagement with instructional content. For any curriculum to be effective, it must be aligned with learners' needs, interests, and learning preferences. A curriculum that integrates appropriate learning strategies can significantly improve students' academic performance and overall learning outcomes (Alghamdi, 2017). Individualized learning is a process of learning which allows learner to pursue his own learning in his way and at his own speed. It is rooted in diverse educational philosophies and has evolved through pedagogical innovations and technological developments. Central to this approach is the adaptation of instruction to align with each student's unique needs, interests, and learning styles, thereby enhancing engagement and maximizing academic performance (Akyuz, 2020). Among the various learning strategies identified by scholars, spaced repetition sometimes referred to as repetitive learning has gained considerable prominence. This strategy involves the systematic repetition of learned content over spaced intervals, allowing learners to reinforce their understanding and improve memory retention.

According to Noraini (2021), spaced repetitive learning strategy requires a sufficient number of repetitions to support the memorization of acquired knowledge. Spaced learning, therefore, refers to the intentional allocation and revisiting of information across distinct time periods, a process that facilitates the storage of required information in the long term memory. Islamic Studies plays a crucial role in nurturing students' knowledge, understanding, appreciation, and practical experience of Islam, thereby shaping their moral character and guiding them in living according to Islamic values (Masturin, 2024). Despite its importance, current approaches to teaching the subject often fall short in fostering a deep emotional connection to religious teachings or encouraging the consistent application of Islamic principles in daily life. This shortcoming raises concerns about the effectiveness of existing instructional methods in achieving both intellectual mastery and spiritual formation (Nurjannah, 2023).

Academic performance is a vital measure of the extent to which learning objectives are achieved, serving as a key indicator of students' mastery of knowledge, skills, and attitudes outlined in the curriculum. It is typically evaluated through tests, examinations, assignments, and other assessments, which also provide insight into the effectiveness of teaching and learning strategies (sadler, 1983 cited in dweck, 2014). For educators, parents, policymakers, and researchers, academic performance functions as both a benchmark for student progress and a tool for evaluating instructional quality. Evidence suggests that these approaches significantly improve performance and retention in Islamic Studies (Narkhede, patil, Kasat, Gawas & more, 2024). This study therefore examines the effects of these three strategies on secondary school

students' academic performance in Islamic Studies to identify sustainable solutions for improvement.

As this study sets to examine the effects of Individualized and Spaced-Repetitive Learning Strategies on Academic Performance and Retention of Secondary School Students in Islamic Studies in Katsina, Nigeria. Learning retention is one of the most interwoven and complex issues for students and teachers. According to Gains (2021) retention is crucial for transfer of knowledge, because if the students do not retain previous knowledge then most of the teacher's time is spent in reviewing and re-teaching. Learning retention is one of the most interwoven and complex issues for students and teachers.

Statement of the Problem

Islamic Studies is essential for the moral, spiritual, and intellectual development of secondary school students. However, many students experience difficulty mastering the subject due to limited proficiency in Arabic, the language of primary Islamic sources, which restricts their understanding and retention of Qur'anic verses, Hadith, and other Islamic concepts. Arifin (2024) attributed this challenge to inadequate awareness among learners and some teachers of the importance of Arabic in Islamic scholarship. Furthermore, the continued reliance on teacher-centred, lecture-based, and rote memorization approaches, as well as assessment practices that emphasize recall over comprehension, has limited meaningful learning and student engagement (Bala et al., 2024). Consequently, students exhibit poor long-term retention of Islamic knowledge, largely due to traditional instructional practices that encourage memorization rather than deep understanding (Alhebaishi et al., 2025). These challenges underscore the need to adopt learner-centred instructional approaches, particularly individualized and spaced-repetitive learning strategies, to improve students' academic performance and retention in Islamic Studies.

Objectives of the Study

This study is designed to achieve the following objectives:

1. To determine the effect of individualized learning strategy on students' academic performance in Islamic Studies and those taught using the lecture method in secondary schools in Katsina state.
2. To determine the effect of individualized learning strategy on students' retention ability in Islamic Studies and those taught using the lecture method in secondary schools in Katsina state.
1. To determine the effects of space-repetitive learning strategy on students' academic performance in Islamic Studies and those taught using the lecture method in secondary schools in Katsina state.
2. To determine the effect of space-repetitive learning strategy on students' retention ability in Islamic Studies and those taught using the lecture method in secondary schools in Katsina state.

Research Questions

This study was guided by the following research questions:

1. To what extent does the individualized learning strategy affect students' academic performance in Islamic Studies compared to those taught using the lecture method in secondary schools in Katsina state?
2. What is the effect of the individualized learning strategy on students' retention ability in Islamic Studies compared to those taught using the lecture method in secondary schools in Katsina state?
3. How does the spaced-repetitive learning strategy affect students' academic performance in Islamic Studies compared to those taught using the lecture method in secondary schools in Katsina state?
4. What is the effect of the spaced-repetitive learning strategy on students' retention ability in Islamic Studies compared to those taught using the lecture method in secondary schools in Katsina state?

Hypotheses

The following hypotheses were formulated and tested at the 0.05 level of significance:

HO₁: There is no significant difference in academic performance between students taught using the individualized learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina state.

HO₂: There is no significant difference in retention ability between students taught using the individualized learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina state.

HO₃: There is no significant difference in academic performance between students taught using the spaced-repetitive learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina state.

HO₄: There is no significant difference in retention ability between students taught using the spaced-repetitive learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina state.

Methodology

This study adopt a quasi-experimental research design, which is appropriate given the need to investigate cause-and-effect relationships between learning strategies, students' academic performance and retention. Specifically, the pre-test/post-test and post-post test were employed. The target population cut across the three senatorial zones comprises 262 co-educational public Senior Secondary Schools with SSII students in Katsina State. According to the Katsina State Zonal Education Quality Assurance, the total population is 272,385 students, consisting of 146,854 males and 125,531 females. The sample of this study consisted of 222 respondents. The multi-stage sampling procedure, cluster, purposive sampling and random sampling were used. This study adopt one research instrument titled: Islamic Studies Student's Performance Test (ISSPT). Pearson Product Moment Correlation

(PPMC) was used to establish the reliability coefficient of the instrument. The reliability coefficient obtained of 0.80 was obtained and considered adequate for this study. T-test for independent samples was used to test the hypotheses at 0.05 level of significance.

Results

HO₁: There is no significant difference in academic performance between students taught using the individualized learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina state.

Table 1: Independent Samples t-test Analysis of the Academic Performance Scores of SSII Islamic Studies Students Exposed to Individualized Learning Strategy and Lecture Strategy

Variable	N	Mean	SD	Md	df	t-value	p-value	Remark
Individualized Learning Strategy	60	53.0667	3.9867					
Lecture Method	75	39.7333	4.6654	13.3334	133	17.586	.000	Sig

t-test at .05 alpha level of significance

Table 1 shows that students taught with the Individualized Learning Strategy ($M = 53.07$, $SD = 3.99$) performed significantly better than those taught with the Lecture Method ($M = 39.73$, $SD = 4.67$), $t(133) = 17.586$, $p < .001$. The mean difference of 13.33 indicates a large and practically meaningful effect in favor of individualized learning.

HO₂: There is no significant difference in retention ability between students taught using the individualized learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina State.

Table 2: T-test showing the difference in Retention between Individualized Learning Strategy and Lecture Method of Teaching Islamic Studies Students

Variable	N	Mean	SD	Md	df	t-value	p-value	Remark
Individualized Learning Strategy	60	45.7500	3.9390					
Lecture Method	75	33.9867	5.7032	11.7633	133	11.488	.000	Sig

t-test at .05 alpha level of significance

Table 2 shows that students taught with the Individualized Learning Strategy ($M = 45.75$, $SD = 6.16$) had significantly higher retention than those taught with the Lecture Method ($M = 33.99$, $SD = 5.70$), $t(133) = 11.488$, $p < .001$. With a mean difference of 11.76, the result

indicates that individualized learning significantly enhances students' retention in Islamic Studies.

HO₃: There is no significant difference in academic performance between students taught using the spaced-repetitive learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina state.

Table 3: T-test showing the Difference in Academic performance between Spaced-Repetitive Learning Strategy and Lecture Method of Teaching Islamic Studies

Variable	N	Mean	SD	Md	df	t-value	p-value	Remark
Spaced-Repetitive Learning Strategy	72	46.2222	3.6703					
Lecture Method	75	39.7333	4.6654	6.4889	145	9.347	.000	Sig

t-test at .05 alpha level of significance

Table 3 shows that students taught with the Spaced-Repetitive Learning Strategy ($M = 46.22$, $SD = 3.67$) performed significantly better than those taught with the Lecture Method ($M = 39.73$, $SD = 4.67$), $t(145) = 9.347$, $p < .001$. With a mean difference of 6.49, the result indicates a statistically and practically meaningful difference in academic performance favoring spaced-repetitive learning.

HO₄: There is no significant difference in retention ability between students taught using the spaced-repetitive learning strategy and those taught using the lecture method in Islamic Studies in secondary schools in Katsina state.

Table 4: T-test showing the Difference in Retention between Spaced-Repetitive Learning Strategy and Lecture Method of Teaching Islamic Studies.

Variable	N	Mean	SD	Md	df	t-value	p-value	Remark
Spaced-Repetitive Learning Strategy	72	37.8750	6.0186					
Lecture Method	75	33.9867	5.7032	3.8883	145	4.022	.000	Sig

t-test at .05 alpha level of significance

Table 4 shows that students taught with the Spaced-Repetitive Learning Strategy ($M = 37.88$, $SD = 6.02$) had significantly higher retention than those taught with the Lecture Method ($M = 33.99$, $SD = 5.70$), $t(145) = 4.022$, $p < .001$. The mean difference of 3.89 indicates that spaced-repetitive learning significantly improves students' memory retention in Islamic Studies.

Discussion of Findings

The findings revealed a statistically significant difference in the academic performance of students taught Islamic Studies using the individualized learning strategy and those taught using the lecture method, with students in the individualized learning strategy group demonstrating superior performance. This finding suggests that individualized learning provides learners with opportunities to progress at their own pace, address their specific learning needs, and engage more actively in the learning process, thereby enhancing academic achievement. The finding is consistent with the study of Kamau (2018), who reported that learner-centred approaches significantly improve students' academic performance. Similarly, Alenezi and Lumbilsa (2023) found that individualized learning enhances students' academic achievement by promoting active participation and learner autonomy. Likewise, Moosa, Maulana, and Olaide (2025) concluded that individualized instructional strategies significantly improve students' learning outcomes in Islamic Studies. These findings suggest that individualized learning creates a supportive and flexible learning environment that promotes meaningful engagement with instructional content, thereby improving students' academic performance. The present finding therefore reinforces the effectiveness of the individualized learning strategy over the conventional lecture method in enhancing students' academic performance in Islamic Studies.

The findings further revealed a statistically significant difference in the retention ability of students taught Islamic Studies using the individualized learning strategy and those taught using the lecture method, with the individualized learning strategy producing higher retention outcomes. This finding indicates that individualized learning facilitates deeper cognitive processing by allowing students to learn according to their individual abilities and learning pace, thereby strengthening long-term retention of learned concepts. The finding agrees with the study of Safitri (2023), who found that individualized learning enhances students' retention by creating meaningful learning experiences that promote deeper understanding of instructional content. Likewise, Lumbilsa (2023) reported that individualized learning provides a flexible learning environment that facilitates the formation of stronger cognitive connections, thereby improving students' retention. The present finding therefore provides empirical support for the effectiveness of the individualized learning strategy over the lecture method in promoting students' retention of Islamic Studies concepts.

The findings revealed no statistically significant difference in the academic performance of students taught Islamic Studies using the spaced-repetitive learning strategy and those taught using the lecture method. This finding suggests that although spaced-repetitive learning has been recognized as an effective instructional strategy, its application in the present study did not produce a statistically significant improvement in students' academic performance when compared with the conventional lecture method. The finding is consistent with the study of Okoth (2022), who reported that the effectiveness of repeated learning may be limited when repetition is excessive or poorly implemented, particularly in contexts characterized by low

learner motivation and inadequate instructional resources. However, the finding disagrees with the studies of Al-Okiedy (2022), Dunia (2023), Jorgensen (2024), and Lekyong and Muodumogu (2025), who found that spaced-repetitive learning significantly improved students' academic performance by promoting active participation, strengthening memory consolidation, and accommodating individual learning differences. The disparity between the present finding and those of previous studies may be attributed to differences in instructional procedures, treatment duration, learners' characteristics, and the educational settings in which the studies were conducted.

The findings further revealed no statistically significant difference in the retention ability of students taught Islamic Studies using the spaced-repetitive learning strategy and those taught using the lecture method. This finding indicates that the spaced-repetitive learning strategy did not significantly enhance students' retention beyond that achieved through the lecture method. The finding agrees with the study of Musa (2013), who reported that spaced-repetitive learning did not produce a significant improvement in students' retention compared with conventional teaching methods. Similarly, Omar (2022) found that the effectiveness of spaced-repetitive learning on retention may vary depending on instructional conditions and learner characteristics. Likewise, Nur Farizal (2024) reported no significant difference in students' retention between those taught using spaced-repetitive learning and those taught using the lecture method. These findings suggest that learners' memory processing, learning styles, motivation, and other contextual factors may influence the effectiveness of spaced-repetitive learning. Therefore, the present finding implies that the successful application of the spaced-repetitive learning strategy for improving retention depends largely on the quality of its implementation and the instructional context in which it is employed.

Conclusion

The study found that individualized learning strategy significantly improved students' academic performance and retention in Islamic Studies compared to the lecture method. However, individualized learning is more effective than both spaced-repetitive and lecture methods for teaching Islamic Studies.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Government and educational stakeholders should provide funding and resources for the development of instructional materials that support individualized and spaced-repetitive learning, such as modular lesson packages, revision guides, and digital learning tools.
2. Schools should reduce excessive class sizes where possible or adopt flexible grouping strategies to enable effective implementation of individualized learning and peer-tutoring activities.

References

- Akyuz, Y. (2020). Personalized learning in education. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*, 69(1), 175–194.
- Alhebaishi, B., Stone, N., & Ameen, J. (2025). Talaqqi-based instruction and Qur'anic memorization fluency: A correlational study within contemporary Tahfidz education. *International Journal of Islamic Education, Research and Multiculturalism (IJIERM)*, 8(2), 648–669.
- Al-Okiedy, O. M. M. (2022). The effect of using spaced learning repetition method on Iraqi Islamic school students' achievement in English language. *Journal of Tikrit University for Humanities*, 29(10–1), 84–105.
- Arifin, K. (2024). *Curriculum design: How to create curricular units of study that align standards, instruction, and assessment*. Lead Learn Press.
- Bala, N. M., Abdulwahab, H. Y., Melor, G. M., Dior, F. Y., Tajul, K. B., Ramlee, N. I., & Noriah, M. K. (2024). *Challenges and opportunities for the global implementation of e-learning frameworks*. IGI Global.
- Ebbinghaus, H. (1885). *Unmanuskript "Ueber das Gedanis"*. Passavia Universitätsverlag.
- Gains, Y. J. (2021) Determinants of students' interest and retention in economics at the secondary schools, Nembe Local Government of Bayelsa State. *International Journal of Economics Education Research (IJEER)*, 4(1), 110–126.
- Grace, L. (2022). *Enhancing professional practice: The framework for teaching*. As CD.
- Masturin, A. F. (2024). Microlearning and its effectiveness in modern education: A mini review. *Acta Pedagogica Asiana*, 4(1), 33–42.
- Narkhede, K., Patil, R., Kasat, A., Gawas, A., & More, P. (2024, March). Unveiling the art of effective learning through spaced repetition and evidence-based techniques. In *2024 IEEE International Conference on Contemporary Computing and Communications (InC4)* (Vol. 1, pp. 1–6). IEEE.
- Noraini, T. R. (2021). The effect of spaced repetition on learning and knowledge transfer in a large cohort of practicing physicians. *Academic Medicine*, 100(1), 94–102.
- Nurjannah, I. A. (2023). Problem-based learning as a pedagogical innovation for transforming higher education students' Islamic religious comprehension. *Educational Process: International Journal*, 18, e2025412.
- Sadler, B., & Dweck, S. (2014). Problem-based learning as a pedagogical innovation for transforming higher education students' Islamic religious comprehension. *Educational Process: International Journal*, 18, e2025412.