

EXPLORING REMEDIAL TEACHING INTERVENTIONS FOR STUDENTS FACING PERSISTENT LEARNING CHALLENGES

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Abstract

This study investigates remedial teaching interventions for students experiencing persistent learning challenges, emphasizing their pedagogical foundations, implementation practices, and contextual barriers. Drawing on a survey of 300 teachers, the research identifies strong awareness of remedial teaching concepts, with widespread application of multisensory strategies, scaffolding, and diagnostic assessments. Teachers demonstrated positive attitudes toward the role of remediation in fostering academic recovery, self-efficacy, and inclusion, though constraints such as time, class size, limited resources, and insufficient professional training remained critical impediments. Findings indicate that public school and rural teachers exhibit comparatively stronger alignment with remedial practices, while teacher experience further enhances effectiveness. Grounded in Response to Intervention, Differentiated Instruction, and socio-cognitive theories, this work highlights that remedial education is not merely supplementary but an essential dimension of equitable schooling. The study recommends systemic investment in professional development, institutional support, and resource provision to optimize remedial teaching as a sustainable strategy for educational equity.

Keywords: Remedial Teaching, Interventions, Students, Learning Challenges

Introduction

Many students encounter persistent learning challenges that impede their academic progress. These challenges may arise from specific learning disabilities, gaps in foundational skills, or limited exposure to effective instructional strategies (Goswami, 2020). To address such difficulties, remedial teaching has emerged as a critical instructional approach aimed at bridging learning gaps and supporting students' academic achievement. Remedial teaching involves specialized strategies such as diagnostic assessment, differentiated pedagogy, scaffolding, and individualized instruction (Sharma & Singh, 2021).

Several studies have highlighted the effectiveness of remedial interventions in improving reading, writing, spelling, and mathematical performance among students with learning difficulties (Vincent et al., 2020). For instance, learners exposed to structured remedial instruction demonstrated significant improvements in literacy and numeracy outcomes compared to peers receiving traditional instruction (Nayak, 2019). However, research also shows variability in effectiveness, with outcomes often influenced by the quality of implementation, teacher competencies, and contextual factors such as class size and parental support (Ali & Hassan, 2018).

Given these mixed findings, there is a pressing need to explore which remedial interventions work best for students with persistent learning challenges and under what conditions they yield maximum benefits. This study seeks to investigate

remedial teaching practices, their implementation, and their effectiveness in enhancing academic performance and student engagement.

Persistent learning challenges can manifest in multiple forms, including dyslexia, dyscalculia, attention difficulties, or general academic underachievement (American Psychiatric Association, 2013). Such difficulties often result in students falling significantly behind their peers, affecting their confidence, motivation, and overall educational trajectory (Kumar & Ahmad, 2017).

Remedial teaching is a targeted intervention designed to address these gaps by focusing on learners' individual needs. It emphasizes diagnostic teaching, small-group instruction, and frequent formative assessment (Sharma & Singh, 2021). For example, Vincent et al. (2020) found remedial programs effective in enhancing reading and arithmetic skills among children with learning disabilities. Similarly, Ali and Hassan (2018) reported that differentiated remedial strategies fostered higher self-confidence and better retention of academic concepts.

Nevertheless, gaps remain regarding which specific remedial practices are most effective across diverse learner populations. Moreover, factors such as teacher preparedness, institutional support, and availability of resources are not consistently examined in prior studies (Goswami, 2020).

1. To identify remedial teaching interventions commonly employed for students with persistent learning challenges.
2. To evaluate the effectiveness of remedial teaching strategies on learners' academic performance and self-confidence.
3. To explore the challenges faced by teachers in implementing remedial teaching interventions.
4. To examine the role of teacher competencies, instructional design, and contextual factors in determining intervention effectiveness.
5. To recommend strategies for improving remedial teaching practices in educational settings.

Although numerous studies confirm the potential of remedial teaching to support struggling learners, evidence remains inconsistent (Ali & Hassan, 2018; Nayak, 2019). Many studies generalize remedial education without distinguishing between types of interventions tailored for specific learning difficulties. Furthermore, the role of teacher competencies and implementation contexts such as class size, assessment practices, and family involvement remains underexplored (Goswami, 2020). There is also limited qualitative insight into students' and teachers' experiences with remedial interventions. This study aims to bridge these gaps by analyzing both the effectiveness and the practical implementation of remedial teaching interventions.

This research contributes to:

- Educational equity: Helping ensure that learners with persistent challenges receive equitable learning opportunities (Vincent et al., 2020).
- Teacher development: Providing insights into the competencies teachers require for effective remedial instruction (Sharma & Singh, 2021).

- Policy-making: Offering evidence-based recommendations for designing remedial education programs and resource allocation.
- Future research: Building a foundation for longitudinal and experimental studies on remedial education effectiveness.

This study is guided by the Response to Intervention (RTI) model, which emphasizes early identification, tiered intervention, and continuous progress monitoring (Fuchs & Fuchs, 2006). Students who do not respond to general classroom instruction receive increasingly intensive remedial interventions, making RTI a suitable framework for analyzing persistent learning challenges. Additionally, the theory of Differentiated Instruction underpins this study, emphasizing that instruction should be adapted to learners' readiness, interests, and profiles (Tomlinson, 2014). Remedial teaching aligns with this framework by providing individualized or small-group interventions.

Finally, social-cognitive theory of self-efficacy (Bandura, 1997) is relevant, as remedial teaching not only improves academic performance but also enhances learners' confidence and belief in their abilities critical for sustaining engagement and long-term achievement.

Literature Review

Education systems are founded on the principle of providing equitable learning opportunities for all students. However, a persistent reality is that a substantial number of students struggle to acquire foundational academic skills, particularly in core areas like literacy and numeracy. These persistent learning challenges (PLCs) are not transient difficulties but are enduring gaps in knowledge and skills that widen over time without appropriate intervention (Fuchs, Fuchs, & Compton, 2012). Students with PLCs may include those with specific learning disabilities (SLDs), those from disadvantaged socioeconomic backgrounds, English language learners (ELLs), and those who have experienced inadequate prior instruction.

The consequences of unaddressed learning gaps are severe and multifaceted. Academically, students fall further behind their peers, leading to a cycle of failure and frustration. Psychologically, chronic academic struggle is closely linked to low self-efficacy, anxiety, and negative attitudes toward school (Sideridis, 2007). Socially and economically, the long-term implications include higher dropout rates and limited post-secondary opportunities (Hernandez, 2011). Therefore, the imperative to identify and implement effective remedial teaching interventions is not merely an educational issue but a critical societal one.

Remedial teaching refers to the process of providing specialized, targeted instruction to help students catch up to their expected grade-level competencies. It moves beyond standard classroom teaching by being more intensive, individualized, and informed by diagnostic assessment. The purpose of this literature review is to explore and synthesize the existing scholarly research on effective remedial interventions for students with persistent learning challenges. This review will address the following questions:

1. Who are the students targeted by remedial interventions, and what are the common causes of persistent learning challenges?

2. What are the theoretical foundations that guide effective remedial teaching?
3. What specific evidence-based instructional strategies are most effective in remediation?
4. What are the critical factors for successful implementation of these interventions?
5. What gaps exist in the current literature, and what are the directions for future research?

By examining these questions, this review aims to provide a comprehensive overview of the state of remedial education, offering insights for educators, policymakers, and researchers dedicated to supporting the most vulnerable learners.

Defining the Population and the Nature of Persistent Learning Challenges

Students facing persistent learning challenges are a heterogeneous group. Their difficulties can stem from intrinsic, extrinsic, or most commonly, a combination of both factors.

Intrinsic Factors:

A significant subset of students with PLCs have neurobiological-based specific learning disabilities (SLDs), such as dyslexia (reading disability), dyscalculia (mathematics disability), and dysgraphia (writing disability). These are characterized by unexpected difficulties in acquiring specific academic skills despite conventional instruction, adequate intelligence, and socio-cultural opportunity (American Psychiatric Association, 2013). Other intrinsic factors can include attention-deficit/hyperactivity disorder (ADHD), which impacts executive functions crucial for learning, and mild intellectual disabilities.

Extrinsic Factors:

A vast number of students struggle due to environmental and experiential factors. This includes students from low socioeconomic status (SES) backgrounds, who often have less access to educational resources and may experience "opportunity gaps" rather than "achievement gaps" (Carter & Welner, 2013). English Language Learners (ELLs) face the dual challenge of acquiring academic content while simultaneously developing proficiency in a new language. Furthermore, inadequate prior instruction, high teacher turnover, and absenteeism can create foundational gaps that become increasingly difficult to remediate as curriculum demands escalate (Fuchs et al., 2012).

It is crucial to understand that these factors are not mutually exclusive. A student from a low-SES background might also have an undiagnosed learning disability, compounding their challenges. Effective remediation, therefore, requires a nuanced understanding of the root causes of a student's struggle, which is achieved through careful diagnostic assessment.

Theoretical Foundations of Remedial Teaching

Effective remedial interventions are not random acts of instruction but are grounded in established theories of learning and development.

Sociocultural Theory (Vygotsky, 1978):

Lev Vygotsky's concept of the Zone of Proximal Development (ZPD) is fundamental to remediation. The ZPD is the gap between what a learner can do independently and

what they can achieve with guidance and support from a skilled partner. Remedial teaching operates squarely within the ZPD. The instructor acts as the "more knowledgeable other," providing systematic scaffolding temporary supports such as prompts, models, or simplified tasks that allow the student to accomplish goals they could not manage alone. As the student's competence grows, the scaffolding is gradually removed, a process known as fading, until the skill is internalized and can be performed independently (Wood, Bruner, & Ross, 1976).

Response to Intervention (RTI) / Multi-Tiered System of Supports (MTSS):

RTI is a proactive, multi-tiered framework that provides a structural foundation for delivering remedial interventions. Its primary purpose is to identify struggling students early and provide them with increasing levels of intensive support.

- **Tier 1:** High-quality, evidence-based core instruction for all students in the general classroom. Universal screening is used to identify those who are not responding adequately.
- **Tier 2:** For students identified as at-risk, Tier 2 provides targeted, supplemental interventions in small groups. Progress is monitored frequently to gauge responsiveness.
- **Tier 3:** For students who do not respond sufficiently to Tier 2, Tier 3 offers intensive, individualized interventions that are more frequent and of longer duration. This tier is often synonymous with special education services but is not exclusive to it (Fuchs & Fuchs, 2006).

The RTI/MTSS model is data-driven, ensuring that instructional decisions are based on student performance rather than subjective judgment.

Information Processing Theory:

This theory views learning as a process similar to how a computer handles information: input, processing, storage, and output. Students with learning challenges often have deficits in one or more of these areas. For example, a student with dyslexia may have difficulty with phonological processing (input), while a student with ADHD may struggle with working memory (processing). Remedial strategies based on this theory aim to strengthen weak cognitive processes or teach compensatory strategies to work around them (Swanson & Siegel, 2001).

Evidence-Based Remedial Teaching Strategies

Research over the past several decades has identified a suite of instructional strategies that are highly effective for remedial teaching. These strategies are often used in combination.

1. Targeted Academic Instruction

This involves breaking down complex skills into smaller, manageable components and teaching them explicitly and systematically.

Systematic Phonics Instruction for Reading:

For students with persistent reading difficulties like dyslexia, systematic phonics instruction is the gold standard. It teaches letter-sound relationships in a logical, predefined sequence, moving from simple to complex. This approach is significantly more effective than non-systematic or embedded phonics approaches (National

Reading Panel, 2000; Torgesen et al., 2001). Programs like Orton-Gillingham and Wilson Reading System are grounded in this principle.

Explicit Instruction and Modeling:

This is a direct, structured teaching method. The teacher clearly explains a concept, models the skill while thinking aloud to make the invisible cognitive processes visible, provides guided practice with immediate feedback, and finally, moves to independent practice (Archer & Hughes, 2011). The formula "I do (model), We do (guided practice), You do (independent practice)" is a hallmark of this approach.

Diagnostic-Prescriptive Teaching:

This is a cyclical process of 1) using assessments to diagnose the specific nature of a student's error patterns or misconceptions, 2) prescribing and delivering instruction targeted to those specific needs, and 3) re-assessing to determine if the intervention was successful (Howell, Fox, & Morehead, 1993). It ensures that remediation is precisely targeted and efficient.

2. Cognitive and Metacognitive Strategy Training

These strategies focus on teaching students *how* to learn, rather than just *what* to learn.

Metacognitive Strategies:

These involve teaching students to plan, monitor, and evaluate their own learning. For example, in reading comprehension, students can be taught strategies like self-questioning ("Do I understand what I just read?") and summarizing main ideas (Pressley & Gaskins, 2006). In mathematics, students can be taught to visualize a problem and check their answer for reasonableness.

Cognitive Strategy Instruction:

This involves teaching specific, step-by-step procedures for accomplishing academic tasks. A well-researched example is the **POW + TREE** strategy for persuasive writing: Pick my idea, Organize my notes, Write and say more (POW); and Topic sentence, Reasons, Ending, Examine (TREE) (Harris, Graham, & Mason, 2003). These strategies provide a concrete scaffold that supports executive functioning.

3. Technology-Assisted Interventions

Educational technology can provide personalized, engaging, and intensive practice that complements teacher-led instruction.

Computer-Assisted Instruction (CAI):

CAI programs can provide individualized drill and practice, immediate feedback, and multimedia presentations of content that cater to different learning styles. They are particularly effective for building fluency in basic skills (e.g., math facts, sight words) (Slavin & Lake, 2008).

Adaptive Learning Software:

More sophisticated than traditional CAI, adaptive learning platforms use algorithms to adjust the difficulty and type of content presented to a student in real-time based on their responses, ensuring they are always working within their ZPD (VanLehn, 2011).

4. Socio-Emotional and Behavioral Support

Persistent academic failure is intrinsically linked to emotional and behavioral issues. Effective remediation must address these aspects.

Building Self-Efficacy and Growth Mindset:

Students with PLCs often develop a "fixed mindset," believing their intelligence is static and that effort is futile (Dweck, 2006). Remedial teachers must explicitly foster a "growth mindset" by praising effort and strategy use rather than innate ability, and by framing challenges as opportunities for brain growth.

Positive Behavior Interventions and Supports (PBIS):

Similar to RTIacademically, PBIS is a tiered framework for providing behavioral support. Creating a predictable, positive, and supportive classroom environment is essential for students who are anxious or frustrated from past failures (Sugai & Horner, 2006).

Critical Factors for Successful Implementation

The choice of strategy is necessary but not sufficient for success. Implementation fidelity and context are critical.

Assessment and Progress Monitoring:

Effective remediation is driven by data. Curriculum-Based Measurement (CBM) is a widely used method for frequently and quickly measuring student growth in basic skills (e.g., reading fluency, math computation). This data is used to make informed decisions about the effectiveness of an intervention and whether it needs to be modified (Deno, 2003).

Intensity of Intervention:

The intensity is determined by dosage (e.g., minutes per day, days per week), group size (smaller is better for intensive intervention), and the expertise of the instructor. Tier 3 interventions typically require one-on-one or very small group (1-3 students) settings with a highly trained teacher (Vaughn, Wanzek, & Fletcher, 2007).

Teacher Expertise and Training:

Delivering high-quality remedial instruction requires deep content knowledge, pedagogical skill, and an understanding of learning disabilities. Teachers need training in diagnostic assessment, explicit instruction, and the specific evidence-based programs they are implementing (Darling-Hammond, 2000).

Home-School Collaboration:

Engaging families in the remediation process is vital. Informing parents of the strategies being used and providing them with ways to support learning at home can reinforce and generalize skills (Christenson & Sheridan, 2001).

Gaps in the Literature and Future Research Directions

Despite a robust body of research, several areas require further exploration.

Long-Term Efficacy:

While many studies demonstrate short-term gains from specific interventions, there is less research on the long-term sustainability of these gains. Do the benefits of intensive early remediation persist into middle and high school?

Remediation in Content Areas:

The vast majority of research focuses on reading (especially early reading) and, to a lesser extent, mathematics. There is a significant need for more research on effective remedial strategies for older students in content-area subjects like science and social studies, which require advanced literacy and reasoning skills.

Teacher Preparation and Support:

More research is needed on the most effective models for preparing general and special education teachers to implement these complex interventions with fidelity. The high rates of burnout among interventionists also warrant investigation into support systems.

Cultural and Linguistic Responsiveness:

Research must continue to explore how evidence-based strategies can be adapted to be culturally and linguistically responsive for diverse student populations, particularly ELLs, to ensure that interventions are effective and equitable (Klingner & Edwards, 2006).

Integration of Affective and Academic Domains:

Future studies should investigate integrated intervention models that simultaneously target academic skills, metacognition, and socio-emotional health, recognizing that these domains are inextricably linked.

Students facing persistent learning challenges represent a diverse population whose academic struggles demand more than just repetition of standard classroom instruction. Effective remediation is a sophisticated educational endeavor grounded in theories of learning and development, most notably Vygotsky's ZPD and the structured RTI/MTSS framework. It requires the implementation of evidence-based strategies such as explicit instruction, systematic phonics, cognitive strategy training, and technology-assisted practice, all delivered within a supportive environment that also addresses students' socio-emotional needs.

The success of any intervention hinges on critical implementation factors: accurate and ongoing assessment, sufficient intensity, and a highly trained, supported teacher. While the current research provides a strong foundation for effective practice, future work must focus on the long-term outcomes of remediation, its application in understudied content areas, and the development of a teaching force equipped to meet these complex challenges. Ultimately, a commitment to effective remedial teaching is a commitment to educational equity, ensuring that all students, regardless of their starting point, have the opportunity to reach their full potential.

Research Methodology

This portion describes the methodology adopted to conduct the study, "Exploring Remedial Teaching Interventions for Students Facing Persistent Learning

Challenges.” It outlines the research design, population and sample, instrument used, procedures for data collection, and methods of data analysis.

Research Design

The study followed a descriptive survey design, which was suitable for gathering teachers’ views and practices regarding remedial teaching interventions. This design allowed the researcher to collect data systematically and to present results in the form of frequencies and percentages.

Population

The population of the study consisted of elementary school teachers responsible for teaching students who face persistent learning difficulties in their classrooms.

Sample

A total of 300 teachers were selected as the sample. The sample was drawn using a random sampling technique to ensure that teachers from different schools, age groups, and backgrounds were represented.

Research Instrument

The questionnaire was the only research instrument used for data collection. It was designed to cover key areas such as teaching methods, instructional materials, teaching strategies, use of technology, and assessment practices in remedial teaching. The questionnaire was structured using a Likert scale to measure the frequency of practices.

Validity and Reliability

- Validity of the questionnaire was established by seeking expert opinion from specialists in education and remedial teaching. Their feedback was incorporated to refine the items.
- Reliability was tested through a pilot study, and the internal consistency of the instrument was calculated using Cronbach’s Alpha.

Data Collection Procedure

The researcher visited the schools personally and distributed the questionnaires to the teachers. The purpose of the study was explained to ensure accurate responses. Teachers were assured of confidentiality and anonymity of their responses. The completed questionnaires were collected on the same day or within an agreed time frame.

Data Analysis

Data collected through the questionnaires was analyzed using descriptive statistics. Frequencies and percentages were computed to summarize the responses. The results were presented in tables for clarity and easy interpretation.

Table 1: Frequency Distribution of Respondents by Demographics

Title	Description	Frequency	Percentage (%)
Gender	Male	101	33.7%
	Female	199	66.3%
		300	100%
Age	21-30 Y	6	2.0%
	31-40 Y	81	27.0%
	41-50 Y	170	56.7%
	51-60 Y	43	14.3%
		300	100%
School Type	Public	153	51.0%
	Private	147	49.0%
		300	100%
Area of Posting	Rural	55	18.3%
	Urban	245	81.7%
		300	100%
Division	Lahore	32	10.7%
	Multan	70	23.3%
	Rawalpindi	57	19.0%
	Sargodha	54	18.0%
	Bahawalpur	87	29.0%
		300	100%
Experience	1-5 Y	69	23.0%
	6-10 Y	126	42.0%
	11-15 Y	88	29.3%

>15 Y

17

5.7%

This table shows that out of 300 respondents, females (66.3%) outnumber males (33.7%). The majority are between 41–50 years (56.7%), while only 2% are under 30. Public and private school teachers are almost evenly represented, though slightly more are from public schools (51%). A large majority (81.7%) work in urban areas, with Bahawalpur having the highest share of participants (29%). Most teachers have 6–10 years of experience (42%), followed by 11–15 years (29.3%).

Table 2: Teachers' Awareness of Remedial Teaching Concepts

Sr.	Statements of Questions	SA	A	UD	DA	SDA	M	SD
1	I am familiar with the concept of remedial teaching.	191 64%	84 28%	19 6%	6 2%	0 0%	4.53	0.71
2	I can differentiate between remedial teaching and regular classroom instruction.	172 57%	117 39%	11 4%	0 0%	0 0%	4.54	0.57
3	I am aware of different types of learning difficulties students face.	140 47%	147 49%	11 4%	0 0%	2 1%	4.41	0.63
4	I understand the importance of early identification of learning challenges.	153 51%	121 40%	5 2%	15 5%	6 2%	4.33	0.89
5	I have adequate knowledge of evidence-based remedial teaching strategies.	109 36%	140 47%	34 11%	17 6%	0 0%	4.14	0.83
6	I can design individualized learning plans for struggling students.	117 39%	113 38%	48 16%	22 7%	0 0%	4.08	0.92
7	I regularly update my knowledge about remedial teaching approaches.	119 40%	130 43%	39 13%	6 2%	6 2%	4.17	0.87
8	Teacher training programs adequately prepared me to provide remedial instruction.	120 40%	145 48%	28 9%	1 0%	6 2%	4.24	0.79

Findings indicate that teachers are generally familiar with remedial teaching. Most strongly agreed or agreed that they understand its concept (92%), can differentiate it from regular teaching (96%), and recognize learning difficulties (96%). Awareness of early identification (91%) and evidence-based strategies (83%) is high, though fewer teachers feel fully confident in designing individualized plans (77%). Overall,

knowledge about remedial teaching concepts is strong but practical application skills need strengthening.

Table 3: Teachers' Remedial Teaching Practices

Sr.	Statements of Questions	SA	A	UD	DA	SDA	M	SD
9	I modify my teaching methods to accommodate students with persistent learning challenges.	109 36%	138 46%	36 12%	0 0%	17 6%	4.07	1.00
10	I use multisensory approaches (visual, auditory, kinesthetic) in my teaching.	137 46%	108 36%	21 7%	23 8%	11 4%	4.12	1.07
11	I provide additional time and practice opportunities for struggling learners.	134 45%	113 38%	41 14%	6 2%	6 2%	4.21	0.90
12	I incorporate small-group or one-to-one instruction for remediation.	111 37%	116 39%	50 17%	20 7%	3 1%	4.04	0.95
13	I use technology (apps, digital tools, assistive devices) to support remedial teaching.	99 33%	150 50%	33 11%	17 6%	1 0%	4.10	0.83
14	I adjust the pace of instruction to match students' needs.	130 43%	128 43%	25 8%	17 6%	0 0%	4.24	0.83
15	I provide structured step-by-step guidance for difficult tasks.	136 45%	122 41%	31 10%	11 4%	0 0%	4.28	0.79
16	I use scaffolding strategies (e.g., graphic organizers, guided notes) in remedial teaching.	117 39%	145 48%	26 9%	12 4%	0 0%	4.22	0.77

This table highlights teachers' practices in applying remedial strategies. A majority use multisensory approaches (82%), provide extra practice (83%), and adopt small-group or one-to-one instruction (76%). Technology integration is common (83%), and many teachers adjust instructional pace (86%) and provide structured guidance (86%). The use of scaffolding strategies (87%) is also well reported. Overall, teachers actively adopt a range of remedial strategies, though not all consistently.

Table 4: Teachers' Assessment Practices in Remedial Teaching

Sr.	Statements of Questions	SA	A	UD	DA	SDA	M	SD
17	I use diagnostic assessments to identify students' learning difficulties.	124 41%	135 45%	28 9%	13 4%	0 0%	4.23	0.79
18	I frequently use formative assessments to monitor student progress.	142 47%	123 41%	24 8%	11 4%	0 0%	4.32	0.77
19	I adapt assessments to suit the learning needs of struggling students.	124 41%	129 43%	27 9%	20 7%	0 0%	4.19	0.86
20	I provide timely and constructive feedback to students.	114 38%	133 44%	35 12%	15 5%	3 1%	4.13	0.88
21	I maintain records of students' remedial progress.	140 47%	120 40%	33 11%	7 2%	0 0%	4.31	0.76
22	I involve students in self-assessment to increase awareness of their learning.	143 48%	103 34%	42 14%	12 4%	0 0%	4.26	0.84
23	I use test results to design remedial teaching interventions.	141 47%	135 45%	22 7%	2 1%	0 0%	4.38	0.65
24	I collaborate with colleagues to discuss assessment findings of struggling learners.	165 55%	93 31%	30 10%	4 1%	8 3%	4.34	0.91

The results show strong use of assessment for remediation. Most teachers employ diagnostic (86%) and formative assessments (88%), adapt tests (84%), and provide constructive feedback (82%). Record-keeping is well maintained (87%), while self-assessment involvement (82%) and test-based interventions (92%) are also common. Collaboration with colleagues (86%) further strengthens assessment-based remedial efforts, showing teachers value both individual and collective approaches.

Table 5: Teachers' Beliefs about Remedial Teaching

Sr.	Statements of Questions	SA	A	UD	DA	SDA	M	SD
25	Remedial teaching is essential for supporting students with persistent learning difficulties.	170 57%	99 33%	20 7%	5 2%	6 2%	4.41	0.85
26	All students are capable of improvement if given appropriate remedial support.	153 51%	130 43%	17 6%	0 0%	0 0%	4.45	0.60
27	Remedial teaching enhances students' confidence and motivation.	165 55%	123 41%	12 4%	0 0%	0 0%	4.51	0.58
28	Implementing remedial teaching requires additional teacher effort.	134 45%	116 39%	44 15%	6 2%	0 0%	4.26	0.78
29	I feel confident in my ability to provide effective remedial teaching.	151 50%	126 42%	18 6%	5 2%	0 0%	4.41	0.68
30	Remedial teaching should be integrated into mainstream classrooms.	168 56%	108 36%	18 6%	0 0%	6 2%	4.44	0.78
31	Teachers play a critical role in reducing learning gaps through remedial interventions.	161 54%	100 33%	21 7%	15 5%	3 1%	4.34	0.89
32	I believe remedial teaching contributes to inclusive education practices.	153 51%	110 37%	25 8%	12 4%	0 0%	4.35	0.80

Teachers hold positive attitudes toward remedial teaching. A vast majority believe it supports struggling students (90%), enhances confidence (96%), and promotes inclusive education (88%). Many agree that all students can improve with proper support (94%) and that teachers play a critical role in reducing learning gaps (87%). Although they acknowledge remedial teaching requires extra effort (84%), they strongly support integrating it into mainstream classrooms (92%).

Table 6: Barriers and Support for Remedial Teaching

Sr.	Statements of Questions	SA	A	UD	DA	SDA	M	SD
33	Lack of time limits my ability to provide remedial instruction.	135 45%	132 44%	18 6%	12 4%	3 1%	4.28	0.83
34	Large class sizes make it difficult to implement remedial teaching.	118 39%	143 48%	14 5%	25 8%	0 0%	4.18	0.86
35	Limited teaching resources hinder remedial interventions.	131 44%	108 36%	31 10%	24 8%	6 2%	4.11	1.02
36	I need more professional training on remedial teaching strategies.	142 47%	106 35%	27 9%	25 8%	0 0%	4.22	0.92
37	My school provides adequate support for remedial teaching.	140 47%	99 33%	49 16%	12 4%	0 0%	4.22	0.86
38	Collaboration with parents enhances the effectiveness of remedial interventions.	144 48%	101 34%	27 9%	25 8%	3 1%	4.19	0.98
39	Administrative support is crucial for implementing remedial teaching programs.	136 45%	110 37%	28 9%	18 6%	8 3%	4.16	1.00
40	Continuous professional development programs would strengthen my remedial teaching skills.	156 52%	108 36%	16 5%	7 2%	13 4%	4.29	0.99

This table identifies challenges teachers face. Lack of time (89%) and large class sizes (87%) limit effective implementation. Resource shortages (80%) and insufficient professional training (82%) are other hurdles. Although many report receiving school support (80%) and value parental involvement (82%), they stress the importance of administrative support (82%) and continuous professional development (88%). Overall, barriers exist but can be addressed with better institutional and administrative backing.

Table 1: Independent Sample t-Test for Gender Differences

Gender	N	Mean	Std. Deviation	df	t	Sig. (2-tailed)
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Male	101	171.25	11.94	298	0.56	0.58
Female	199	170.44	11.97			

The independent samples *t*-test compared male teachers ($N = 101$, $M = 171.25$, $SD = 11.94$) and female teachers ($N = 199$, $M = 170.44$, $SD = 11.97$). The mean difference between the two groups was 0.81 points ($171.25 > 170.44$), which is very small relative to the pooled standard deviation. The obtained *t*-value was 0.56 with 298 degrees of freedom and was not statistically significant ($p = 0.58 > 0.05$). This indicates that the observed difference is not meaningful. The effect size (Cohen's *d*) would be negligible (< 0.20), confirming that gender has little to no impact on teachers' perceptions in this study.

Table 2: Independent Sample t-Test for Type of School

Type of School	N	Mean	Std. Deviation	df	t	Sig. (2-tailed)
Public	153	172.48	12.20	298	2.65	0.008
Private	147	168.86	11.43			

Teachers from public schools ($N = 153$, $M = 172.48$, $SD = 12.20$) scored higher than teachers from private schools ($N = 147$, $M = 168.86$, $SD = 11.43$), with a mean difference of 3.62 ($172.48 > 168.86$). The independent samples *t*-test showed this difference was statistically significant ($t = 2.65$, $df = 298$, $p = 0.008 < 0.05$). This suggests that type of school has a meaningful effect, with public school teachers reporting more positive perceptions than private school teachers. The effect size (Cohen's *d*) would likely fall in the small-to-moderate range (> 0.20), indicating that the difference is practically relevant as well.

Table 3: Independent Sample t-Test for Location of School

Location of School	N	Mean	Std. Deviation	df	t	Sig. (2-tailed)
Rural Area	55	179.82	11.73	298	6.70	0
Urban Area	245	168.67	11.03			

Teachers from rural schools ($N = 55$, $M = 179.82$, $SD = 11.73$) reported substantially higher scores than teachers from urban schools ($N = 245$, $M = 168.67$, $SD = 11.03$), with a mean difference of 11.15 ($179.82 > 168.67$). The independent samples *t*-test indicated this difference was statistically significant ($t = 6.70$, $df = 298$, $p = 0.000 < 0.001$). This demonstrates that school location strongly influences teachers' perceptions, with rural teachers showing significantly more positive views compared to urban teachers. The magnitude of this difference suggests a large effect size (Cohen's *d* > 0.80), highlighting a practically meaningful gap between the two groups.

Table 4: One-Way ANOVA for Age Differences

Age	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2749.03	3	916.34	6.79	0.00
Within Groups	39930.74	296	134.90		
Total	42679.77	299			

The one-way ANOVA examined differences in perceptions across age groups. Results showed a statistically significant effect of age, $F(3, 296) = 6.79$, $p = 0.000 < 0.001$. The between-groups variance ($MS = 916.34$) was notably higher than the within-groups variance ($MS = 134.90$), indicating that teachers' perceptions varied meaningfully by age. These findings suggest that age plays an important role in shaping perceptions. However, the ANOVA does not specify which age groups differ. Post-hoc tests (e.g., Tukey's HSD) would be required to determine where the significant differences lie (e.g., whether younger teachers < older teachers, or vice versa).

Table 5: One-Way ANOVA for Teaching Experience

Experience	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2791.78	3	930.59	6.91	0.00
Within Groups	39887.99	296	134.76		
Total	42679.77	299			

The one-way ANOVA tested differences in perceptions across teaching experience levels. Results revealed a statistically significant effect of teaching experience, $F(3, 296) = 6.91$, $p = 0.000 < 0.001$. The between-groups variance ($MS = 930.59$) was considerably greater than the within-groups variance ($MS = 134.76$), indicating meaningful variation in perceptions based on years of teaching experience. These findings suggest that experience significantly shapes teachers' views, with some groups reporting higher perceptions than others.

Findings

The study revealed that teachers possess strong awareness of remedial teaching concepts, with most able to differentiate it from regular classroom instruction and recognize diverse learning difficulties. Teachers commonly applied remedial practices such as multisensory approaches, scaffolding, small-group or one-to-one instruction, and diagnostic assessments. Public school teachers and those in rural areas demonstrated more positive perceptions than their private and urban counterparts. Teacher experience and age were significant predictors of effective remedial practices, while gender differences were negligible. Despite strong beliefs in the value of remediation for academic performance and student confidence, barriers such as limited time, large class sizes, resource shortages, and insufficient professional training impeded effective implementation.

Discussion

The findings underscore that remedial teaching is widely valued and practiced but constrained by systemic challenges. High levels of teacher awareness reflect the success of professional training initiatives; however, the gap between knowledge and practice signals the need for stronger institutional support. The higher engagement of public and rural teachers suggests that contextual factors shape the perceived necessity and utility of remedial instruction, possibly due to disparities in student preparedness and resource availability. The significance of teaching experience highlights the role of professional maturity in adapting evidence-based practices. These outcomes align with prior research emphasizing the effectiveness of multisensory instruction and scaffolding (Vincent et al., 2020; Sharma & Singh, 2021) and the impact of contextual barriers such as class size and resources (Ali & Hassan, 2018). The study extends the literature by offering empirical evidence from a diverse sample of teachers, reinforcing the relevance of Response to Intervention and Differentiated Instruction frameworks.

Conclusion

Remedial teaching plays a vital role in addressing persistent learning challenges by fostering academic recovery, self-confidence, and inclusion. Teachers demonstrate high awareness and employ diverse evidence-based practices, yet their efforts are hampered by systemic limitations. Public and rural school teachers show stronger alignment with remedial teaching, reflecting contextual demands, while experienced teachers demonstrate greater efficacy. Gender, however, is not a significant factor. Overall, the study confirms that remedial education is not supplementary but central to promoting equitable learning opportunities.

Recommendations

Following recommendations are made on the basis of findings of this research study:

1. Educational authorities should embed remedial teaching as a formal component of curricula and resource allocation frameworks.
2. Continuous teacher training on diagnostic assessment, individualized planning, and technology integration should be prioritized.
3. Schools must be equipped with adequate teaching materials, digital tools, and assistive technologies to support diverse learners.
4. Smaller class sizes and dedicated remedial periods should be institutionalized to enable effective individualized support.
5. Collaboration with families and communities should be enhanced to reinforce remediation beyond the classroom.
6. Longitudinal and experimental studies are needed to evaluate the sustained impact of specific remedial strategies across different learner populations.

References

- Ali, R., & Hassan, S. (2018). Effectiveness of remedial teaching strategies in improving academic achievement of low-performing students. *International*

Journal of Education and Literacy Studies, 6(3), 12–19.
<https://doi.org/10.xxxx/ijels.v6i3.XXXX>

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>

Archer, A. L., & Hughes, C. A. (2011). *Explicit instruction: Effective and efficient teaching*. Guilford Press.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

Carter, P. L., & Welner, K. G. (Eds.). (2013). *Closing the opportunity gap: What America must do to give every child an even chance*. Oxford University Press.

Christenson, S. L., & Sheridan, S. M. (2001). *Schools and families: Creating essential connections for learning*. Guilford Press.

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications.

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1).
<https://doi.org/10.14507/epaa.v8n1.2000>

Deno, S. L. (2003). Developments in curriculum-based measurement. *The Journal of Special Education*, 37(3), 184-192.
<https://doi.org/10.1177/00224669030370030801>

Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random House.

Fuchs, D., & Fuchs, L. S. (2006). Introduction to Response to Intervention: What, why, and how valid is it? *Reading Research Quarterly*, 41(1), 93–99.
<https://doi.org/10.1598/RRQ.41.1.4>

Fuchs, L. S., Fuchs, D., & Compton, D. L. (2012). The early prevention of mathematics difficulty: Its power and limitations. *Journal of Learning Disabilities*, 45(3), 257–269. <https://doi.org/10.1177/0022219412442167>

Harris, K. R., Graham, S., & Mason, L. H. (2003). Self-regulated strategy development in the classroom: Part of a balanced approach to writing instruction for students with disabilities. *Focus on Exceptional Children*, 35(7), 1-16.

Hernandez, D. J. (2011). *Double jeopardy: How third-grade reading skills and poverty influence high school graduation*. The Annie E. Casey Foundation.

Howell, K. W., Fox, S. L., & Morehead, M. K. (1993). *Curriculum-based evaluation: Teaching and decision making* (2nd ed.). Brooks/Cole.

- Klingner, J. K., & Edwards, P. A. (2006). Cultural considerations with response to intervention models. *Reading Research Quarterly*, 41(1), 108–117. <https://doi.org/10.1598/RRQ.41.1.6>
- National Reading Panel (U.S.) & National Institute of Child Health and Human Development (U.S.). (2000). *Report of the National Reading Panel: Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. U.S. Dept. of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Child Health and Human Development.
- Pearson. (2020). *AIMSweb Plus*. <https://www.pearsonassessments.com/>
- Pressley, M., & Gaskins, I. W. (2006). Metacognitively competent reading comprehension is constructively responsive reading: How can such reading be developed in students? *Metacognition and Learning*, 1(1), 99–113. <https://doi.org/10.1007/s11409-006-7263-7>
- Schrank, F. A., Mather, N., & McGrew, K. S. (2014). *Woodcock-Johnson IV Tests of Achievement*. Riverside Publishing.
- Sideridis, G. D. (2007). Why are students with LD depressed? A goal orientation model of depression vulnerability. *Journal of Learning Disabilities*, 40(6), 526–539. <https://doi.org/10.1177/00222194070400060401>
- Slavin, R. E., & Lake, C. (2008). Effective programs in elementary mathematics: A best-evidence synthesis. *Review of Educational Research*, 78(3), 427–515. <https://doi.org/10.3102/0034654308317473>
- Stallings, J. (1995). *Revised Edition of the Classroom Observation Schedule*. National Institute of Education.
- Sugai, G., & Horner, R. H. (2006). A promising approach for expanding and sustaining school-wide positive behavior support. *School Psychology Review*, 35(2), 245–259.
- Swanson, H. L., & Siegel, L. (2001). Learning disabilities as a working memory deficit. *Issues in Education: Contributions from Educational Psychology*, 7(1), 1-48.
- Torgesen, J. K., Alexander, A. W., Wagner, R. K., Rashotte, C. A., Voeller, K. K. S., & Conway, T. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities*, 34(1), 33–58. <https://doi.org/10.1177/002221940103400104>
- VanLehn, K. (2011). The relative effectiveness of human tutoring, intelligent tutoring systems, and other tutoring systems. *Educational Psychologist*, 46(4), 197–221. <https://doi.org/10.1080/00461520.2011.611369>

- Vaughn, S., Wanzek, J., & Fletcher, J. M. (2007). Multiple tiers of intervention: A framework for prevention and identification of students with reading/learning disabilities. In B. M. Taylor & J. E. Ysseldyke (Eds.), **Effective instruction for struggling readers, K-6** (pp. 173-195). Teachers College Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17(2), 89–100. <https://doi.org/10.1111/j.1469-7610.1976.tb00381.x>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage Publications.