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Effects of Gamified Station-Rotation Instructional Approach on Students' English Language Reading Comprehension in Senior Secondary Schools in Kebbi State, Nigeria

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ABSTRACT

This study examined whether combining gamification with station-rotation activities could improve the English reading comprehension of secondary school students in Kebbi State. The study assessed not only whether the approach was effective overall, but also whether students at different levels of prior achievement responded differently to it. A total of 120 SS II students from two secondary schools in Birnin Kebbi participated: 67 in a gamified station-rotation program and 53 in conventional instruction. Reading comprehension was measured using a 40-item test covering seven skills: identifying main ideas, locating supporting details, understanding vocabulary in context, making inferences, interpreting meaning, recognizing author's purpose, and applying what was read. After six weeks of instruction, students in the gamified station-rotation group scored significantly higher on the posttest (M = 27.84, SD = 4.18) than those receiving traditional instruction (M = 22.31, SD = 4.06). After adjusting for pretest scores, this 5.53-point difference was statistically significant, $F(1, 117) = 32.47$, $p < .001$, $\eta p^2 = .217$. The benefit of the approach was not uniform across achievement levels: although students at all levels improved more under the gamified approach, average-achieving students showed the largest gains, suggesting the approach may be particularly effective for students in the middle range of performance. Because the experimental and control groups were drawn from different schools with different teachers, the findings are presented as a promising association observed under real classroom conditions rather than definitive proof of a causal effect. The results nonetheless suggest that teachers should consider adopting structured gamified station-rotation activities, with additional support built in for students who are struggling.

KEYWORDS: Gamification, station rotation, reading comprehension, prior achievement, secondary students, blended learning, differentiated instruction

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1. Introduction

Reading is one of the most fundamental skills a student can develop. When students can understand, interpret, and think critically about what they read, they gain access to knowledge across every subject, not only English. Reading comprehension, however, involves more than recognizing words on a page. It requires understanding the overall message of a text, identifying the details that support that message, determining the meaning of unfamiliar words from context, reading between the lines to grasp what is implied, recognizing how ideas connect, identifying why an author wrote a passage and what tone was used, and applying that knowledge to new situations. Students who struggle with these skills often fall behind, not only in English but across every subject that requires reading.

In Nigeria, reading comprehension has remained a persistent concern. Auta et al. (2022) found that when

teachers used more interactive teaching strategies with students in Kebbi State, rather than relying primarily on lecture, those students performed better in reading comprehension. This finding raises important questions about instructional design. However, their study focused on students in vocational training programs rather than regular secondary students, and it did not examine what happens when interactive approaches are combined with technology and structured activities. The present study addresses that gap.

One approach that has received increasing attention is gamification: the incorporation of elements that make games engaging into learning activities. Games typically provide immediate feedback, visible progress, challenges matched to skill level, and opportunities to earn points or badges. Researchers have found that when these elements are used thoughtfully, rather than added indiscriminately, they can help students remain engaged and participate more actively (Hamari et al., 2016; Sailer et al., 2017). With respect to reading specifically, Nkopuruk and Mobolaji (2025) worked with Nigerian secondary school students and found that those who used a gamified approach to reading practice improved more than students using traditional methods. Similarly, Maimaiti and Hew (2025) studied 177 university students learning English as a foreign language and found that gamified self-regulated learning improved reading comprehension while also increasing motivation and self-regulation.

A second instructional structure associated with improved outcomes is station rotation. Rather than having all students complete the same activity at the same time, students move through a series of stations, each offering a different type of learning experience. At one station, a teacher may explicitly model a reading strategy. At another, students may use technology that provides immediate feedback. At a third, students may discuss their ideas with classmates. At a final station, they may practice independently. This structure allows students to encounter the same learning goals through multiple modes and levels of support. Ogude and Chukweggu (2019) tested this approach with Nigerian secondary school students and found that station rotation produced better reading comprehension outcomes than traditional lecture instruction. Belazi and Ganapathy (2021), although focused on writing rather than reading, similarly found that station rotation increased student engagement in Libyan EFL classrooms.

Combining these two approaches offers a plausible way to capture the motivational and feedback benefits of gamification together with the structural and variety benefits of station rotation. Students could encounter the same reading skills through multiple modes: teacher explanation, gamified practice with immediate feedback, peer discussion, and independent work. This rationale is consistent with constructivist learning theory, which holds that learners construct understanding most effectively when they actively engage with material and interact with others (Tomlinson, 2014), and with Self-Determination Theory, which holds that motivation is supported when learners feel competent, have some autonomy in how they learn, and feel connected to others (Deci & Ryan, 1985).

Despite the separate bodies of research on gamification and station rotation, little research has combined the two approaches for secondary school reading comprehension in Nigeria, and none was identified specifically in Kebbi State. The present study was designed to address this gap.

Statement of the Problem

Reading comprehension is central to students' academic success, yet many secondary school students continue to struggle with basic comprehension skills. Some students cannot identify the main idea of a passage. Others can locate a specific fact without understanding how it relates to the broader message. Some are unable to determine the meaning of unfamiliar words, while others read the words on a page without grasping what is implied. These difficulties limit learning not only in English but in history, science, social studies, and any subject that requires reading. Beyond academic performance, students who struggle with reading often lose confidence and begin to see themselves as poor readers, which can affect motivation over time.

The instructional sequence commonly used in many classrooms, in which the teacher explains a concept, students read, students answer questions, and students complete individual work, has value but may not be sufficient on its own. It does not always provide immediate feedback on whether students have understood correctly. It does not always create opportunities for students to work together and hear how their peers interpret the same text. It does not always sustain engagement or make progress visible, and it can be a largely passive experience for students who do not fully understand an explanation but are reluctant to ask for clarification.

There is evidence that more interactive approaches produce better outcomes. Auta et al. (2022) demonstrated this specifically in Kebbi State, and Nkopuruk and Mobolaji (2025) found that gamification improved reading comprehension among secondary school students. However, no study has examined what happens when gamification and station rotation are combined for secondary students in Kebbi State. This represents a specific gap in the literature.

A further consideration is that students do not all begin instruction from the same starting point. A student who is already a strong reader may not require the same level of support and may disengage from an approach designed for the average reader. A student who is struggling significantly may require more direct teacher support than an activity-based rotation can provide. An average-achieving reader may occupy a middle position, skilled enough to manage some independence but with sufficient room for growth to benefit substantially from structure and feedback. Because it was unclear how students at different achievement levels would respond, this question was examined directly.

This study therefore addressed two questions: whether combining gamification with station rotation improves reading comprehension among secondary school students in Kebbi State, and whether the approach benefits all students equally or benefits some groups more than others.

Objectives of the Study
The study was designed to:

1. Determine whether the Gamified Station-Rotation Instructional Approach improves students' English reading comprehension in Kebbi State secondary schools.

2. Determine whether the approach affects students at different achievement levels differently, specifically whether high, average, and low achievers benefit equally or whether one group benefits more than others.

Research Questions
RQ1: Do students taught with the Gamified Station-Rotation Instructional Approach score higher on reading comprehension than students taught using the traditional approach?

RQ2: Does the benefit of the approach depend on students' prior achievement level, such that high, average, and low achievers benefit equally, or does one group benefit more than the others?

Hypotheses
The following hypotheses were tested at the .05 level of significance:

H01: There is no statistically significant difference in reading comprehension between students taught with the gamified station-rotation approach and students taught traditionally, after controlling for pretest scores.

H02: The effect of the instructional approach does not differ significantly across achievement levels; that is, high, average, and low achievers benefit equally from the approach.

Scope and Delimitations
This study involved SS II students, most between 15 and 20 years of age, with a small number up to 21 to 22 years, drawn from two secondary schools in Birnin Kebbi. Reading comprehension was measured using a 40-item test covering seven categories of reading skill. The study examined whether the instructional approach, gamified station-rotation versus traditional instruction, affected outcomes, and whether students' prior achievement level, high, average, or low, moderated that effect.

The study was limited to two schools, so the findings cannot be assumed to generalize to every secondary school in Kebbi State or Nigeria. Because the experimental and control groups were located in different schools with different teachers, the effect of the instructional approach could not be fully separated from the effect of school and teacher. Reading comprehension was measured only immediately after the intervention; no delayed posttest was administered to assess retention. The study did not examine whether the approach affects male and female students differently, nor did it examine the influence of students' access to technology at home or other individual-level factors.

Significance of the Study

For English Teachers

This research identifies a concrete approach that classroom teachers can adopt. Rather than relying solely on explanation and individual assignments, teachers may organize three or four learning stations through which students rotate, with some stations focused on skill practice, feedback, and visible progress. If effective, this approach may improve students' reading comprehension and classroom engagement.

For Students

The gamified station-rotation approach provides opportunities that a traditional classroom may not, including practice with immediate feedback on comprehension, discussion with classmates that exposes students to different interpretations, visible indicators of progress, and independent practice that builds confidence.

For School Leaders and Curriculum Planners

If these results are replicated in other schools, they suggest that blended, technology-supported, student-centered approaches to reading instruction merit further investment, including teacher training, technology resources, and reconsideration of how lessons are structured.

For Teacher Educators

This study provides a concrete case for discussing how to use gamification thoughtfully, how to manage station rotations, and how to integrate these elements with sound reading instruction.

For Researchers

The finding that prior achievement level moderates the effectiveness of the approach warrants further investigation, particularly regarding why average-achieving students appear to benefit most.

2. Review of Related Literature

Reading Comprehension

Reading comprehension is not a passive process. A reader who understands a text is actively integrating information from that text, connecting it to prior knowledge, identifying what is important, and reasoning about its overall meaning. A reader is not simply decoding words but constructing meaning (Pressley, 2006). This study measured comprehension using seven specific skills that together constitute reading comprehension.

Gamification in Reading Instruction

Gamification involves incorporating elements that make games engaging, such as points, badges, visible progress, clear goals, and immediate feedback, into learning activities. Used appropriately, gamification is not intended to trivialize learning; rather, it draws on principles of motivation to help learners remain engaged and persist through challenges. Research indicates that specific game elements affect motivation in different ways. Sailer et al. (2017) found that particular game design features can support psychological needs such as competence and autonomy. Hamari et al. (2016) found that well-designed game-based learning is associated with greater engagement and improved learning outcomes. With respect to reading specifically, Nkopuruk and Mobolaji (2025) found that Nigerian students who received gamified reading practice improved more than students who completed traditional drills. Maimaiti and Hew (2025) found that university students in China who used gamified self-regulated learning for English reading showed improved comprehension as well as increased motivation. Collectively, this evidence suggests that gamification can support reading comprehension when it is implemented thoughtfully.

Station Rotation in Reading Instruction

Station rotation involves students moving through different learning stations during a lesson, each offering a distinct type of activity: teacher-led direct instruction, technology-based independent practice, collaborative peer work, and independent practice. This structure is intended to accommodate differences in how students learn and to expose all students to material through multiple modes. Ogude and Chukweggu (2019) found that station rotation produced better reading comprehension outcomes among Nigerian secondary students than traditional lecture instruction. Belazi and Ganapathy (2021) found that station rotation supported EFL writing instruction in Libyan classrooms. Across these studies, the variety inherent in the station rotation structure appears to support both engagement and retention.

The Role of Prior Achievement

Students begin instruction from different starting points. Some enter the classroom as confident readers with well-developed comprehension strategies, while others are still learning how to approach a text. Research on differentiated instruction indicates that learners vary in prior knowledge, skill, and the type of support that benefits them most (Tomlinson, 2014). A student who is already a strong reader may become disengaged in an activity designed for average readers, while a student who is struggling significantly may require more direct teacher support than a station rotation can provide at a given moment. An average-achieving reader may be positioned to benefit most, capable of working with some independence while still having considerable room for improvement. This study examined whether the gamified station-rotation approach benefits students at different achievement levels equally or benefits some groups more than others.

Theoretical Framework

Constructivist Learning Theory

Constructivism holds that learners actively build understanding through experience, interaction, and problem-solving rather than passively receiving information. In a gamified station-rotation classroom, students read texts, answer questions, discuss meaning with classmates, make inferences, and practice skills independently. These activities require active engagement in constructing meaning, consistent with constructivist principles.

Self-Determination Theory

Self-Determination Theory holds that motivation is supported when three psychological needs are met: competence, autonomy, and relatedness (Deci & Ryan, 1985). In the gamified station-rotation approach, points and visible progress provide feedback that supports a sense of competence. Rotating through stations with different activities supports autonomy. Collaborative stations support relatedness through interaction with classmates. Because the approach addresses all three needs, Self-Determination Theory predicts increased motivation and, by extension, improved learning outcomes.

3. Methodology

Research Design

This study used a quasi-experimental design consisting of an experimental group, which received the gamified station-rotation approach, and a control group, which received conventional instruction, with measurement before and after the intervention. Random assignment of individual students was not feasible without disrupting normal school operations; instead, intact classes participated as groups, which is more consistent with typical school conditions but requires caution in interpreting the results.

Because the experimental and control groups were drawn from different schools with different teachers, differences in outcomes cannot be attributed with certainty to the instructional approach alone. Some of the observed difference may be attributable to school-level or teacher-level factors. This limitation was considered throughout the interpretation of the findings.

Participants

The study included 120 SS II students, most between 15 and 20 years of age, from two secondary schools in Birnin Kebbi. The experimental group comprised 67 students, and the control group comprised 53 students.

The two schools were selected based on accessibility, the availability of SS II classes, the willingness of school leadership to participate, and suitability for implementing the program. Intact classes were retained rather than reassigned, meaning that assignment to condition was not random but reflected typical school operating conditions.

Classification of Student Achievement Levels

Students were classified into three achievement levels based on their English examination scores from the previous term, as shown in Table 1. These bands follow the continuous-assessment grading convention

used in the participating schools, in which scores of 75% and above are classified as Distinction, 50 to 74% as Credit, and below 50% as Pass.

Table 1: ***Classification of Student Achievement Levels***

Achievement level	Score range	Percentage	Typical age
High achievers	30–40 marks	75%+	15–18 years
Average achievers	20–29 marks	50–74%	16–20 years
Low achievers	Below 20 marks	Below 50%	17–22 years

Note*. These categories reflect the standard achievement classification used in the participating schools. Age ranges represent typical values for secondary school students in Kebbi State; most students fell within these ranges, with a small number of exceptions.*

Instrumentation

Reading comprehension was measured using a 40-item multiple-choice test developed for this study. Students read five short passages and answered 40 questions, each with four response options and one point awarded per correct answer, for a maximum possible score of 40.

The test covered seven comprehension skills: identifying the main idea, locating supporting details, understanding vocabulary in context, making inferences, interpreting meaning, recognizing author's purpose, and applying or evaluating ideas from the text. The distribution of items across these skills is shown in Table 2.

Table 2: ***Distribution of Reading Comprehension Test Items by Skill***

Comprehension skill	Number of items	Weight
Main idea	5	12.5%
Supporting details	10	25.0%
Vocabulary in context	5	12.5%
Inference	6	15.0%
Interpretation/meaning	6	15.0%
Author’s purpose/attitude	4	10.0%
Application/evaluation	4	10.0%
Total	40	100.0%

Note*.* The 40-item test assessed seven reading-comprehension skills. One point was awarded for each correct response.

The instrument was reviewed by two English language experts, who confirmed that the items were appropriate for SS II students and consistent with the construct being measured. Reliability was assessed by administering the test to 45 students outside the study sample; Cronbach's alpha was .76, indicating acceptable internal consistency.

Procedure for the Experimental Group

The program was implemented over six weeks, with three 45-minute reading lessons per week. In each lesson, students rotated through four stations.

Station 1: Teacher-Led Strategy Instruction (12 minutes). The teacher provided explicit instruction in one

reading skill at a time, for example modeling how to identify a main idea by thinking aloud while reading a passage, or demonstrating how to determine word meaning from context clues.

Station 2: Quizizz Gamified Practice (10 minutes). Students answered reading questions using Quizizz, an online platform that provided immediate feedback on accuracy, awarded points for correct answers, and displayed progress.

Station 3: Collaborative Discussion (11 minutes). Students worked in pairs or small groups to discuss vocabulary, explain and justify their identification of the main idea and supporting inferences using textual evidence, and compare interpretations.

Station 4: Independent Practice (10 minutes). Students completed comprehension exercises individually, demonstrating their capability without peer or teacher support.

Students were divided into four groups, with each group beginning at a different station and rotating to the next station when time was called, allowing every student to experience all four stations across the lesson. Two minutes were allocated for transitions between stations.

The teacher assigned to the experimental group received training in managing the station rotation, using Quizizz, teaching comprehension strategies explicitly, and facilitating smooth transitions between stations. The teacher assigned to the control group did not receive equivalent training.

Procedure for the Control Group

The control group received conventional reading instruction consisting of teacher-led lessons, textbook reading, teacher questioning, and individual student responses. This reflects the instructional approach typically used in Nigerian secondary school classrooms.

Data Collection Procedure

All 120 students completed the reading test before the intervention to establish baseline scores. After six weeks of instruction, either gamified station-rotation or conventional instruction, the same test was administered again. This pretest-posttest comparison was used to assess change over the course of the intervention.

Method of Data Analysis

Analysis of covariance (ANCOVA) was used to compare posttest scores between groups while controlling for pretest scores. This approach evaluates whether the experimental group's posttest performance was significantly higher than the control group's after accounting for initial differences between groups. Effect sizes were calculated to assess the magnitude of observed differences.

Assumptions underlying ANCOVA were tested prior to the main analysis. Levene's test for homogeneity of variance was not significant, $p = .187$, indicating that the assumption of equal variances was satisfied. The test for homogeneity of regression slopes was also not significant, $p = .341$, indicating that the assumption of equal regression slopes was satisfied. These results confirmed that ANCOVA was an appropriate analytic approach for this dataset.

Ethical Considerations

This study was approved by the Federal University Dutsin-Ma (FUDMA) Ethics Committee for Educational Research (Approval Reference: FUDMA/EDU/REC/2025/087). Because participants were minors, written parental or guardian consent was obtained, and student assent was also obtained. Participation was voluntary, and students who chose not to participate or who withdrew were not penalized in any way, and their academic standing was unaffected. Control group students were not disadvantaged by receiving conventional instruction rather than the experimental approach. All data were kept confidential; no student names appear in any report or analysis, and all data were stored securely.

Results

Results for Research Question One: Effect of the Gamified Station-Rotation Approach on Reading Comprehension

Table 3: ***Pretest and Posttest Reading Comprehension Scores by Instructional Group***

Group	n	Pretest M (SD)	Posttest M (SD)
Gamified station-rotation	67	17.21 (3.42)	27.84 (4.18)
Conventional instruction	53	17.08 (3.35)	22.31 (4.06)
Total	120	17.15 (3.38)	25.40 (4.78)

Note. M = mean; SD = standard deviation.

Prior to the intervention, the two groups began at nearly identical levels, with a pretest mean of 17.21 for the gamified group and 17.08 for the traditional group. Following six weeks of instruction, the gamified group's posttest mean rose to 27.84, compared with 22.31 for the traditional group, a difference of 5.53 points. The gamified group improved by 10.63 points overall, compared with an improvement of 5.23 points in the traditional group.

After controlling for pretest scores, this difference was statistically significant, $F(1, 117) = 32.47$, $p < .001$, $\eta p^2 = .217$. The probability value indicates that this result would occur less than once in 1,000 times if the instructional approach had no true effect. The effect size ($\eta p^2 = .217$) indicates that the instructional approach accounted for approximately 22% of the variance in posttest scores, representing a substantial effect.

Results for Research Question Two: Differential Effects by Achievement Level

Table 4: ***Posttest Reading Comprehension Scores by Prior Achievement Level and Instructional Group***

Achievement level	Gamified M (SD)	Conventional M (SD)	Mean difference
High achievers (n = 29)	31.20 (3.32)	27.10 (3.47)	+4.10
Average achievers (n = 65)	27.60 (3.61)	22.80 (3.55)	+4.80
Low achievers (n = 26)	24.10 (3.27)	20.90 (3.14)	+3.20

Note. M = mean; SD = standard deviation. Mean difference represents the gamified station-rotation mean minus the conventional-instruction mean

Students at every achievement level scored higher under the gamified approach than under traditional instruction, and no group performed worse. However, the magnitude of the advantage differed by group. Average-achieving students showed the largest advantage, 4.80 points, followed by high-achieving students, 4.10 points, with low-achieving students showing the smallest advantage, 3.20 points.

The interaction between instructional approach and achievement level was statistically significant, $F(2, 113) = 4.31$, $p = .016$, $\eta p^2 = .071$, indicating that this pattern reflects a genuine effect rather than random variation. Achievement level moderated the effect of the instructional approach, with the approach appearing most beneficial for students in the middle range of performance.

A plausible explanation is that average-achieving students had sufficient reading background to work with some independence while retaining considerable room for improvement, such that the varied activities, immediate feedback, and peer discussion were well matched to their needs. High-achieving students were already performing strongly, leaving less room for improvement, consistent with a ceiling effect. Low-achieving students may have benefited from the structure of the approach but may also have required more direct one-on-one teacher support than a four-station rotation can provide at a given moment. This interpretation is offered as a plausible explanation rather than a confirmed finding, since the stations were not directly observed.

4. Discussion

Summary of Main Findings

Students who experienced the gamified station-rotation approach demonstrated significantly better reading comprehension than students who received traditional instruction. The approach was associated with approximately 5.5 additional points on the 40-point test, and after accounting for students' starting scores, this difference was both statistically significant and practically meaningful.

Several factors likely contributed to this outcome. Students practiced reading skills through four distinct modes: teacher explanation, technology-based practice with immediate feedback, peer discussion, and independent work. This combination of repetition and variation likely supported deeper understanding. Immediate feedback allowed students to confirm or adjust their understanding, visible progress and peer discussion likely sustained motivation, and the active nature of the stations, in contrast to passive listening, is consistent with research indicating that active participation supports deeper learning.

These findings align with constructivist learning theory, which holds that learners build understanding most effectively through active engagement and interaction, and with Self-Determination Theory, which holds that motivation depends on feelings of competence, autonomy, and relatedness. The gamified station-rotation approach appears to address each of these elements: immediate feedback supports competence, varied activities support autonomy, and collaborative stations support relatedness.

These results are consistent with prior research. Nkopuruk and Mobolaji (2025) found that gamification improved reading comprehension among Nigerian secondary students, Maimaiti and Hew (2025) found that gamified self-regulated learning improved reading comprehension and motivation among EFL students, and Ogude and Chukweggu (2019) found that station rotation outperformed traditional lecture instruction for reading comprehension. The present study extends this literature by demonstrating that combining these approaches produces measurable benefits for secondary students in Kebbi State.

Why Average Achievers Benefited Most

The interaction finding indicates that the approach was not equally effective for all students. Average-achieving students appear to have been positioned to benefit most: sufficiently skilled to participate in collaborative and independent stations without excessive frustration, yet not so advanced that the additional supports, variety, feedback, and peer discussion, offered limited additional benefit.

High-achieving students were already confident readers and likely navigated the stations effectively, but their higher starting scores left less room for measurable improvement, consistent with a ceiling effect. Low-achieving students may have benefited from the structure of the approach as well, but may have required more direct scaffolding or teacher support to fully engage with the more independent stations. A four-station rotation, while structured, does not provide the level of individualized support available in one-on-one instruction.

This explanation is offered with appropriate caution, since the stations were not directly observed and no video or process data were collected on student behavior within each station. Future research examining what occurs within stations for students at different achievement levels would help clarify this finding.

Limitations of the Study

Several limitations should be considered when interpreting these findings.

Different schools and teachers. The experimental group was located in one school with one teacher, and the control group was located in a different school with a different teacher. Because schools and teachers differ in resources, experience, and instructional style, the effect of the instructional approach cannot be fully separated from the effect of school and teacher. The findings therefore reflect the gamified station-rotation approach as implemented in this specific context, not necessarily the approach in isolation.

Absence of random assignment. Random assignment of individual students to condition was not feasible; intact classes participated as groups. This limits the strength of causal inference, since the groups may have differed in ways that were not measured.

Immediate outcomes only. Reading comprehension was measured immediately after the six-week program.

No delayed posttest was administered, so it is not known whether the observed benefits were sustained over time.

Limited number of schools. The study was conducted in two schools in Birnin Kebbi, and the findings cannot be assumed to generalize to all secondary schools in Kebbi State or Nigeria.

Unexamined student characteristics. This study examined the moderating role of prior achievement but did not examine gender, socioeconomic background, students' comfort with technology, or other factors that may influence how students respond to the approach.

Absence of direct observation. The study measured outcomes but did not directly observe or record what occurred within the stations, so explanations for the observed patterns are necessarily inferential.

Conclusion

This study provides evidence that gamified station-rotation instruction can improve secondary school students' English reading comprehension. Students who experienced the approach scored significantly higher than students who received traditional instruction, and the approach benefited students at all achievement levels, with the largest gains observed among average-achieving students.

Because the experimental and control groups were located in different schools with different teachers, these findings are presented as a promising association observed under real classroom conditions rather than definitive evidence that the gamified station-rotation approach directly causes improved reading comprehension. This cautious interpretation reflects the constraints of the study design. Nonetheless, the approach is theoretically grounded, consistent with prior research on its component parts, and associated with a substantively meaningful improvement in this study, providing sufficient basis for teachers to consider adopting it in their own classrooms.

Recommendations

For Teachers

Secondary school English teachers may consider organizing reading lessons into four rotating stations: one for explicit strategy instruction, one for technology-based practice with immediate feedback, one for peer discussion, and one for independent practice, allocating approximately 10 to 12 minutes per station. Although this approach requires additional planning, it may increase student engagement and reduce passive listening. Teachers should provide additional scaffolding for students who struggle with reading, particularly at the outset, rather than placing them directly into independent stations without preparation.

For School Leaders

School leaders who wish to support this approach should allocate time for teacher training and lesson planning. Access to technology for gamified practice is helpful but need not be costly, as free platforms such as Quizizz are available. The primary investment required is teacher time for learning the approach, designing lessons, and establishing classroom routines.

For Future Researchers

Future research should replicate this study across a larger number of schools to assess generalizability, use matched schools to isolate the effect of the instructional approach from school-level factors, include a delayed posttest to assess retention, examine more closely what differs in the experience of high, average, and low achievers, and examine whether the approach functions differently for students who differ by gender or by access to technology.

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Author Statements

Conflict of Interest

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Data Availability

The datasets generated during this study are not publicly available due to student privacy protections and institutional policies. Data are available from the author upon reasonable request, subject to ethical clearance from the institution and the participating schools.

Ethics Statement

This study was approved by the Federal University Dutsin-Ma (FUDMA) Ethics Committee for Educational Research (Approval Reference: FUDMA/EDU/REC/2025/087). Written parental or guardian informed consent and student assent were obtained before participation. Participation was voluntary, and no penalties were applied for non-participation.