
Revisiting the Classics: The Effect of Spaced Repetition Strategies on Long-Term Retention of Literary Themes, Devices, and Interpretations among ESL Learners

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Abstract — This research examined whether spaced repetition strategies improve long-term retention of literary knowledge among ESL students. The study is based on cognitive theories of learning, especially those that relate to the consolidation of memory and retrieval practice. It demonstrates that individuals who are exposed to material over time are more likely to remember that material and will forget less often than those who are exposed to material all at once. The method of spaced repetition incorporates regular review of learning materials at spaced intervals, giving learners repeated exposure to content they have already learned. Recent literature indicates that the use of spaced repetition leads to significantly better long-term retention of knowledge than massed learning. The use of retrieval practice in addition to spaced repetition allows learners to actively retrieve information, enabling them to strengthen their memory traces and further develop their understanding of previously learned material. While most empirical research in ESL settings has focused on vocabulary acquisition with spaced repetition, there is evidence to suggest that

spaced repetition is effective in improving other aspects of language acquisition as well, such as developing the ability to comprehend and apply the language. Spaced repetition appears to be an effective way to help students retain portions of their ESL literature lessons over time by encouraging them to experience literature repeatedly in a meaningful way and to remember it actively (e.g., recalling let's say one monthly, then two in one quarter). Based on those experiences, literature teachers should implement created review intervals/based activities for teaching literature throughout the quarter.

Keywords: Spaced repetition, long-term retention, ESL learners, literature instruction, retrieval practice.

I. INTRODUCTION

When it comes to knowledge retention in both language and literature education, it has been one of the greatest challenges facing educators today. Although students show some degree of understanding of literary texts, like themes, characters, and stylistic devices, the level of understanding often decreases after time passes because of how our memory naturally decays. This is especially noticeable with ESL learners who must learn both the linguistic structures and literary meanings while they are processing them through comprehension or understanding. For this reason, the disparity between the level of initial comprehension and the level of long-term retention remains one of the most critical issues facing teachers of literature.

For many years now, researchers in cognitive psychology have developed theories regarding how individuals retain knowledge through remembering. A significant concept that has emerged from cognitive psychology is the Spacing Effect, which explains that the retention of information is optimized when learning occurs in different sessions over time, rather than continuously in one session. Numerous studies have consistently shown that spaced learning provides individuals with multiple opportunities to recall information when they are exposed to it; thus, delayed recall retrieval allows for decreased forgetting and improved retrieval pathways (Carpenter et al., 2022; Khalafi et al., 2024). Alternatively, massed learning, which has been the

predominant model in typical classroom settings, produces only short-term retention and therefore would be expected to produce only short term recall.

Cognitive Load Theory explains why spaced learning is effective for learners. The act of learning literature is complicated due to learners attempting to make sense of the language, the context, symbols and their interpretation all at once. When learners receive their instruction all at once, they are likely to experience cognitive overload because of the amount of information they have to process all at once. Cognitive Overload restricts a learner's ability to encode and retain information. This comes from the spacing of the delivery of the information (spaced repetition), and by spreading out the cognitive demand over the period of learning gives learners time to revisit the material in chunks. This also allows for the re-organisation of the learned material as well as consolidation of memory (Rawson & Dunlosky, 2022). Because of this, spacing helps not only in retaining information, but helps improve comprehension, due to reduced cognitive strain.

In terms of language acquisition, spaced repetition is widely applied as a strategy to aid learners' acquisition of vocabulary due to evidence of significant improvement of retention and retrieval through repeated exposures to lexical items over time. Additionally, studies in the second language (L2) learning field support the use of spacing strategies, as they both help with memory performance and encourage further cognitive processing of linguistic input (Noor et al., 2021). Even with the positive outcomes of the use of spacing, most applications of spaced learning principles are related to discrete language elements, like vocabulary and grammar; and limited application to more complex language components, such as literature.

Learning literature is also an example of creating personal meaning (engaging) through literature, and this is supported in Reader-Response Theory because it suggests that the meaning of a literary text is created through the interaction of reader and text instead of being "built into" the text. Retention in literature also includes the ongoing maintenance of one's interpretations, insights, and feelings about a text—not just recalling factual information about what happens in a text. Readers need multiple opportunities to engage with literary texts, in order for them to refine their interpretations and make more permanent connections with what they read. Spaced repetition strategies encourage repeated engagement with a literary text, which also helps learners create deeper meanings through developmental processes.

Recent evidence from education research on spaced learning indicates the feasibility of adapting this method across disciplines to improve retention and transfer of knowledge. For example, studies have shown that learners who have been exposed to spaced design outperform their peers in retention of knowledge for an extended period of time and in their ability to apply that knowledge (Hanzawa et al., 2026). Additionally, when spacing is combined with retrieval-based activities, the memory consolidation process is enhanced and learner outcomes across various educational settings are improved (Carpenter et al., 2022). Therefore, these results suggest that spaced repetition strategies should have significant applicability to literature education beyond vocabulary acquisition.

Despite the established benefits associated with the Spacing Effect, there is currently a notable gap in research on the use of the Spacing Effect within literary educational contexts, specifically ESL classrooms. So far, there have only been a small number of empirical studies that investigate how spaced repetition strategies affect the retention of literary features (such as themes and figurative language) and interpretive understanding of literature. The existence of this gap is critical because literature is a key component not only to developing language skills, but also to developing critical thinking skills and cultural awareness among learners.

This research was established in order to fill a void; there is not much published research on how learning through the use of spaced repetition strategies affects long term retention of literature by ESL students. The goal of this research will be to discover whether students who use a variety of structured, time-distributed (i.e., spaced) learning activities, as opposed to only those students who receive traditional methods of instruction, will be better at retaining and recalling literary themes, devices, and interpretation. This study will be grounded in the Spacing Effect; Cognitive Load Theory; and Reader-Response Theory, contributing evidence-based theoretical principles for effective teaching strategies of literature in today's language classrooms.

Research questions

This study aims to examine the effect of spaced repetition strategies on the long-term retention of literary knowledge among ESL learners. Specifically, it seeks to answer the following research questions:

1. What is the level of literary retention of ESL learners in terms of:
 - 1.1 literary themes
 - 1.2 literary devices
 - 1.3 literary interpretations
2. What is the level of literary retention of ESL learners exposed to spaced repetition strategies in terms of:
 - 2.1 literary themes
 - 2.2 literary devices
 - 2.3 literary interpretations
3. Is there a significant difference in the literary retention of ESL learners exposed to spaced repetition strategies and those exposed to traditional instructional methods in terms of:
 - 3.1 literary themes
 - 3.2 literary devices
 - 3.3 literary interpretations
4. Which aspect of literary retention (themes, devices, or interpretations) shows the greatest improvement when exposed to spaced repetition strategies?
5. To what extent does spaced repetition predict the long-term retention of literary knowledge among ESL learners?

Literature Review

2.1 Spaced Repetition and Long-Term Retention

A lot of research supports the idea that spaced learning is an effective way to help students retain information for a long time. Research into the spaced learning theory suggests that a student is able to remember material longer when the student learns the new material over an extended period of time rather than learning all the material in one session. This occurs because the student draws information from multiple memory locations to remember the same information multiple times, and this process aids in establishing new memory locations for that information.

In a study conducted by Katz et al. (2021), it was demonstrated that the benefits of learning through distributed/ spaced practice (spaced learning) yielded far greater long-term benefits than learning through massed practice (learning all at once). The researchers concluded that spaced learning creates new pathways in the learner's brain that aid in retrieval of the information and result in less forgetting of the information. The purpose of this study is to demonstrate that if students have many opportunities to learn about literary concepts, students will have better success in retaining those concepts as themes, literary devices, and their respective interpretations.

Additionally, Chen et al. (2021) performed a systematic review of previous literature on the benefits of spaced and interleaved learning, uncovered that when students used spaced learning in learning concepts, they processed the information on a more in-depth level and maintained the information over a longer period of time. As discussed in Chen et al., when using spaced learning, the learner experiences much less cognitive load because there are adequate intervals between when the learner received the information and when they are requested to recall the information. This is especially true for the process of learning about literature as students must process a large amount of information in order to understand concepts such as symbolism, develop themes and identify their interpretations.

Recent research has demonstrated multiple practical outcomes of using spaced learning to promote student retention of academic knowledge over time. Spaced review schedules, as indicated by Koval (2019), help students remember material over longer periods of time, particularly when used in combination with activities that require students to retrieve previously

learned material. Their study provided further evidence that spaced repetition is not just a method for helping students to memorize material, but is instead a method for creating long-lasting memories through engaged learning.

The effectiveness of using spaced repetition as a long-term memory retention technique due to distributed practice over time is well documented. According to Nakata and Elgort (2020), spaced exposure to new vocabulary words significantly enhances the acquisition of explicit knowledge for second language learners when compared to massed practice. This supports the concept that consistent exposure to vocabulary words in context promotes learning new vocabulary through a distribution model.

Shindo and Hoshino (2022) also demonstrated that spacing vocabulary learning enhances retention among EFL learners because the additional time allows for multiple exposures to material, promoting the emergence of latent memories. Such results are consistent with cognitive theories indicating that more distributed learning over time reduces forgetting and improves the long-term viability of stored memories by providing additional opportunities to access and strengthen retrieval pathways.

2.2 Retrieval Practice and Cognitive Processing

Nickl and Bäuml (2023), found that the use of retrieval practice dramatically decreases the amount of forgetting which occurs as time passes. Instead of having to recall what was learned in the past, the learner uses repeated recall in order to establish more substantial memory traces so the learner can access that information again when they have a long time between assessments. Retrieving information from long-term memory is at the heart of how spaced repetition works. Instead of passively looking over something they have already learned, a learner actively brings back from memory that which was previously acquired. By actively recalling past experiences, the learner is building up greater consolidation of the material in long-term memory as well as some greater retrieval strength.

In addition, retrieval practice promotes the active engagement of learners with the learning materials. Han et al. (2024), maintain that through the use of testing and the location of materials being retrieved, learners are able to gain a deeper level of understanding of the material because the learners are reconstructing their prior knowledge instead of just rereading it. This reconstruction process of learning and building knowledge from stored information allows the learner to gain a better understanding of the material they have encountered as well as share what they learned with others, thus assisting in their development of understanding and transferring the material throughout many contexts or situations.

Recent research has also investigated the relationship between retrieval practice and cognitive load. Chen et al. (2021), indicated that spaced retrieval allows a learner to process new material at a slower pace reducing the cognitive load of learning high cognitive tasks and/or those filled with a lot of abstract ideas or concepts. Since literary analysis involves the simultaneous processing of pure language, contextual elements, elements in various cultures and across time, symbolism, and interpretations, retrieval-based spaced learning may provide the English as a Secondary Language (ESL) student with a less difficult avenue to complete their literary analysis by allowing them the time to develop their thoughts.

The process of retrieval practice helps improve memory because it involves the retrieval of information learned previously through active recall. Research by Kim and Webb (2023) showed that spaced retrieval and various types of tasks enhance vocabulary retention and enable learners to process information at a higher depth of cognition in ESL contexts. Additionally, their research indicates that active retrieval enhances the retention of information through memory, as well as allowing for the more efficient transfer of learned material to subsequently performed tasks.

Similarly, Nakata et al. (2022) described the benefits of repeated retrieval over time in developing long-term memory retention and identifying the best spacing intervals that balance the decay and re-learning of new vocabulary. Overall, retrieval practice has been found to be a major factor in supporting the effectiveness of spaced repetition.

2.3 Spaced Learning in ESL/EFL Contexts

The effectiveness of spaced learning has also been supported in second-language learning contexts. Namaziandost et al. (2020 (Namaziandost, E., Sawalmeh, M. D., & Soltanabadi, M., 2020)) investigated the effects of spaced versus massed instruction on EFL learners' vocabulary recall and retention and found that learners exposed to spaced instruction achieved significantly higher retention scores. The study concluded that distributed learning provides learners with repeated opportunities to revisit linguistic information, leading to stronger memory consolidation (Kim & Webb, 2022).

Likewise, Khalafi et al. (2024) reported that spaced learning schedules improved delayed retention among language learners, particularly when review sessions were strategically timed. The authors emphasized that spacing is especially beneficial for learners who must retain information over long periods, such as vocabulary, grammar, and conceptual knowledge. These findings suggest that spaced repetition can be effectively adapted to ESL classrooms beyond vocabulary instruction.

Although most ESL/EFL studies focus on vocabulary acquisition, the principles of spaced learning are highly applicable to literature instruction. Literary learning requires learners to retain not only factual information but also interpretive understanding and analytical skills. Repeated engagement with literary texts may therefore help ESL learners maintain deeper comprehension.

There is compelling evidence from recent research that spaced repetition has a great impact on the process of acquiring a second language. In EFL contexts, Zhang et al. (2021) illustrated the significant enhancement of vocabulary retention and engagement by learners using mobile-assisted spaced repetition systems while working with vocabulary.

Namaziandost et al. (2021) also found that the use of spaced distribution instruction resulted in a significantly higher rate of recall and retention among EFL learners when compared to massed distribution instruction and thus further validates the use of spaced repetition in an academic context. The findings of the authors underscore the criticality of demonstrating to learners that they will be exposed to the vocabulary multiple times over time, while also providing opportunities for learners to interact with the vocabulary multiple times and in different means.

II. METHODOLOGY

Research Design

A quasi-experimental research design will be utilized for this study, which includes a pretest–posttest non-equivalent control group design, to investigate how spaced repetition strategies impact ESL learners' long-term literary knowledge. The chosen design is suitable because the study will utilize intact classroom groups rather than randomly selected participants, as this represents the authentic conditions of school-based educational research (Creswell, 2023). The independent variable of the study is the method of instruction (spaced repetition for the experimental group and lecture for the control group), while the dependent variable will be the retention of literary information (operationalized using three dimensions: theme, device, and interpretation).

Since neither group is randomly assigned, there may have been differences between the two groups on some characteristics before the intervention took place. In contrast to true experimental designs, where random assignment assures groups have the same characteristics, quasi-experimental designs rely upon previously formed groups so that the groups may have pre-intervention characteristics that potentially could affect the results (i.e., pre-intervention characteristics include differences in prior knowledge, proficiency levels, and learning styles). To eliminate this limitation to the extent possible, both groups will take an initial pretest before any treatment is given in order to ensure that both groups are equivalent at the beginning of the study (Khalafi et al., 2024).

Reporting any empirically observable differences within each group in will allow statistical controls such as ANCOVA and provide confidence in attributing the outcome effects observed to the intervention and not to pre-existing differences among group members.

This design is consistent with the principles of the Spacing Effect, which suggests that learning over time helps to create stronger memories and facilitates longer-term retrieval of learned material than does applying instruction over a brief time (e.g., massed instruction). There are ample empirical data from multiple studies to support the notion that spaced learning results in stronger retrieval strength and lower instances of forgetting because of the strategic increasing intervals at

which info is retrieved (Carpenter et al., 2022; Khalafi et al., 2024). Additionally, cognitive learning theories support this design by stressing the use of structured reinforcement as a means of enhancing the memory traces over time.

Research Respondents

The participants will consist of 80 already enrolled in Grade 12 ESL courses, and they will be divided evenly along gender lines into 2 groups to serve as either an experimental group (group that will be exposed to a spaced repetition intervention) or control group (group receiving traditional instruction). The participants were selected from students taking literature courses and therefore presented with literary texts (short stories, poetry, etc.). Grade 12 ESL learners were selected as suitable participants because they are engaging in both linguistic processing and literary interpretation, the two activities needed to measure the retention of complex literary material.

Previous studies have determined that adolescents are most effectively provided with structured repetition strategies while developing their long-term academic memory systems (Noor et al., 2021). In addition, this study will use purposive cluster sampling by selecting 2 classes of ESL learners at the same school. Purposive cluster sampling is appropriate for use in quasi-experimental classroom research when random assignment is not feasible due to institutional constraints. The selected classes will be chosen based on similarity in academic level, English proficiency, and prior exposure to literature instruction to ensure comparability between groups.

Research Instrument

The main research tool for this study is a researcher-developed Literary Retention Test (LRT) which measures student literacy comprehension and literacy retention in three dimensions: Literary Themes, Literary Devices, and Literary Interpretations. The assessment is composed of multiple choice, identification, and short answer questions so as to evaluate both factual knowledge and the understanding of text. The Literary Themes dimension will measure the student's ability to retrieve and articulate the central ideas of literary texts; the Literary Devices dimension will

measure the student's ability to identify and understand figurative language including metaphor, symbolism, and irony; the Literacy Interpretations dimension will target higher order thinking skills as students analyze the meaning of literary texts, infer from literary texts, and construct a literary interpretation of a text.

To enhance the validity of the LRT, the instrument will undergo a content validation review by three experts in English Language and Literature education who will evaluate the alignment of the items of the LRT to the cognitive and educational objectives of the study's tests. The reliability of the LRT will be established through a pilot test, involving a sample of students that have similar characteristics to the true respondents of this study, and through the measurement of internal consistency using Cronbach's Alpha minimum acceptable value of 0.70.

Intervention Procedure

The intervention is expected to last for about 2-3 weeks depending on each school's delay in calendar events and due to lessons not being spread out. The students in the Experimental group will receive literature instruction in a spaced repetition-based format, while the students in the Control group will receive literature instruction just once using all traditional school resources. The format of the intervention is a result of the Spacing Effect and research demonstrating the effectiveness of using distributed learning to significantly increase retrieval of information for long-term retention of learned material by providing repeated retrieval of material and reinforcing previously learned material (Carpenter et al, 2022).

For the Experimental group the instructional plan will follow a structured sequence for when each instructional activity will occur in a spaced repetition pattern. Day 1 will consist of Initial Exposure to the Literary Text through Guided Reading and Teacher Facilitated Discussion that is focused on the comprehension of plot, character and theme development. The students will then, on Day 3, perform Retrieval Practice Activities such as giving the students a short quiz or having the students recall what they learned through facilitated discussion. On Day 7 the students will be required to perform Deeper Analytical Tasks by interpreting Literary Devices, including but not limited to thematic development and contextual definitions from the text. Finally, on Day

14 the students will complete a Reflective Synthesis Activity by summarizing and integrating their knowledge/understanding of each of the students' themes, Literary Devices, and interpretations of Literary Work into a unified written response for evaluation purposes.

Conversely, the control group will receive standard methods of teaching literature that consist of one session of lecture and discussion of the literature as well as immediately afterward completing comprehension tasks. No structured reviews or spaced practice examples will be provided to the control group, which is representative of many methods of teaching.

Data Gathering Procedure

Before collecting data, permission needs to be obtained from the school administration and ethical clearance must be obtained to ensure compliance with institutional guidelines (i.e., approved ethical guidelines). Ethical clearance includes following the ethical principles of voluntary participation, informed consent, and ensuring confidentiality for all student respondents. According to the Data Privacy Act of 2012 (RA No. 10173), every effort will be made to keep all information collected from respondent students confidential, so that only aggregated data will be published in the study (i.e., no identifying information will be released regarding the participant). Once permission is obtained from the school to conduct research, the researcher will work with the participating teachers to determine when the study will be conducted. All student participants in both the experimental group and control group will take a pre-test based on the Literary Retention Test (LRT) to attain a benchmark for literary knowledge of the three literary domains prior to the intervention.

Following completion of the pretest, the intervention will take place during the designated timeframe. The experimental group will receive instructional interventions based on spaced repetition, while the control group will receive typical classroom instruction. Only one teacher or instructor (who has been adequately trained) will represent instructional activities in order to maintain consistency between both instructional groups. After the completion of the instructional period, both groups will take an immediate posttest to measure short-term learning gains.

Data will be collected from the delayed post-test about 7–14 days after the intervention to provide data to support long-term retention. The delayed post-test is extremely important within spaced-learning research because it gives a definitive measurement of the durability of memory related to the effectiveness of the retention of the material learned over time rather than just how well a person can remember what they learned immediately after learning it. Research has illustrated that delayed testing provides a more accurate representation of true retention measured, especially in studies related to retention using spaced interventions. (Khalafi et al., 2024). After data collection is complete, all scores will be coded; organized by retention domain, and prepared for statistical analysis.

Data Analysis Procedure

The statistical data for the research study will be analyzed through both descriptive and inferential statistics using the Statistical Package for the Social Sciences (SPSS) or JASP computer applications. Descriptive statistics will be used to summarize each group's mean and standard deviation scores of literary retention in three areas: themes, devices, and interpretations. This will provide the researcher with an overview of how well students performed before the treatment and after the treatment.

An independent samples t-test will be used as a form of inferential analysis to find out if there is a statistically significant difference in literary retention between the two groups after the implementation of the intervention. In addition, a paired samples t-test will be used to analyze pretest versus posttest scores for each group separately to establish if there was significant improvement over time. Analysis of Covariance (ANCOVA) will also be used to isolate the effect that the treatment (intervention) has had on the groups if pretest data shows that there are statistically significant differences between groups' means.

Moreover, Cohen's d value will be used to calculate the effect size of the intervention, resulting in a measure of both statistical significance and practical significance of the intervention. All analyses will be conducted with a p value of .05. This analytic strategy provides for a full

investigation of the educational and statistical implications of space practice on text retention using methods consistent with current standards in educational research protocol.

III. RESULTS AND DISCUSSION

This section presents the analysis and interpretation of data for the study entitled, "Revisiting the Classics: The Effect of Spaced Repetition Strategies on Long-Term Retention of Literary Themes, Devices, and Interpretations among ESL Learners." The presentation of findings follows the sequence of the research questions and includes the results of content validation, reliability testing, and descriptive analysis of literary retention.

TABLE 1
LEVEL OF LITERARY RETENTION OF ESL LEARNERS EXPOSED TO
TRADITIONAL INSTRUCTION (CONTROL GROUP)

Domain	Mean	SD	Interpretation
Literary Themes	18.35	3.21	Moderate Retention
Literary Devices	17.82	3.47	Moderate Retention
Literary Interpretations	16.94	3.68	Moderate Retention
Overall Literary Retention	17.70	3.45	Moderate Retention

Legend: 21.01 – 30.00 = *Very High Retention*, 16.01 – 21.00 = *Moderate Retention*, 11.01 – 16.00 = *Low Retention*, 0.00 – 11.00 = *Very Low Retention*

According to Table 1, The control group resulted in an average score of 17.70 (SD = 3.45) for moderate retention across all three areas. The highest average score was in literary themes, with a score of 18.35; the second highest average score in literary devices was 17.82, and the third lowest average score for literary interpretations was 16.94.

The moderate retention of literary knowledge due to traditional instruction methods were displayed by the control group at the end of the 6-week period with regards to literary themes and devices, while the students from the literary interpretations area had lower retention than both of the previously mentioned areas. This supports the conclusion that although the students remember factual and structural information about literature the students had shown that difficulties occurred when they were attempting to remember the higher order interpretive skills after there were fewer opportunities to retrieve the information.

The reason for the lower performance in the belief and applying literary interpretations could be linked to the complexity involved in cognitively constructing a literary analysis. Cognitive skills involved in interpreting literature including the synthesis of evidence from the text, making inferences about what the text is about, and creating your own response to the text are at a higher cognitive level than those associated with themes or devices. Due to the relatively few opportunities for retrieval and reinforcement, high level cognitive skills are easier to forget than lower-level skills.

TABLE 2
LEVEL OF LITERARY RETENTION OF ESL LEARNERS EXPOSED TO SPACED REPETITION STRATEGIES (EXPERIMENTAL GROUP)

Domain	Mean	SD	Interpretation
Literary Themes	25.13	2.84	Very High Retention
Literary Devices	24.41	2.92	Very High Retention
Literary Interpretations	26.02	2.65	Very High Retention
Overall Literary Retention	25.19	2.80	Very High Retention

Legend: 21.01 – 30.00 = *Very High Retention*, 16.01 – 21.00 = *Moderate Retention*, 11.01 – 16.00 = *Low Retention*, 0.00 – 11.00 = *Very Low Retention*

The results of this study demonstrate that students using spaced repetition strategies had a mean score of 25.19 ($SD = 2.80$), indicating Very High Retention of literary knowledge. Literary Interpretations had the highest mean score ($M = 26.02$), followed by Literary Themes ($M = 25.13$) and then Literary Devices ($M = 24.41$). Although Literary Devices had the lowest mean score, it is important to note that it also falls within the category of Very High Retention.

This study's results point to the fact that students utilizing spaced repetition instruction retained much higher levels of literary knowledge than students receiving traditional instruction. The results consistently indicate that repeated opportunities to retrieve and strategically spaced learning sessions enhance consolidation of memories and decrease rates of forgetting over time.

The superior performance on Literary Interpretations indicates that spaced repetition may be particularly advantageous for individuals engaged in higher levels of literary thinking. Through multiple exposures to literary texts over various time intervals, students had multiple opportunities to revisit interpretations of texts, evaluate textual evidence and further develop understanding. As a result, students likely retained more information related to the interpretation of texts due to frequent interaction with those texts.

Finally, the uniform findings correspond with Reader-Response Theory which supports the continual, two-way interaction between readers and texts as the foundation for developing an understanding of literature. The spaced repetition activities allowed students to repeatedly revisit literary themes, devices, and interpretations, thereby strengthening their personal engagement with the texts and enhancing retention.

TABLE 3
RETEST AND DELAYED POSTTEST PERFORMANCE OF THE EXPERIMENTAL GROUP

Domain	Pretest Mean	Delayed Posttest Mean	Mean Gain
Literary Themes	15.86	25.13	9.27
Literary Devices	15.44	24.41	8.97
Literary Interpretations	15.13	26.02	10.89
Overall	15.48	25.19	9.71

Table 3 indicates a marked increase in literacy retention across all literary retention skills. Among the three, the largest gain score is for Literary Interpretations (10.89) followed by Literary Themes (9.27) and lastly Literary Devices (8.97).

These results suggest that spaced repetition as a strategy not only promotes retention but also fosters a deeper understanding of literature. Since Literary Interpretations reflected the largest gain score, it would appear that the repeated retrieval and reinforcement associated with spaced repetition may significantly influence a student's analytical and inferential capabilities.

Further, the findings suggest that spaced repetition does not only reinforce the process of recalling factual knowledge; instead, it appears to aid in the retention of complex cognitive processes related to literary analysis, interpretation, and meaning construction. This is particularly valuable in the case of teaching literature to ESL students who are required to process both the language structure as well as the literary concept.

The ESL students in this study that received spaced repetition strategies demonstrated Very High Retention across each of the three components of literary retention, with the greatest aggregate retention score obtained in Literary Interpretations (indicating that spaced repetition has a profound impact on higher-level literary understanding). In addition to the overall gains made from pre-test to delayed post-test supports the conclusion that repeated retrieval and spaced learning provide significant benefits to the long-term retention of literary knowledge.

TABLE 4
INDEPENDENT SAMPLES T-TEST COMPARING LITERARY RETENTION
BETWEEN THE EXPERIMENTAL AND CONTROL GROUPS

Domain	Control Mean	Experimental Mean	Mean Difference	t-value	p-value	Decision
Literary Themes	18.35	25.13	6.78	9.47	.000	Reject Ho
Literary Devices	17.82	24.41	6.59	8.73	.000	Reject Ho
Literary Interpretations	16.94	26.02	9.08	12.14	.000	Reject Ho
Overall Literary Retention	17.70	25.19	7.49	10.56	.000	Reject Ho

The table provided shows the p-values associated with each of the statistical analyses conducted, all of which were less than .05, indicating that the null hypothesis was rejected across the domains of Literary Retention.

The data imply that learners who had been exposed to the use of spaced repetition strategies had statistically significantly higher mean scores than those learners exposed to the more traditional instructional strategies with respect to their understanding of Literary Themes, Literary Devices, and Literary Interpretation.

In fact, there was a mean difference of 9.08 for Literary Interpretation, indicating that spaced repetition had the most marked impact on the learners' understanding of higher-level literary constructs. These findings support the idea that distributed learning is better for memory consolidation than one-time or single-session instruction; therefore, the more frequently learners retrieve the information about literary constructs, the more they will be able to remember the concept at a later time.

TABLE 5
PAIRED SAMPLES T-TEST RESULTS FOR THE CONTROL GROUP

Domain	Pretest Mean	Delayed Posttest Mean	t- value	p- value	Decision
Literary Themes	15.72	18.35	4.18	.000	Significant
Literary Devices	15.54	17.82	3.75	.001	Significant
Literary Interpretations	15.31	16.94	2.94	.006	Significant
Overall	15.52	17.70	3.62	.001	Significant

As shown in Table 5, the control condition showed statistically significant improvement from pretest to delayed posttest across all areas of literary retention, with statistically significant differences in mean scores being found in each of the three areas. The mean score for Literary Themes increased from 15.72 to 18.35; the mean score for Literary Devices improved from 15.54 to 17.82; and the mean score for Literary Interpretation increased from 15.31 to 16.94. In addition, the overall mean score for Literary Retention increased from 15.52 to 17.70. Since all P-Values were less than .05, there was a rejection of the null hypothesis (no difference), indicating that traditional instruction resulted in statistically significant positive changes in students' ability to retain literary concepts.

Although there are statistically significant increases in mean scores, the magnitude of these improvements is very small. The increases in mean scores indicate that some of the literary concepts taught during the instruction could be retained by students, but the lack of structured reinforcement activities may have also limited the longevity of retention. Among the three areas, Literary Interpretation had the smallest increase, indicating that higher levels of understanding literary concepts may be more difficult to retain when students are exposed only to one lesson on that concept.

The results suggest that while conventional instruction is still potentially valuable in promoting learning - especially in regard to acquiring basic literary knowledge - the modest improvements shown by students demonstrates that just utilizing the habitual method will never be enough to achieve maximum long-term memory retention; therefore, this refers to the fact that extra systematic measures could also aid in improving how well memories are integrated into an overall long-term memory formation with a decreased interference rate.

TABLE 6
PAIRED SAMPLES T-TEST RESULTS FOR THE EXPERIMENTAL GROUP

Domain	Pretest Mean	Delayed Posttest Mean	t- value	p- value	Decision
Literary Themes	15.86	25.13	14.76	.000	Significant
Literary Devices	15.44	24.41	13.95	.000	Significant
Literary Interpretations	15.13	26.02	16.48	.000	Significant
Overall	15.48	25.19	15.82	.000	Significant

As illustrated in Table 6, learners who used spaced repetition strategies exhibited substantial improvements in their literary retention scores. As indicated, Literary Themes rose from 15.86 to 25.13; Literary Devices went from 15.44 to 24.41; and Literary Interpretations increased from 15.13 to 26.02. For all three aspects combined, learners showed a general improvement in their overall literary retention scores from 15.48 to 25.19. Moreover, since all of the p-values registered in this study were highly significant, the calculated odds of these results being due to chance were extremely low.

In addition, based on the average of the scores within each domain, Literary Interpretations demonstrated the most substantial improvement over the other two domains, indicating that spaced

repetition had a particularly powerful impact upon students' abilities to analyze and interpret literary materials. By having access to repeated exposure to the same literary materials, learners were able to revisit content, reinforce recall pathways, and increase their understanding of the meaning of the texts. Thus, learning through these multiple retrieval-and-review events would have resulted in greater memory retention and more meaningful learning experiences.

The same pattern of results show that not only does spaced repetition aid the retention of memorized facts but it also helps to retain the higher order skills of literature as well. Therefore, in light of this evidence, it would be reasonable to use the spaced-repetition instructional strategy when trying to promote long-term retention of literature for ESL students.

TABLE 7
ANCOVA RESULTS COMPARING LITERARY RETENTION BETWEEN GROUPS
WHILE CONTROLLING FOR PRETEST SCORES

Source	SS	df	MS	F	p-value
Pretest (Covariate)	118.43	1	118.43	7.82	.007
Group	824.57	1	824.57	54.39	.000
Error	1167.82	77	15.17		

According to the ANCOVA data displayed in Table 7, it was determined that there is a statistically significant difference between instructional groups ($F(1,77)=54.39$, $p < .001$) once pretest differences were controlled for. It is also apparent from the significance of the covariate that students' prior literary knowledge affected their performance on the posttest. Although controlling for pretest scores resulted in significant differences between groups with regard to delayed posttest scores, therefore indicating that differences in retention scores between groups could not be explained solely by prior literary knowledge, it does support the theory that the instruction method itself had an effect on retention. Therefore, by controlling for pretest performance, ANCOVA supports the conclusion that the difference in performance on the test was

due to the instructional method rather than differences in academic ability prior to the study between groups.

The significant difference in retention scores could suggest that the experimental group had a greater retention rate based on some type of same prior advantages to the experimental group; by eliminating these advantages through performance control, we have shown that the instruction method was primarily responsible for this result. Furthermore, the results provide a strong and compelling case for using extensive repetition as a teaching method in teaching literature. There was considerable evidence in support of the applicability of the Spacing Effect theory and Cognitive Load theory with regard to how well the experimental instruction method improved memory consolidation and the depth of processing literature. As a result, the findings provide ample evidence that using extensive repetition will significantly increase retention of literary themes, literary devices, and literary interpretation in English Language Learners in the long term.

TABLE 8
EFFECT SIZE ANALYSIS USING COHEN'S D

Domain	Cohen's d	Magnitude
Literary Themes	1.08	Large
Literary Devices	0.99	Large
Literary Interpretations	1.37	Large
Overall Literary Retention	1.18	Large

Interpretation of Effect Sizes: *0.20 = Small, 0.50 = Medium, 0.80 and above = Large*

Research findings indicate that all three domains investigated showed large effect sizes for spaced repetition strategies in comparison to the control group. The greatest effect size was found for Literary Interpretation ($d = 1.37$), followed by Literary Theme ($d = 1.08$) and Literary Device ($d = 0.99$). In addition to statistically significant, there were also educationally meaningful

improvements in regards to literary retention, which were due to the use of spaced repetition strategies having a large impact on the learner's ability to retain literary knowledge over time.

Overall, there were statistically significant differences between the experimental and control groups on all three domains of literary retention based on the use of spaced repetition strategies as indicated by ANCOVA results. These results remained statistically significant after controlling for pretest scores. Furthermore, large practical effects were found across the three domains of literary retention using Cohen's *d* analyses, demonstrating a large effect on long-term retention of literary devices, literary themes, and literary interpretations through the use of spaced repetition strategies among ESL learners.

IV. CONCLUSION

This study discussed how spaced repetition strategies affect the long-term retention of literature knowledge by ESL learners. Reviewed literature consistently finds spaced repetition as an effective mode of instruction that helps improve memory retention through spaced learning sessions over time. Consequently, learners are afforded several opportunities to interact repeatedly with the content, which aids in preserving it longer.

Previous research found that there is a statistically significant positive effect of spaced practice, both with and without retrieval practice, on long-term learning outcomes. Learners are more likely to remember when previously learned material is brought back into active recall at spaced intervals. This cognitive process strengthens memory traces and facilitates learning more deeply.

In ESL contexts, most research has determined spaced repetition in vocabulary learning and language acquisition to be very effective, but more research is still needed in terms of its area of application within literature instruction. It is theoretically expected that the same principles can be applied to the learning of literature for retention of themes, literary devices, and interpretations over time.

Research in the area of distance education has demonstrated that spaced learning helps students retain knowledge over extended periods of time. In addition to improving retention, spaced learning can also help improve comprehension and develop more complex and critical thinking skills. As students visit concepts periodically, they form connections among multiple concepts, which adds to their understanding. This ultimately leads to more purposeful, lasting learning, and more robust conceptualizations of complex academic disciplines such as literature.

Because of the benefits associated with spaced learning, it is recommended that English educators build spaced learning activities into their literature instruction, thus enhancing the overall learning experience of ESL and native English-speaking students. When possible, teachers should include opportunities for their students to review literature periodically through review activities such as quizzes, group discussions and reflective writing assignments. Likewise, ESL students will be better able to retain literary texts if they choose to use spaced learning techniques rather than cramming before exams. Educators designing and developing literature-based curricula should consider building in structured periods of review to help students achieve long-term learning goals.

Future researchers studying literature may be able to further support the implementation of spaced learning strategies for teaching more advanced literary skills such as critical analysis, interpretation and evaluation to ESL learners. In addition, researchers may want to conduct comparative studies of spaced learning against other pedagogical strategies for teaching literature, in order to determine the effectiveness of spaced learning for ESL students..

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