



Mathematics Teachers' Experiences in Implementing Remedial Teaching Strategies in Day Secondary Schools: A Case of Huye District, Rwanda

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Abstract: Mathematics learning difficulties continue to affect students' understanding and academic performance in secondary schools. This study examined mathematics teachers' experiences in implementing remedial teaching strategies in day secondary schools in Huye District, Rwanda. It identified remedial teaching strategies used, explored teachers' perceptions of their effectiveness, examined implementation challenges, and identified strategies for enhancing remedial teaching. The study employed a mixed-methods approach using a descriptive case study design. The target population comprised 163 participants (89 mathematics teachers, 37 Head Teachers, and 37 Directors of Studies), with a purposive sample of 72 participants (40 mathematics teachers, 16 Head Teachers, and 16 Directors of Studies). Data were collected through questionnaires, interview guides, and classroom observation protocols. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were analyzed thematically. Findings revealed that teachers frequently used individualized instruction, peer tutoring, additional exercises, continuous feedback, and re-teaching of difficult concepts. Teachers' qualifications ($p = .015$) and teaching experience ($p = .025$) significantly influenced remedial teaching implementation, while gender showed no significant differences except regarding time constraints ($p = .031$) and workload ($p = .038$). Teachers perceived remedial teaching as effective in improving learners' understanding, confidence, participation, and mathematics achievement. However, inadequate resources, heavy workloads, large classes, limited administrative support, and insufficient parental involvement constrained implementation. The study recommends strengthening support through resources, professional development, increased remedial lesson time, parental involvement, and technology integration.

Keywords: remedial teaching strategies, mathematics teachers, mathematics education, learning difficulties, day secondary schools, Huye District.

How to cite this work (APA):

Diane Iradukunda, D. & Nzabirirwa, W. (2026). Mathematics Teachers' Experiences in Implementing Remedial Teaching Strategies in Day Secondary Schools: A Case of Huye District, Rwanda. *Journal of Research Innovation and Implications in Education*, 10(3), 559 – 572. <https://doi.org/10.59765/hpa5>

1. Introduction

Mathematics is widely recognized as a fundamental subject that develops learners' logical reasoning, analytical thinking, and problem-solving skills, which are essential for academic success and national development (Grieser, 2018). It also forms the foundation for science, technology, engineering, and innovation (Fachada et al., 2022). Despite its importance, many learners worldwide, including those in Rwanda, continue to experience difficulties in understanding mathematical concepts, resulting in poor academic performance and limited mastery of key competencies (Shaban & Celestin Ntivuguruzwa, 2022). Consequently, education systems have adopted various instructional interventions to support struggling learners, among which remedial teaching has become one of the most widely used approaches (UNESCO, 2021; World Bank, 2020).

Remedial teaching refers to additional instructional support designed to help learners overcome academic difficulties by identifying learning gaps and providing targeted interventions (Daniel & Mugiraneza, 2023). It employs strategies such as individualized instruction, small-group teaching, peer tutoring, repeated practice, and continuous feedback to strengthen learners' conceptual understanding and improve academic achievement (Alegre et al., 2020). As an inclusive educational strategy, remedial teaching seeks to ensure that learners who fall behind attain the competencies required for successful academic progression. Globally, remedial education has become an important strategy for promoting equitable learning opportunities and improving educational outcomes (Vithal et al., 2024).

Many countries have institutionalized intervention programs such as Response to Intervention (RTI), which emphasize early identification of learning difficulties, continuous assessment, and differentiated instruction tailored to learners' needs (UNESCO, 2021; World Bank, 2020). Previous studies have shown that effective remedial programs enhance learners' confidence, classroom participation, conceptual understanding, and achievement, particularly in mathematics (Munusamy et al., 2025). In Africa, remedial teaching has gained increasing attention because many education systems continue to face challenges such as overcrowded classrooms, inadequate teaching resources, and diverse learner abilities (Kangwa, 2020).

These conditions often contribute to persistent low performance in mathematics. Consequently, many schools organize remedial lessons to provide

additional support for struggling learners. Although research has demonstrated that remedial teaching improves learners' understanding and mastery of mathematical concepts, its implementation is often constrained by inadequate teacher preparation, limited instructional time, and insufficient teaching and learning materials (Masengesho & Andala, 2024a).

In Rwanda, improving the quality of mathematics education remains a national priority. Through the Rwanda Education Board (REB) and the Ministry of Education, the government has introduced the Competence-Based Curriculum, strengthened teacher professional development, and increased the provision of instructional resources to improve teaching and learning (REB 2020). Schools are also encouraged to organize remedial lessons, particularly for learners preparing for national examinations, to address learning gaps and improve mathematics achievement.

Nevertheless, many secondary school students continue to experience difficulties in mathematics despite these initiatives (Sibomana et al., 2026). The effectiveness of remedial teaching therefore depends largely on teachers, who diagnose learners' difficulties, select appropriate instructional strategies, and provide continuous academic support (Daniel & Mugiraneza, 2023).

Although remedial teaching is widely practiced in Rwandan secondary schools, limited empirical evidence exists on teachers' experiences with remedial teaching strategies in mathematics, particularly in secondary schools of Huye District. Most previous studies have focused on students' academic performance or general instructional practices, with little attention given to teachers' practical experiences in implementing remedial instruction.

This gap limits understanding of the factors that influence the effectiveness of remedial teaching strategies. Therefore, this study explored teachers' experiences with remedial teaching strategies in mathematics in secondary schools of Huye District, Rwanda, with the aim of generating evidence to improve remedial teaching practices and enhance students' learning outcomes.

1.1.Problem Statement

Mathematics is a core subject that promotes logical reasoning, analytical thinking, and problem-solving skills essential for academic success and national development (Niss & Blum, 2020). Despite its importance, many secondary school students continue to experience persistent difficulties in understanding mathematical concepts, leading to low academic achievement globally and in Rwanda (Sibomana et al.,

2021). Although the Government of Rwanda has implemented educational reforms, including the Competence-Based Curriculum and initiatives to strengthen mathematics teaching, students' performance in mathematics remains unsatisfactory, particularly in mastering foundational concepts (Rwanda Education Board (REB,2019). This situation highlights the need for effective interventions to address learners' mathematical difficulties.

Remedial teaching has been adopted in secondary schools as an important strategy for addressing learning gaps through individualized instruction, peer tutoring, continuous assessment, and targeted feedback (Delisle, 2017). In Rwanda, the Rwanda Education Board has encouraged schools to implement remedial programs to improve learners' competencies in mathematics and other core subjects (REB, 2020). However, despite these efforts, improvements in mathematics achievement have not been consistently achieved, suggesting that the effectiveness of remedial teaching depends on its implementation in classroom contexts.

Teachers are central to the implementation of remedial teaching because they identify learners' difficulties, select appropriate instructional strategies, and monitor students' progress (May,2025)). However, challenges such as inadequate instructional resources, limited training in remedial pedagogy, large class sizes, and insufficient instructional time may hinder effective implementation (Olivier & Faustin, 2024)). Although previous studies have examined remedial teaching and students' academic performance, limited empirical evidence exists regarding mathematics teachers' experiences in implementing remedial teaching strategies, particularly in secondary schools of Huye District, Rwanda. Therefore, this study examined teachers' experiences with remedial teaching strategies in mathematics to provide evidence for improving remedial teaching practices.

1.2. Research Objectives

Generally, the study aimed to examine mathematics teachers' experiences with remedial teaching strategies in secondary schools of Huye District, Rwanda. The specific objectives were the following:

1. To identify the remedial teaching strategies used by mathematics teachers during instruction to support students with learning difficulties.
2. To explore how mathematics teachers, perceive the effectiveness of the remedial teaching program in secondary schools of Huye District.

3. To examine the challenges teachers experience in remedial teaching strategies in mathematics classrooms.
4. To explore improvement strategies for enhancing the effectiveness of remedial teaching in mathematics based on teachers' experiences.

The research aimed to answer four questions: (1) How do mathematics teachers perceive the effectiveness of the remedial teaching program in secondary schools of Huye District? (2) What remedial teaching strategies do mathematics teachers use during instruction to support students with learning difficulties in secondary schools of Huye District? (3) What challenges do mathematics teachers experience when implementing remedial teaching strategies in mathematics classrooms in secondary schools in Huye District? (4) What improvement strategies can be made to enhance the effectiveness of remedial teaching strategies in mathematics based on teachers' experiences?

1.3 Significance of the Study

Findings from this study assist mathematics teachers in gaining knowledge about effective remedial teaching strategies that can be used to support students experiencing mathematics learning difficulties. The study also helps students develop better conceptual understanding, improve academic performance, and build confidence in mathematics through appropriate remedial support. Furthermore, the study provides school administrators and stakeholders with information about challenges affecting the implementation of remedial teaching, including inadequate resources, limited instructional time, and large class sizes. In addition, the study contributes to the improvement of mathematics teaching practices and serves as a useful reference for future researchers interested in remedial teaching strategies.

1.4 Scope of the Study

The study was scoped geographically, in time, and in content as follows:

Geographical Scope: The research was carried out in the Huye District located in the Southern Province of Rwanda. The research focused on sixteen selected secondary schools in the district. This was where the remedial program was taught in day schools to students in S3 and S6 levels.

Time Scope: The period under study was from 2025 to 2026. It is due to the fact that since its inception, the

remedial teaching strategy has not been fully researched in relation to the experience of the mathematics teachers. With the help of the period, the researcher would be able to learn about implementation of the program, its perception by the teachers, challenges and support provided.

Content Scope: In the study, mathematics teachers' experiences in remedial teaching were investigated within Huye District. Particularly, the study looked into the remedial teaching strategies adopted by the mathematics teachers to cater for learners who face problems in learning, experiences in remedial teaching, problems encountered when implementing remedial teaching and what measures should be taken to improve the remedial teaching strategies in mathematics

2. Literature Review

2.1 Introduction

This section reviews the literature related to mathematics teachers' experiences in implementing remedial teaching strategies in day secondary schools. It covers the definitions of key terms, theoretical frameworks, and empirical research on teachers' experiences, remedial teaching strategies, learning difficulties of learners, and implementation challenges. The chapter compares findings from previous studies, identifies areas of agreement and differences among researchers, and highlights existing research gaps. Additionally, it demonstrates how the current study addresses these gaps by examining mathematics teachers' experiences in implementing remedial teaching strategies in Huye District, Rwanda.

2.2 Theoretical Review

This study is grounded in Vygotsky's Sociocultural Theory of Learning (Vygotsky, 1978) and Bloom's Mastery Learning Theory (Bloom, 1968). These theories provide a framework for understanding how remedial teaching strategies support learners experiencing difficulties in mathematics and how teachers' experiences influence the effectiveness of these interventions. Vygotsky's Sociocultural Theory views learning as a socially mediated process in which learners acquire knowledge through interaction with more knowledgeable others, particularly teachers and peers (Vygotsky, 1978).

The theory emphasizes the Zone of Proximal Development (ZPD), where learners achieve higher

levels of understanding through instructional scaffolding. In remedial mathematics teaching, teachers apply strategies such as guided practice, peer tutoring, and collaborative learning to assist learners in overcoming conceptual difficulties. Bloom's Mastery Learning Theory complements this perspective by proposing that nearly all learners can achieve mastery when provided with sufficient time, appropriate instruction, and continuous corrective feedback (Bloom, 1968).

Unlike approaches that emphasize only learners' abilities, Bloom's theory highlights the role of instructional conditions, including diagnostic assessment, differentiated instruction, and reinforcement, in enabling learners to master mathematical concepts. Together, these theories explain how teachers' experiences, instructional decisions, and support mechanisms influence the implementation and effectiveness of remedial teaching strategies. They provide a theoretical foundation for examining how scaffolding and mastery-oriented practices contribute to improved mathematics learning outcomes among secondary school students.

2.2 Empirical Review

Several empirical studies have examined the effectiveness of remedial teaching strategies in improving students' learning outcomes in mathematics. Jitendra et al. (2021) investigated the effectiveness of the Response to Intervention (RTI) model in supporting learners with mathematical difficulties and found that structured intervention programs and continuous assessment significantly improved learners' mathematical understanding and academic achievement. Similarly, Alegre et al., (2020) reported that individualized instruction, peer tutoring, and small-group learning enhanced learners' conceptual understanding and performance in mathematics. These studies consistently demonstrate that targeted support and continuous monitoring are important components of effective remedial teaching. However, while emphasized early identification and intervention, Alegre et al. (2020) placed greater emphasis on instructional approaches that respond to individual learner needs.

Likewise, Bigirimana et al., (2025) found that well-designed remedial programs improved learners' motivation, confidence, and active participation, indicating that remedial teaching contributes to both academic and affective outcomes. In Africa, (Dietrichson et al., 2021) similarly found that differentiated instruction, peer tutoring, collaborative learning, and continuous feedback improved students'

understanding of mathematical concepts and problem-solving skills. However, unlike studies focusing mainly on positive outcomes, (Klang et al., 2021) and Ncube & Luneta, (2025) highlighted implementation challenges such as limited instructional time, inadequate teaching and learning resources, shortages of qualified mathematics teachers, and limited professional development opportunities. These findings suggest that although remedial teaching strategies are effective, their success depends on the availability of appropriate resources and teacher preparedness.

In Rwanda, studies have also reported positive outcomes associated with remedial teaching practices. Olivier & Faustin, (2024) examined remedial teaching practices in Gicumbi District and found that adapting instructional methods, using personalized learning materials, and integrating visual and audio resources improved learners' mathematical reasoning and problem-solving skills. Similarly, (Nyandwi et al., 2024) reported that remedial classes in Kamonyi District enhanced students' learning outcomes when teachers provided additional academic support and encouraged active participation. Furthermore, (Niyibizi & Kazinyirako, 2024) found that regular remedial instruction supported by effective teaching strategies improved students' mathematical problem-solving abilities and overall academic performance in Kirehe District. These studies agree that remedial teaching contributes to improved mathematics learning outcomes; however, they mainly focus on students' achievements rather than teachers' experiences in implementing these strategies.

Despite the evidence supporting the effectiveness of remedial teaching, previous studies have mainly examined its influence on students' academic performance, with limited attention given to teachers' practical experiences in planning and implementing remedial teaching strategies. Specifically, limited research has explored how mathematics teachers select instructional strategies, address implementation challenges, and adapt remedial practices to learners' needs. None of the reviewed studies specifically examined mathematics teachers' experiences in implementing remedial teaching strategies in day secondary schools in Huye District, Rwanda. Therefore, this study explored teachers' experiences with remedial teaching strategies in mathematics to provide context-specific evidence that can inform improvements in remedial teaching practices and enhance students' learning outcomes.

3. Methodology

This section presents the methodology that was used to investigate the experiences of mathematics teachers in the implementation of remedial teaching strategies in day secondary schools in Huye District. The methodology includes description of the research design, target population, sample size, sampling method, data collection tools, data collection procedures, validity and reliability of research tools, ethical considerations, and analysis of data. The methodology used a scientific way of data collection and analysis in line with the objectives of this study.

3.1 Research Design

This study employed a descriptive case study design with a mixed-methods approach in 16 public secondary schools in Huye District, Rwanda. The descriptive case study design was appropriate because it enabled an in-depth exploration of mathematics teachers' experiences, practices, and challenges in implementing remedial teaching strategies within their real classroom contexts. A purposive sample of 72 participants (40 mathematics teachers, 16 Head Teachers, 16 DOS) was selected. Data were collected using questionnaires, interview guides, and observation protocols. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were analyzed thematically. Ethical principles were strictly observed throughout.

3.2 Data Collection Tools

Three instruments were used: structured questionnaires for mathematics teachers, semi-structured interview guides for Head Teachers and DOS, and classroom observation protocols. The questionnaire used closed-ended questions rated on a five-point Likert scale, designed based on study objectives. These instruments enabled comprehensive data collection, methodological triangulation, and verification of findings across multiple sources.

3.3 Sampling and Samples

The study targeted 37 public secondary schools in Huye District with 89 mathematics teachers, 37 Head Teachers, and 37 DOS. Using purposive and simple random sampling, 16 schools were selected based on remedial program implementation, location, and S3/S6 classes. The sample comprised 72 participants: 40 mathematics teachers, 16 Head Teachers, and 16

DOS. This sample size was adequate because the 40 mathematics teachers provided sufficient representation of teachers' experiences, while the 16 Head Teachers and 16 DOS provided relevant administrative perspectives from the selected schools. This sample size supported mixed-methods analysis, enabling both quantitative examination of teachers' experiences and qualitative exploration of school leaders' perspectives.

3.4 Data Collection Procedures

After obtaining institutional and district permissions, the researcher visited 16 selected schools, explained the study purpose, and obtained informed consent. Questionnaires were distributed to 40 mathematics teachers and collected after completion. Semi-structured interviews were conducted with 16 Head Teachers and 16 DOS. Classroom observations were conducted as a non-participant observer. All data were verified for completeness and accuracy.

3.5 Validity and Reliability of Research Instruments

Content validity was ensured through expert review by research specialists, mathematics educators, and the supervisor, which guided instrument revisions. Reliability was established through a pilot study using Cronbach's Alpha coefficient. The overall Cronbach's Alpha of the questionnaire was 0.92, indicating a high level of internal consistency (Cronbach, 1951). The reliability coefficients for the dimensions were: perceived effectiveness ($\alpha = 0.78$), remedial teaching strategies ($\alpha = 0.86$), challenges ($\alpha = 0.75$), and improvement strategies ($\alpha = 0.77$), confirming the instrument's suitability for data collection (Taber, 2018). Test-retest results also showed consistency, confirming the stability of the instrument.

3.6 Data Analysis

Quantitative data from questionnaires were analyzed using SPSS, employing descriptive statistics (frequencies, percentages, means, and standard deviations) and inferential statistics (t-tests and ANOVA). The t-test and ANOVA were used to determine whether teachers' characteristics, including gender, qualification, and teaching experience, significantly influenced the implementation of remedial teaching strategies. Qualitative data from interviews and observations were analyzed thematically through coding and categorization. Findings from both sources were triangulated to enhance credibility and provide a comprehensive understanding of teachers' experiences with remedial teaching strategies.

3.7 Ethical Considerations

Ethical principles were strictly observed. Official authorization was obtained from university authorities, district officials, and REB. Informed consent was secured from all 72 participants after explaining the study purpose, voluntary participation, and withdrawal rights. Confidentiality and anonymity were maintained; no personal identifiers were used. Data were securely stored and accessed only by the researcher. Participants were protected from harm, treated with respect, and observations were non-intrusive. Findings were reported accurately and objectively without fabrication or misrepresentation.

4. Results and Discussion

4.1 Remedial Teaching Strategies Used by Mathematics Teachers

The study sought to find out the remedial teaching strategies used by mathematics teachers when conducting remedial lessons. The results are summarized in Table 1.

Table 1: Remedial Teaching Strategies Used by Mathematics Teachers

Item	Mean	SD	Agree	Neutr al	Disagr ee	Remarks
			f (%)	f (%)	f (%)	
I use individualized instruction during remedial teaching	4.8	.40	40(100)	0(0.0)	0 (0.0)	Strong agree

Source: Field data, 2026.

I use peer tutoring to support learners with difficulties	4.57	.71	37(92.5)	2(5)	1(2.5)	Strong agree
I reteach difficult mathematical concepts during remedial sessions	4.45	.63	39(97.5)	0(0.0)	1(2.5)	Strong agree
I use group discussions during mathematics remedial lessons	4.27	.75	35(87)	0(0.0)	1(2.5)	Strong agree
I adapt teaching methods to meet learners' needs	4.05	1.17	33(82.5)	2(5)	3(7.5)	Agree
I use practical and instructional materials during mathematic remedial teaching	4.57	.81	37(92.5)	2(5)	1(2.5)	Strong agree
I provide additional mathematics exercises and assignments to learners.	4.57	.81	38(95)	2(5)	0(0.0)	Strong agree
Overall	4.48	.76	37(92.4)	3(2.5)	1(2.5)	Strong agree

The overall mean score of 4.48 (SD = 0.76) indicates that teachers reported frequent implementation of different remedial teaching strategies. Individualized instruction was the most highly rated strategy (M = 4.80, SD = 0.40), with all respondents indicating that they used it. This high rating may be explained by the nature of mathematics learning, where learners often experience difficulties in different concepts and require targeted support based on their specific weaknesses. Peer tutoring, practical and instructional materials, and additional exercises and assignments received equal mean scores of 4.57, suggesting that teachers combine learner-centered and practice-based approaches to strengthen mathematical understanding. Re-teaching difficult mathematical concepts was also widely reported (M = 4.45, SD = 0.63), followed by group discussions (M = 4.27, SD = 0.75). These findings indicate that teachers view remedial teaching as an opportunity to provide additional learning time, clarify misconceptions, and support learners who require further assistance.

The lowest-rated strategy was adapting teaching methods to meet individual learners' needs (M = 4.05, SD = 1.17). Although this remained a positive rating, the comparatively high standard deviation indicates variation among teachers in their ability to modify instruction. This variation may result from differences in teachers' professional preparation, availability of instructional resources, class size, and time allocated for remedial activities. Interviews with school leaders further revealed that teachers grouped learners according to identified learning difficulties and provided targeted support through additional exercises, revision activities, and focused explanations. This suggests that assessment information was used not only to identify learners requiring remediation but also to guide the type of support provided. However, the reported frequent use of individualized instruction should be interpreted

carefully because large class sizes were also identified as a challenge. Therefore, individualized instruction in this context may often involve short individual explanations and targeted assistance within group sessions rather than continuous one-to-one teaching.

The frequent use of peer tutoring agrees with Alegre et al. (2020), who found positive effects of peer tutoring on mathematics achievement. The similarity between the current findings and previous research may be explained by the collaborative nature of mathematics learning, where learners benefit from explaining concepts, sharing problem-solving approaches, and receiving immediate support from peers. However, the effectiveness of peer tutoring depends on proper organization, clear learner roles, and teacher monitoring, as emphasized by Alegre et al. (2020). Without adequate guidance, peer support may not effectively address learners' misconceptions.

The use of peer tutoring and group discussions also supports Vygotsky's Sociocultural Theory. Vygotsky (1978) explains that learning occurs through social interaction with more knowledgeable others, including teachers and peers. In this study, peer interaction and teacher guidance provided scaffolding that enabled learners to perform mathematical tasks they might not accomplish independently. Therefore, the findings extend Vygotsky's theory by demonstrating how collaborative remedial practices can serve as practical mechanisms for supporting struggling mathematics learners in Rwandan secondary schools.

Similarly, the use of re-teaching, additional exercises, and corrective explanations reflects Bloom's Mastery Learning Theory. These strategies provide learners with additional time, alternative explanations, and continuous feedback required to achieve mastery of mathematical concepts (Bloom, 1968). The findings

suggest that teachers recognize learning difficulties as issues that can be reduced through appropriate instructional support rather than as fixed learner limitations. However, re-teaching may only be effective when teachers adjust their instructional methods; repeating the same approach used during the initial lesson may not resolve existing misconceptions.

The findings also correspond to the identified personalized materials, modified teaching methods, visual resources, and tailored exercises as important remedial practices for developing mathematical reasoning and problem-solving competencies (Gilbert & Andala, 2025). The agreement between these findings may be due to the similar emphasis placed on learner-centered approaches in Rwandan mathematics classrooms. However, differences in the extent to which teachers implement these strategies may occur

because of variations in school resources, teacher preparation, and classroom conditions across districts. The findings imply that improving mathematics teaching in Rwanda requires continued teacher professional development, provision of adequate instructional materials, and supportive learning environments that enable teachers to implement remedial strategies more

4.2 Mathematics Teachers' Perceived Effectiveness of Remedial Teaching

The second objective of this study was to examine the mathematics teachers' perceptions of the effectiveness of remedial teaching in supporting learners experiencing difficulties in mathematics. The results are presented in Table 2.

Table 2: Mathematics Teachers' Perceived Effectiveness of Remedial Teaching

Source: Field data, 2026.

Item	Mean	SD	Agree	Neutr al	Disagree	Remar ks
			f (%)	f(%)	f(%)	
Remedial teaching improves students' understanding of mathematics concepts.	4.55	.84	38 (95)	0 (0)	2(5)	Agree
Remedial teaching improves students' academic performance.	4.62	.49	40(100)	0 (0)	0 (0)	Strong agree
Students become more confident after attending remedial classes.	4.60	.54	39(97.5)	1(2.5)	0 (0)	Strong agree
Remedial teaching helps reduce students' learning difficulties.	4.47	.93	38(95)	0(0.0)	2(5)	Strong agree
Remedial lessons increase students' participation in mathematics classes.	3.87	.93	31(77.5)	0(0.0)	4(10)	Agree
Remedial teaching contributes to better examination performance.	4.30	.85	34(85)	4(10)	2(5)	Strong agree
Overall mean	4.40	.76	37(92.0)	1(2.5)	2(5)	Strong agree

The overall mean of 4.40 ($SD = 0.76$) shows that mathematics teachers had strongly positive perceptions of remedial teaching. The highest-rated statement was that remedial teaching improves students' academic performance ($M = 4.62$, $SD = 0.49$), on which all 40 respondents expressed agreement. This positive perception may be explained by teachers' direct experiences observing improvements among learners who receive additional academic support. This was followed by the belief that remedial teaching increases learners' confidence ($M = 4.60$, $SD = 0.54$) and improves their understanding of mathematics concepts ($M = 4.55$, $SD = 0.84$). These findings suggest that teachers perceive remedial teaching as contributing not only to academic outcomes but also to learners' psychological readiness to engage with mathematics. Teachers also strongly agreed that remedial teaching reduces learning difficulties ($M = 4.47$, $SD = 0.93$) and contributes to improved examination performance ($M = 4.30$, $SD = 0.85$), indicating that remediation is viewed as an important mechanism for addressing knowledge gaps and preparing learners for academic demands.

The relatively lower rating for increased classroom participation ($M = 3.87$, $SD = 0.93$) indicates that teachers perceived the influence of remediation on participation as less pronounced than its influence on understanding, confidence, and academic performance. This difference may be attributed to the fact that remedial lessons in the participating schools appeared to focus mainly on correcting conceptual difficulties and improving assessment outcomes rather than transforming learners' participation patterns during regular classroom instruction. Therefore, although remedial teaching may improve learners' understanding and confidence, additional learner-centered strategies may be required to promote active participation in ordinary mathematics classrooms.,

School leaders' interview responses supported the questionnaire findings. Head teachers and deputy head teachers in charge of studies reported that remedial teaching was organized through additional instructional sessions, including sessions conducted during weekends and holidays. Learners were commonly identified through continuous assessment tests, classroom exercises, classroom observations, and end-of-term examination results. Learners who consistently performed below the expected level, commonly below 50%, were selected for targeted instructional support. This approach reflects an organized identification and intervention process, suggesting that schools attempt to base remedial

support on learners' demonstrated needs rather than general assumptions about poor performance.

These findings are consistent with (Powell et al., 2021) who established that targeted remedial instruction could reduce deficits in foundational mathematics knowledge among learners experiencing mathematics difficulties. The similarity may be explained by the shared emphasis on identifying specific learning gaps and providing focused instructional support. (Ndihekubwayo et al., 2020) emphasized that remedial teaching becomes more effective when interventions are directly connected to learners' conceptual and procedural difficulties. Similarly, (Masengesho & Sindayigaya, 2025) reported that structured remedial practices supported learners' mathematical problem-solving and academic performance in public lower-day secondary schools in Kirehe District. The current findings extend this evidence by showing that teachers in Huye District also perceive remedial teaching as beneficial for improving learners' mathematical competencies.

Likewise, Olivier & Faustin, (2024) found that adapting teaching methods, using personalized learning materials, and providing tailored activities supported learners' mathematics competencies in Gicumbi District. The agreement between these findings may be associated with the similar educational context in Rwanda, where teachers are encouraged to use learner-centered approaches to address differences in students' abilities. However, differences may occur depending on school-level factors such as availability of instructional resources, teacher preparation, class size, and time allocated for remedial activities. Therefore, the effectiveness of remedial teaching may depend not only on the strategies used but also on the conditions under which teachers implement them.

Although teachers strongly perceived remedial teaching as effective, the findings represent teachers' perceptions rather than independently measured changes in students' test results. Therefore, they demonstrate that teachers viewed remedial teaching as beneficial but do not establish a direct causal effect on learners' achievement. This distinction is important for accurate interpretation of the findings. Further studies using learner achievement data before and after remedial interventions could provide additional evidence regarding the actual impact of these practices.

The findings are also supported by Bloom's Mastery Learning Theory (Bloom, 1968), which argues that

most learners can attain expected learning outcomes when provided with appropriate instruction, sufficient time, corrective support, and opportunities for reassessment. In this study, the use of continuous assessments to identify learners, followed by additional instruction and exercises, reflects the assessment, correction reassessment process proposed by mastery learning. Furthermore, the findings relate to Vygotsky's Sociocultural Theory (Vygotsky, 1978), as remedial teaching provides learners with guided support from teachers and peers, enabling them to progress from their current level of understanding toward higher levels of mathematical competence.

Overall, the findings imply that remedial teaching represents an important support mechanism for

mathematics education in Rwanda. To maximize its contribution, schools need to strengthen teacher professional development, ensure adequate instructional resources, and create conditions that allow teachers to provide meaningful support to learners experiencing mathematics difficulties.

4.3 Challenges Experienced in Implementing Remedial Teaching

The third objective of this study was to find out the challenges mathematics teachers experienced when implementing remedial teaching. The findings are presented in Table 3.

Table 3: Challenges in Implementing Remedial Teaching Strategies

Item	Mean	SD	Agree	Neutr al	Disagre e	Remarks
			f (%)	f(%)	f(%)	
Large class size limits effective remedial teaching.	4.35	.69	37 (92.5)	0(0.0)	2(5)	Strong agree
Insufficient teaching and learning materials affect remedial teaching.	3.70	1.22	29(72.5)	4(10)	3(7.5)	Agree
School administration support for remedial teaching is inadequate.	4.70	.60	39(97.5)	0(0.0)	1(2.5)	Strong agree
Heavy workload affects my ability to conduct remedial teaching.	4.57	.87	37(92.5)	0(0.0)	2(5)	Strong agree
Limited parental support affects the success of remedial teaching.	4.3	.69	37(92.5)	2(5)	1(2.5)	Strong agree
Overall mean	4.40	0.76	36(89.5)	2(3)	2(4.5)	Strongly agree

Source: Field data, 2026.

The overall mean of 4.40 (SD = 0.76) indicates that mathematics teachers had strongly positive perceptions of remedial teaching. Teachers highly agreed that remedial teaching improves students' academic performance (M = 4.62, SD = 0.49),

increases learners' confidence (M = 4.60, SD = 0.54), and improves understanding of mathematics concepts (M = 4.55, SD = 0.84). These perceptions may be attributed to teachers' experiences observing learners benefit from additional support, repeated explanations,

and targeted exercises. The findings suggest that teachers view remedial teaching as important not only for improving achievement but also for reducing learners' difficulties and strengthening their confidence in mathematics.

The lower rating for increased classroom participation ($M = 3.87$, $SD = 0.93$) suggests that remedial teaching may focus more on correcting conceptual gaps and improving assessment outcomes than on increasing active participation during regular lessons. This may be due to limited instructional time and classroom conditions that restrict teachers from applying more participatory approaches. Therefore, additional learner-centered strategies may be needed to improve learners' engagement in mathematics classrooms.

Interview findings supported the questionnaire results. School leaders reported that remedial teaching was conducted through additional sessions during weekends and holidays, with learners identified through continuous assessment tests, classroom exercises, observations, and examination results. This indicates that schools use assessment information to identify learners' needs and provide targeted support rather than applying remediation generally.

The findings (Papadogiannis et al., 2023) who established that targeted remedial instruction reduces deficits in foundational mathematics knowledge by addressing specific learner difficulties. This similarity may be explained by the common focus on identifying learning gaps and providing appropriate instructional support. Similarly, (Nshimiyimana et al., 2023) found that structured remedial practices improved learners' mathematical problem-solving and academic performance. The current findings extend this evidence by showing that teachers in Huye District also perceive remedial teaching as valuable for improving learners' mathematical competencies.

The findings also correspond with (Olivier & Faustin, 2024) who found that adapted teaching methods, personalized learning materials, and tailored activities

supported mathematics learning in Gicumbi District. The agreement may be linked to the similar Rwandan educational context where teachers are encouraged to use learner-centered approaches. However, variations in effectiveness may occur due to differences in resources, teacher preparation, class size, and available instructional time.

Although teachers perceived remedial teaching positively, these findings represent teachers' perceptions and do not directly measure changes in students' achievement. Therefore, they indicate perceived effectiveness rather than a confirmed causal impact. The findings support Bloom's Mastery Learning Theory (Bloom, 1968) because continuous assessment, corrective support, and additional learning opportunities reflect the process of helping learners achieve mastery. They also support Vygotsky's Sociocultural Theory (Vygotsky, 1978), as teacher guidance and peer support provide scaffolding that helps learners progress toward higher levels of mathematical understanding.

Overall, the findings imply that remedial teaching is an important strategy for improving mathematics learning in Rwanda. Strengthening teacher professional development, providing adequate resources, and creating supportive conditions can enhance the effective implementation of remedial teaching practices.

4.4 Improvement strategies for enhancing the effectiveness of remedial teaching in mathematics based on teachers' experiences

The fourth objective of this study was to explore improvement strategies for enhancing the effectiveness of remedial teaching in mathematics based on teachers' experiences. The findings related to the improvements are presented in the following Figure 1 below.

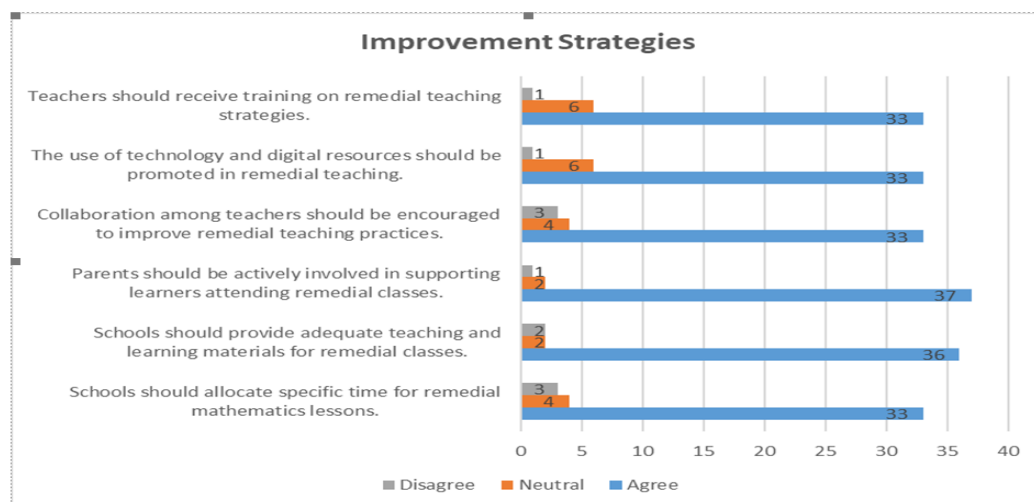


Figure 1: The improvements for enhancing the effectiveness of remedial teaching strategies in mathematics based on teachers' experiences.

Source: Field data, 2026

According to the results in Figure 1, the most strongly supported strategy was parental involvement in supporting learners attending remedial classes, where most respondents agreed ($n = 37$). This indicates that teachers perceive parents as important partners in improving learners' participation and success in remedial programs.

Similarly, respondents strongly supported the provision of adequate teaching and learning materials ($n = 36$), showing that effective remediation depends on sufficient instructional resources. The need to allocate specific time for remedial mathematics lessons was also highly supported ($n = 33$), suggesting that proper scheduling is necessary for consistent intervention.

Teachers further emphasized the importance of training on remedial teaching strategies and the use of technology and digital resources ($n = 33$), indicating the need for professional development and innovative teaching approaches. Additionally, collaboration among teachers was strongly supported ($n = 33$), showing that teamwork and sharing of experiences can strengthen remedial teaching practices. Overall, the findings suggest that effective remedial teaching requires cooperation among parents, teachers, and schools, supported by adequate resources and professional capacity.

5. Conclusion and Recommendations

5.1 Conclusion

This study explored mathematics teachers' experiences in implementing remedial teaching strategies in day secondary schools in Huye District. The study contributes context-specific evidence on how remedial teaching is practiced, the conditions influencing its implementation, and the support required to strengthen its effectiveness. The findings highlight the need for coordinated efforts among teachers, school leaders, parents, and stakeholders to improve remedial teaching practices and enhance mathematics learning outcomes in Rwanda.

5.2 Recommendations

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

1. **Ministry of Education and Rwanda Basic Education Board:** Strengthen policies and professional development on diagnostic assessment, differentiated instruction, scaffolding, small-group teaching, and corrective feedback. They should also support schools with appropriate mathematics teaching resources.
2. **School Administrators:** Allocate specific time for remedial lessons, manage teachers'

workloads, and establish regular monitoring of learners' progress. They should also support mathematics departments in collaborative planning and preparation of remedial materials.

3. **Mathematics Teachers:** Use varied remedial strategies based on identified learning gaps, provide continuous feedback, reassess learners' progress, and collaborate through peer support and sharing of effective practices.
4. **Parents:** Encourage learners' attendance in remedial sessions, support completion of additional exercises, and promote regular mathematics learning at home.
5. **Researchers:** Conduct further studies on the measurable effects of remedial teaching on mathematics achievement, comparisons between different school settings, and learners' experiences of remedial instruction.

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