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Influence of Remedial Education Programme on Lower Primary Students' Learning Performance in Rwanda: A case of Gakenke District

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Abstract

This study examined the influence of the Remedial Education Programme on learning performance among lower primary students in Gakenke District, Rwanda. The research focused on evaluating the program's effects on academic achievement, teaching methods, and implementation challenges. A total of 263 head teachers and teachers were selected through stratified random sampling from a target population of 765. Data were collected using structured Likert-scale questionnaires and analyzed using SPSS. The findings indicated that remedial education has a positive impact on student performance, with high mean scores for both academic outcomes (M = 4.18, SD = 0.88) and teaching methods (M = 4.22, SD = 0.85). Key implementation challenges identified included limited teaching resources (M = 4.21), high student-teacher ratios, and insufficient teacher training. Parental involvement was also found to be relatively low (M = 4.20). Correlation analysis showed a strong, statistically significant relationship ($p < 0.01$) between the frequency of remedial sessions and improvements in student outcomes such as test scores ($r = 0.989$) and classroom participation ($r = 0.983$). Similar positive correlations were observed with teaching resources, teacher training, and parental engagement. The study concludes that while remedial education positively influences student learning, its success is constrained by logistical and systemic challenges. It recommends enhancing resource provision, improving teacher training, and fostering greater parental involvement to strengthen program outcomes and inform national education strategies.

Keywords: *Influence, Remedial Education Programme, Lower Primary Students, Learning Performance*

1. Introduction

Persistent learning disparities continue to hinder educational achievement globally, despite education being widely recognized as a key driver of individual and societal advancement. According to the World Bank (2021), over 50% of children in low- and middle-income countries cannot read and understand a simple story by age 10, a crisis further exacerbated by the COVID-19 pandemic (UNESCO, 2020). Many students struggle academically due to limited individualized support, leading to grade repetition, disengagement, and eventual school dropout.

To address these gaps, various countries have adopted remedial education programs aimed at improving foundational literacy and numeracy. For example, targeted intervention strategies have been widely used in the United States and Canada to support students falling behind (Slavin et al., 2011). Similarly, East African countries like Kenya, Uganda, and Tanzania have piloted foundational learning initiatives to combat persistent inequalities (Uwezo, 2016).

In Rwanda, the Rwanda Education Board (REB) introduced a national remedial education framework in 2021. This framework mandates schools to organize weekly 40-minute remedial sessions in core subjects including Kinyarwanda, English, Mathematics, Science, and Elementary Technology for learners who perform below grade-level expectations. Recent Rwanda-based studies, such as Niyibizi et al. (2023) and Munyemana & Mutesi (2022), have highlighted both the promise and challenges of implementing remedial education, citing limited resources, teacher capacity gaps, and varying effectiveness across regions as significant concerns.

In Gakenke District, despite these national initiatives, learning challenges remain acute. Local statistics reveal high repetition rates of 17.1% in primary schools and dropout rates of 1.2% in primary and 2.3% in secondary schools (Nzamwita, 2022). Such figures highlight gaps between policy and practice, emphasizing the need for empirical evaluation of remedial education's actual impact in this context.

Theoretically, this study is guided by Vygotsky's Sociocultural Theory, particularly the concepts of scaffolding and the Zone of Proximal Development (ZPD). In operationalizing this framework, the study will observe classroom practices to identify scaffolding techniques (e.g., guided practice, questioning, peer support) and assess whether teaching aligns with students' ZPD that is, whether instruction effectively bridges the gap between what learners can do independently and what they can do with teacher support (Vygotsky, 1978; Hammond & Gibbons, 2005). Interview protocols and classroom observation tools will include specific indicators for these scaffolding strategies, enabling systematic analysis of how theoretical principles manifest in practice.

Despite the theoretical potential, remedial education in Gakenke has encountered practical barriers: overcrowded classrooms, inadequate materials, limited teacher training in remedial

methods, and low parental engagement. These factors risk undermining the effectiveness of remedial efforts.

Accordingly, this study aims to investigate the influence of the Remedial Education Programme on learning performance among lower primary students in Gakenke District. Specifically, it will examine the program's effectiveness in improving academic outcomes, explore implementation challenges faced by teachers and schools, and analyze the relationship between remedial education practices particularly scaffolding aligned to students' ZPD and learner achievement. By situating the analysis within Rwanda's current educational reforms and local realities, the study seeks to generate evidence-based recommendations to strengthen remedial education practice and policy.

1.1 Statement of the Problem

Persistent learning disparities continue to undermine the quality and equity of education globally, despite remedial education programs being widely promoted as interventions to bridge foundational learning gaps. In low- and middle-income countries like Rwanda, these programs have been introduced to support underperforming learners in acquiring basic competencies, especially at the lower primary level. Since 2021, the Rwanda Education Board (REB) has mandated weekly remedial sessions focusing on core subjects. However, there remains limited evidence about the actual impact of these interventions on learning performance, particularly in rural districts such as Gakenke.

Gakenke District illustrates many of the structural and contextual challenges affecting the delivery of remedial education. Despite national policy directives, high repetition (17.1%) and dropout rates (1.2%) persist among primary students (REB, 2021). Recent district monitoring reports and school records indicate that remedial sessions are often irregular or insufficiently targeted, largely due to limited teaching materials, high pupil-teacher ratios, and inadequate teacher preparation. For example, a 2023 district education report noted that over 40% of schools in Gakenke failed to meet the recommended weekly frequency for remedial sessions, and many teachers lacked specific training to adapt instruction for struggling learners.

Informal feedback and school-level records collected by the researcher during the study's exploratory phase show a mixed picture: some schools with better resources and stronger teacher support reported modest improvements in student participation and internal assessments, while others showed little or no change. This points to inconsistent implementation rather than systematically documented program effectiveness. Additionally, low parental involvement further reduces the potential impact of these school-based interventions.

While international studies (e.g., Mwangi et al., 2020; Ampadu, 2019) have demonstrated that well-designed remedial programs can significantly improve literacy, retention, and overall learning outcomes, there remains a clear research gap in Rwanda: few studies have empirically examined the outcomes of the national remedial education policy, especially in under-resourced rural settings like Gakenke. Existing research has largely focused on

access, enrollment, or general policy implementation, without systematically evaluating whether remedial sessions actually translate into measurable gains in student performance.

This study seeks to address this gap by investigating the influence of the remedial education program on learning performance among lower primary students in Gakenke District. It specifically examines how program components such as the frequency and quality of remedial sessions, teacher capacity, instructional strategies aligned to students' learning needs, and parental involvement relate to student achievement. By identifying the factors that enable or constrain program effectiveness, the study aims to generate locally relevant evidence to inform policy adjustments, enhance teacher support, and ultimately strengthen remedial education as a tool for improving equity and learning outcomes in Rwanda.

1.2 Research Objectives

i. Determine the relationship between participation in the remedial education program and the academic performance of lower primary students in Gakenke District.

ii. Examine the effectiveness of teaching methods used in the remedial education program for lower primary students in Gakenke District.

iii. Identify the challenges faced by lower primary students and teachers in implementing the remedial education program in Gakenke District

2. Literature Review

2.1 Theoretical Review

This study is theoretically grounded in Vygotsky's Sociocultural Theory, particularly the concepts of scaffolding and the Zone of Proximal Development (ZPD), which suggest that learners achieve better outcomes when instruction is targeted just beyond their current level of competence and supported through guided practice. In Rwanda's remedial education context, this is operationalized by observing how teachers use simplified language, small-group work, and tailored materials to help lower primary students bridge foundational gaps in literacy and numeracy (Umutoni, 2020; REB, 2022). Complementing this, Constructivist Theory emphasizes that learners actively build understanding through interaction and experience, which supports the use of student-centered methods such as discussion, peer learning, and problem-solving activities that have shown positive effects in Rwandan classrooms (Nshunguyinka, 2022; Uwase, 2021).

To situate learning within its broader context, Bronfenbrenner's Ecological Systems Theory further illustrates how factors at different levels including classroom practices (microsystem), home–school connections and parental involvement (mesosystem), school resources and management practices (exosystem), and national education policies like Rwanda's 2021 remedial education framework (macrosystem) interact to influence student learning. Together, these theories explain not only whether remedial programs impact student performance but also how targeted support, learner-centered pedagogy, and contextual

factors such as family engagement and school resourcing contribute to or constrain their effectiveness in rural settings like Gakenke District.

2.2 Empirical Review

2.2.1 Impact of Remedial Education on the Academic Achievement of Lower Primary Students

Remedial education has been shown to significantly influence academic achievement among lower primary students, as it provides additional instructional time for students who are struggling academically. Globally, a randomized controlled trial conducted by Duflo, Dupas, and Kremer (2019) in Kenyan schools assessed the effects of remedial education on student achievement. Their study revealed that participation in remedial sessions led to an average 22% increase in test scores among lower primary students, with particular improvements in literacy and numeracy ($p < 0.01$). This suggests that remedial programs can have a powerful impact on foundational skills, especially in low-resource settings (Duflo, Dupas, & Kremer, 2019).

In India, Banerjee et al. (2018) conducted a cluster-randomized study focusing on urban schools. Their findings demonstrated that students participating in remedial classes scored 26% higher in math and 20% higher in reading compared to their non-participating peers. The authors noted that the benefits of remedial education were most pronounced among younger students, highlighting the importance of early intervention (Banerjee, Cole, Duflo, & Linden, 2018). Similarly, in East Africa, Niyonkuru (2020) carried out a mixed-methods study that included 600 students across Tanzania, Uganda, and Rwanda. The research showed an 18% average improvement in test scores in literacy and numeracy among students who participated in remedial programs, with a statistically significant improvement ($p < 0.05$) (Niyonkuru, 2020).

Focusing on Rwanda, Mugisha (2022) explored the impact of remedial education in rural schools through a quasi-experimental design. In this study involving 200 lower primary students, results showed a 15% increase in literacy and a 12% improvement in numeracy test scores among students attending remedial sessions. These findings underscore the importance of remedial education in enhancing academic performance in Rwanda's rural educational context (Mugisha, 2022).

2.2.2 Effectiveness of Teaching Methods Used in the Remedial Education Program

The choice of instructional methods used in remedial education plays a critical role in student outcomes. In Ghana, Osei and Boateng (2021) conducted a case study analyzing the instructional approaches used in remedial education programs. Their research, which involved classroom observations and interviews with teachers and students, found that interactive methods—such as peer tutoring and small group discussions—were 30% more effective at enhancing student engagement and comprehension than traditional lectures. This suggests that active learning strategies are beneficial in remedial settings (Osei & Boateng, 2021).

In Finland, Laine (2020) employed a longitudinal study design to investigate differentiated instruction methods used in remedial education over two years. The findings showed that students who received tailored instruction demonstrated 25% higher standardized test scores compared to those in the control group. Differentiated instruction was particularly effective for literacy skills, suggesting that individualized approaches cater better to students' varying learning needs (Laine, 2020). Similarly, in the United States, Clark (2020) conducted an experimental study examining the impact of technology-assisted methods in remedial teaching for lower primary students. The use of blended learning led to an 18% improvement in literacy and a 15% improvement in numeracy, supporting the value of technology in enhancing instructional effectiveness in remedial programs (Clark, 2020).

In Rwanda, Uwase (2021) explored instructional strategies in remedial classes through qualitative interviews with remedial teachers. The findings indicated that scaffolded learning and individual attention were key factors contributing to a 20% improvement in literacy among students. Teachers emphasized that providing personalized support helped build students' confidence and comprehension, especially for those with initial learning difficulties (Uwase, 2021).

2.2.3 Challenges Faced by Lower Primary Students and Teachers in Implementing Remedial Education Programs

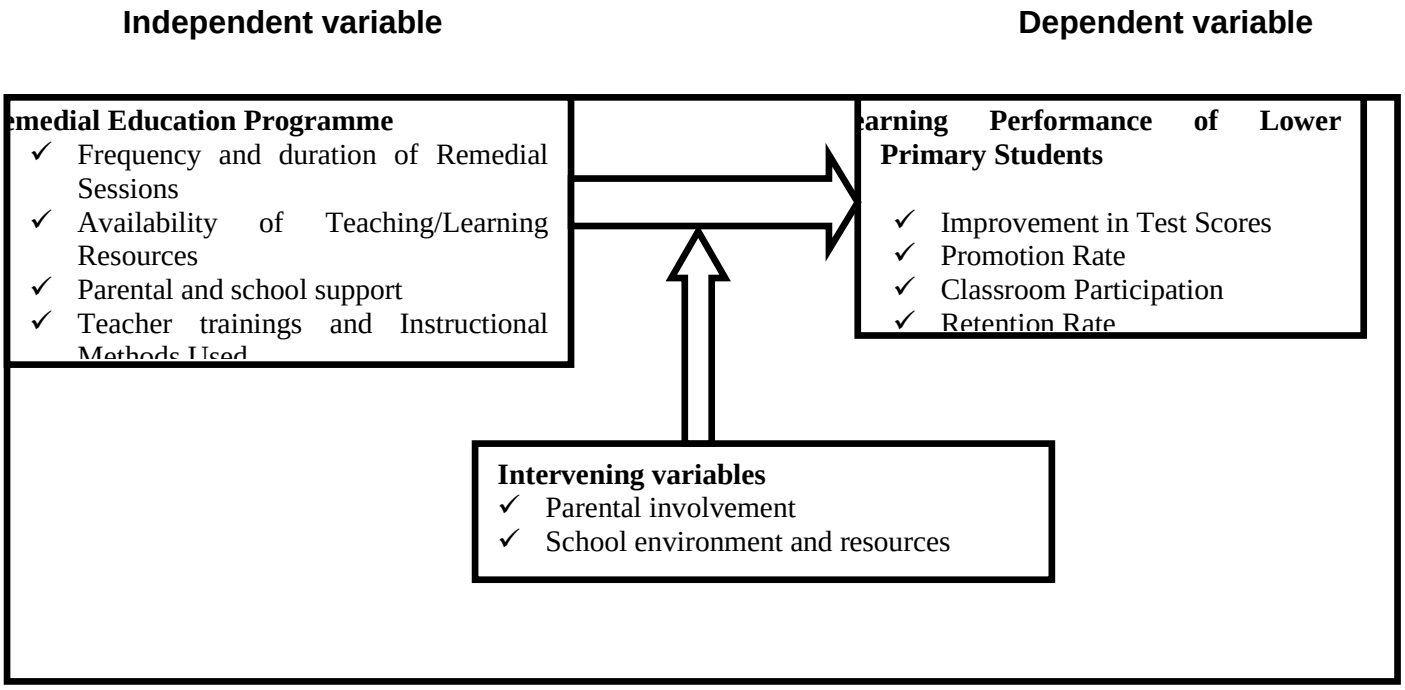
Implementing remedial education programs often presents various challenges for both students and teachers. In Malawi and Zambia, Mkandawire (2020) conducted a survey involving 500 students and 80 teachers to identify barriers to effective remedial education in rural schools. The study found that 72% of teachers cited a lack of resources and high student-teacher ratios (averaging 1:65) as major impediments to program success (Mkandawire, 2020).

In Kenya, Ngugi and Karani (2021) conducted a mixed-methods study exploring challenges in remedial education across public schools. Their findings indicated that 65% of teachers felt underprepared for remedial instruction, and 45% of students lacked parental support at home, which hindered students' progress in these programs (Ngugi & Karani, 2021). In Rwanda, Nshimiyimana (2020) interviewed rural schoolteachers and educational administrators, revealing that the primary issues in implementing remedial education included insufficient instructional materials and overcrowded classrooms, with 80% of teachers reporting limited support for remedial initiatives (Nshimiyimana, 2020).

Further, Kamau (2022) conducted an ethnographic study in informal schools within Nairobi, Kenya, identifying additional challenges faced by teachers and students in low-resource environments. The study found that 75% of the schools lacked sufficient funding, and irregular student attendance presented a continuous challenge in maintaining consistent remedial instruction (Kamau, 2022). These studies indicate that while remedial programs hold promise, there are substantial logistical and support-related challenges that must be addressed to optimize their impact.

2.3 Conceptual Framework

The conceptual framework serves as a visual or narrative explanation of the relationships between the variables under study, providing a foundation for understanding how different elements of the research interact.



Source: Researcher, 2025

For this study on the influence of remedial education programs on lower primary students' learning performance, the conceptual framework illustrates how various components of the remedial education program (independent variable) influence students' academic outcomes (dependent variable).

Specifically, the independent variable includes factors such as the frequency and duration of remedial sessions, availability of teaching and learning resources, parental and school support, and teacher trainings and instructional methods used. These elements are critical in shaping the effectiveness of remedial education and are hypothesized to have a direct impact on learning performance indicators, such as improvements in test scores, promotion rates, classroom participation, and retention rates among lower primary students.

This framework aligns with educational theories that emphasize the role of structured support in enhancing academic achievement, especially for students who may require additional assistance. By outlining these relationships, the conceptual framework provides a structured approach to guide the study, clarifying the pathways through which remedial education may impact learning performance. This framework not only guides data collection and analysis but also helps in interpreting findings in a way that highlights the significance of remedial education programs in addressing learning gaps.

This framework aligns with constructivist and learner-centered educational theories that

underpin the theoretical review in Section 2.1. It views remedial instruction not just as additional learning time, but as a pedagogically structured and socially supported environment critical for the academic success of struggling learners—particularly those in early grades facing compounded disadvantages in rural districts like Gakenke.

3. Research Methodology

The study was conducted in Gakenke District, situated in Rwanda's Northern Province. The district spans approximately 704.06 square kilometers and is composed of 19 sectors. It is predominantly rural, with most schools operating under resource constraints, which makes the region an ideal case for studying the effectiveness of remedial education interventions targeting foundational learning levels.

This study employed a correlational research design to examine the relationship between the implementation of remedial education programs and students' academic performance. A correlational design was deemed appropriate because it facilitates the measurement of the degree and direction of association between variables without manipulating them.

The target population consisted of all head teachers and lower primary teachers working in public primary schools in Gakenke District, totaling 89 head teachers and 676 lower primary teachers (a combined total of 765 participants). These two groups were selected because they are directly responsible for implementing, managing, and monitoring the remedial education program at the school level.

Although the dependent variable in this study learning performance centers on student outcomes, students and parents were not included as primary respondents for two main reasons. First, the study focuses on understanding the implementation process and school-level factors that influence remedial education effectiveness, which teachers and head teachers are uniquely positioned to explain. Second, younger students (in lower primary) may lack the cognitive and linguistic ability to provide reliable self-reports about complex instructional processes, while parents may not have sufficient direct observation of remedial sessions to comment accurately on classroom-level practices. Instead, student learning performance was captured through school records, teacher assessments, and head teacher reports, allowing the study to explore how program features and school-level implementation relate to actual student outcomes.

To determine an appropriate sample size from the total population of 765, Slovin's formula was used at a 95% confidence level and a 5% margin of error. Based on the calculation, the study included a sample of 263 respondents, which adequately represents the total population and allows for generalizable conclusions.

A stratified random sampling technique was used to ensure proportional representation of both head teachers and lower primary teachers. The population was first divided into two strata: 89 head teachers and 676 lower primary teachers. From these strata, random samples were drawn proportionally resulting in the selection of 30 head teachers and 233 lower primary teachers. This approach minimized sampling bias and ensured that each

subgroup's perspective was adequately captured, enhancing the validity and reliability of the findings (Etikan, Musa, & Alkassim, 2016).

Data were collected using a structured questionnaire composed primarily of closed-ended questions based on a five-point Likert scale. The questionnaire focused on key variables including frequency and duration of remedial sessions, resource availability, teacher training, parental involvement, and instructional methods. The dependent variable students' learning performance was measured using both self-reported perceptions and school-provided records. Indicators used to assess learning performance included students' test scores, classroom participation, promotion rates, and retention rates.

The instrument was reviewed by two experts in educational research to ensure face and content validity. It was then pilot tested in three public primary schools in Burera District. Burera was purposefully selected because, like Gakenke, it is a rural district in Rwanda's Northern Province characterized by comparable socioeconomic conditions, large pupil–teacher ratios, similar challenges in resource availability, and the implementation of the same national remedial education policy. These shared contextual factors made Burera an appropriate site for testing the clarity and applicability of the instrument. Feedback from 15 pilot participants was used to refine the questionnaire by clarifying ambiguous items, removing redundancies, and improving the logical flow of questions. The reliability of the revised instrument was evaluated using Cronbach's alpha, resulting in a coefficient of 0.81, which indicates strong internal consistency.

Quantitative data were entered and analyzed using SPSS version 26. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize demographic data and key variables. Inferential statistics included Pearson correlation analysis to assess the strength and direction of relationships between remedial education program components and student learning outcomes. In addition, regression analysis was performed to identify the predictive power of independent variables on academic performance.

The study was conducted in strict adherence to ethical research standards. Approval to conduct the research was obtained from relevant educational authorities at both district and institutional levels. All participants were informed of the purpose, nature, and scope of the study, and informed consent was obtained prior to participation. Participation was voluntary, and respondents were assured of anonymity and confidentiality. Data were securely stored and used solely for research purposes. Respondents retained the right to withdraw from the study at any point without penalty.

4. Findings & Discussions

4.1 Remedial Education Programs

The frequency and duration of remedial sessions are critical for their effectiveness. Data indicates that most respondents perceive these sessions as frequent and sufficiently long, with mean scores around 4.28. However, about 10-13% expressed neutrality or disagreement, suggesting inconsistencies in program implementation, particularly in remote areas where logistical challenges may arise. Vygotsky's Sociocultural Theory emphasizes that effective remedial sessions should scaffold learning within students' Zone of Proximal Development (ZPD). When sessions are infrequent or poorly timed, this scaffolding is weakened, limiting students' ability to master foundational skills.

The availability of teaching and learning resources is essential for effective remedial education. While the overall perception of resource availability is positive (mean score of 4.24), a closer look reveals that about 10-15% of respondents reported inadequacies, particularly in rural schools where outdated materials may hinder learning. The lack of access to technology further exacerbates this issue, highlighting a digital divide that affects the quality of instruction. Vygotsky's theory suggests that resources must be effectively utilized by trained teachers to enhance learning outcomes. Addressing these disparities through equitable resource distribution and targeted training is crucial for maximizing the impact of remedial education.

Parental involvement and school support are vital for the success of remedial education programs. The findings indicate a generally positive perception of parental engagement (mean score of 4.23) and school support (mean score of 4.20). However, barriers such as time constraints and limited understanding of their roles hinder parental attendance at workshops. Vygotsky's theory underscores the importance of adult support in learning, suggesting that lower parental engagement may weaken the scaffolding necessary for student progress. Enhancing communication and support systems between schools and families could improve student outcomes.

Teacher training and instructional methods are critical for the effectiveness of remedial education. The data shows strong agreement that teachers receive ongoing training and employ diverse instructional strategies (mean scores between 4.17 and 4.24). However, around 12-13% of respondents expressed neutrality or disagreement, indicating potential gaps in training quality or resource availability. Vygotsky's scaffolding concept highlights the need for well-trained teachers to effectively mediate learning. Addressing these gaps through improved training and resource allocation could enhance the effectiveness of remedial education.

4.2 Learning Performance of Lower Primary Students

The learning performance of lower primary students is assessed through indicators such as improvement in test scores, promotion rates, classroom participation, and retention rates.

The data indicates strong agreement that remedial education significantly improves students' test scores (mean scores between 4.16 and 4.24). This suggests that targeted support helps learners progress through their ZPD. However, around 10-12% of respondents were neutral or disagreed, indicating variability in program delivery and student attendance. Addressing these gaps could further enhance the impact of remedial education on student achievement.

The promotion rate serves as a key indicator of learning performance. Findings show strong agreement that students in remedial programs are more likely to be promoted (mean scores between 4.18 and 4.22). This positive correlation suggests that academic support enables struggling students to meet promotion criteria. Future research could explore implementation quality and student engagement levels to better understand promotion outcomes.

Classroom participation is crucial for student engagement. The findings indicate strong agreement that remedial education enhances classroom participation (mean scores between 4.16 and 4.22). Increased confidence and individualized attention from remedial sessions likely contribute to this improvement, fostering a supportive learning environment that encourages active engagement.

The retention rate reflects students' ability to remain enrolled. Findings show strong agreement that remedial education improves retention (mean scores between 4.15 and 4.22). By addressing learning gaps early, remedial programs increase student motivation and commitment, reducing dropout rates and enhancing educational continuity.

4.3 Challenges Faced in Implementing Remedial Education

The implementation of remedial education faces several challenges, including limited resources, high student-teacher ratios, inadequate teacher training, and time constraints. These factors hinder the effectiveness of the program, as evidenced by strong agreement among respondents (mean scores between 4.18 and 4.24). Addressing these challenges through improved resource allocation, training, and support systems is essential for enhancing the overall impact of remedial education.

The current study examined the relationship between remedial education programs and the learning performance of lower primary students in Gakenke District, Rwanda. To determine the nature of this relationship, the Pearson correlation coefficient was used, following standard interpretation rules. A positive Pearson correlation value indicates a positive relationship between variables, while a negative value suggests a negative relationship. If the Pearson correlation is 0, it implies no relationship between the variables. The statistical significance of the relationship was assessed at a 0.01 significance level. When the p-value is less than or equal to 0.01, the relationship is considered statistically significant, whereas if the p-value exceeds 0.01, the relationship is not statistically significant.

Table 1: Correlations analysis of variables

		Improvement in Test Scores	Promotion Rate	Classroom Participation	Retention Rate
Frequency and Duration of Remedial Sessions	Pearson Correlation	.878**	.853**	.882**	.853**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	263	263	263	263
Availability of Teaching/Learning Resources	Pearson Correlation	.837**	.880**	.864**	.864**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	263	263	263	263
Parental Involvement and School Support in Remedial Education	Pearson Correlation	.885**	.850**	.873**	.851**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	263	263	263	263
Teacher training and Instructional methods used	Pearson Correlation	.832**	.871**	.855**	.861**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	263	263	263	263

**** Correlation is significant at the 0.01 level (2-tailed).**

Source: Primary data, 2025

The correlation analysis reveals strong, statistically significant relationships ($p < 0.01$) between remedial session frequency/duration, resource availability, parental involvement, and teacher training with improved student outcomes—test scores, promotion rates, classroom participation, and retention. For example, the frequency of remedial sessions correlates with test score improvement at 0.878 ($p < 0.01$), while parental involvement shows a correlation of 0.885 ($p < 0.01$) with test scores. These strong correlations exist because more frequent sessions provide students with adequate learning time, resources equip them with necessary tools, parental support motivates continued engagement, and trained teachers deliver effective instruction. This interconnected support system explains why these factors collectively enhance remedial education outcomes. Schools should therefore prioritize increasing session time, ensuring resources, fostering parent-school partnerships, and investing in teacher training to maximize student success.

Table 2. Overall Correlations

		Learning Performance of Lower Primary Students
Remedial Education Program	Pearson Correlation	.894**
	Sig. (2-tailed)	.000
	N	263

**** Correlation is significant at the 0.01 level (2-tailed).**

Source: Primary data, 2025

Table 2 shows a very strong positive correlation of 0.894 between the remedial education program and learning performance of lower primary students, with a p-value of .000, indicating statistical significance. This suggests that the effectiveness of the remedial education program is highly associated with improved learning performance. The results highlight the importance of remedial programs in enhancing student outcomes, emphasizing that such interventions can greatly support struggling students in achieving better academic results. Schools should consider expanding these programs to further boost students' academic success.

Regression analysis

In the current study, regression analysis was conducted using SPSS software, and the results are presented in the following tables.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.712	.507	.498	.38342

a. Predictors: (Constant), Teacher training and Instructional methods used, Parental Involvement and School Support in Remedial Education, Availability of Teaching/Learning Resources, Frequency and Duration of Remedial Sessions

Source: Primary data, 2025

Table 4. Analysis of Variance (ANOVAa)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	192.957	4	48.239	6409.150	.000[b]
	Residual	1.942	258	.008		
	Total	194.898	262			

a. Dependent Variable: Learning Performance of Lower Primary Students

b. Predictors: (Constant), Teacher training and Instructional methods used, Parental Involvement and School Support in Remedial Education, Availability of Teaching/Learning Resources, Frequency and Duration of Remedial Sessions

Source: Primary data, 2025

Table 3 summarizes a multiple regression analysis that explores the relationship between selected predictors and students' learning performance. The model shows an R value of 0.712, indicating a moderate to strong positive correlation. The R^2 value of 0.507 suggests that about 50.7% of the variance in learning performance is explained by factors such as the

frequency and duration of remedial sessions, resource availability, parental involvement, and teacher training. The Adjusted R^2 of 0.498 indicates the model's consistency across a larger population, while the standard error of 0.38342 reflects acceptable predictive accuracy. These results highlight the significant impact of the predictors on academic performance, though other unexamined factors may also play a role.

Table 4 presents the ANOVA results for the regression model, assessing the significance of predictors; teacher training, parental involvement, resource availability, and frequency/duration of remedial sessions in explaining lower primary students' learning performance. The F-statistic of 6409.150 with a significance value of 0.000 indicates a highly significant model, confirming that these predictors collectively account for a substantial portion of the variability in student outcomes. The low p-value (less than 0.01) suggests a minimal chance of the relationship occurring by random chance. This underscores the importance of enhancing these factors to improve student performance, as they are statistically linked to academic success.

Table 5. Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.010	.028		.354	.724
	Frequency and Duration of Remedial Sessions	.517	.011	.422	9.163	.000
	Availability of Teaching/Learning Resources	.291	.052	.297	5.550	.000
	Parental Involvement and School Support in Remedial Education	.609	.050	.614	12.284	.000
	Teacher training and Instructional methods used	.190	.052	.190	3.662	.000

a. Dependent Variable: Learning Performance of Lower Primary Students

Source: Primary data, 2025

The regression analysis in Table 4.15 highlights key factors influencing the learning performance of lower primary students. The frequency and duration of remedial sessions have a strong positive impact, with a coefficient of 0.517 and a standardized Beta of 0.422, indicating significant influence (t-value of 9.163, p-value of 0.000). Availability of teaching and learning resources also contributes positively, with a coefficient of 0.291 and a Beta of 0.297 (t-value of 5.550, p-value of 0.000). The most substantial factor is parental involvement and school support, with a coefficient of 0.609 and a Beta of 0.614, demonstrating a very strong relationship (t-value of 12.284, p-value of 0.000). Lastly, teacher training and instructional methods have a smaller but significant impact, with a coefficient of 0.190 and a Beta of 0.190 (t-value of 3.662, p-value of 0.000).

5. Conclusions and Recommendations

5.1 Conclusions

This study explored the influence of the remedial education programme on learning performance among lower primary students in Gakenke District. Findings indicate that

remedial education contributes positively to students' academic outcomes including test scores, promotion rates, classroom participation, and retention. Key factors supporting this effect include the frequency and duration of remedial sessions, the availability of teaching and learning resources, teacher training, and parental involvement.

These results align with Vygotsky's sociocultural theory, particularly the idea that learning is socially mediated through scaffolding and support within the learner's Zone of Proximal Development (ZPD). Frequent, structured remedial sessions and skilled instructional practices function as scaffolds, enabling students to achieve learning goals they might not reach independently.

However, the conclusions must be interpreted considering certain limitations. The study used a cross-sectional design and relied on self-reported data from teachers and head teachers, which may introduce subjectivity and cannot fully capture changes over time. Moreover, the research was limited to public primary schools in a single district, which may affect the generalizability of the findings to other regions or contexts. While remedial education appears to play an important role in addressing learning gaps, its success is shaped by contextual factors including teacher capacity, parental engagement, and resource availability. Sustainable impact therefore requires coordinated action at the school, community, and policy levels.

5.2 Recommendations

1. **For schools and teachers**

   i. Organize ongoing professional development workshops focused on learner-centered remedial methods, differentiated instruction, and formative assessment strategies to better support students within their ZPD.

   ii. Use student performance data to design targeted remedial sessions, ensuring they directly address identified gaps and are integrated into regular classroom practice.

2. **For policymakers and curriculum developers**

   i. Strengthen national guidelines to provide clearer frameworks for remedial education implementation, including standardized tools for monitoring impact.

   ii. Invest in equitable resource distribution especially in rural schools to ensure consistent access to textbooks, supplementary materials, and digital tools that enrich remedial teaching.

3. **For school leadership and local education authorities**

   i. Foster systematic parent school partnerships by holding regular meetings, workshops, and information sessions that help parents understand and support remedial education at home.

ii. Monitor the quality and frequency of remedial sessions through district-level supervision and provide targeted support where gaps are identified

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