Research in Management and Humanities

DWIJMH VOL. 5 NO. 2 (2026) ISSN: 2980-4817

Available online at www.dwijmh.org
Journal homepage: http://www.dwijmh.org
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College teachers' remediation strategies for academically challenged students: Challenges and practices

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A R T I C L E I N F O

Article history:
Received: March 20, 2026
Received in rev. form. April 27, 2026
Accepted: May 14, 2026
Published: June 10, 2026

Keywords: ***Remedial education, instructional strategies, cognitive load, academic support, qualitative research***

A B S T R A C T

This study examines the instructional strategies and challenges encountered by college instructors in implementing remedial instruction at Divine Word College of Vigan. Grounded in Cognitive Load Theory, Tinto's Student Integration Model, and Social Constructivism, the research looked to understand how remediation is operationalized in higher education and the factors that support or hinder its effectiveness. Using a qualitative research design, twelve (12) college instructors were selected through purposive sampling to ensure diverse perspectives in instructional and remedial processes. Data were analyzed thematically, integrating both frequency counts and narrative responses to produce a thorough depiction of existing practices.

Findings showed three primary remedial strategies: targeted student support, instructional scaffolding, and collaborative or technology-enhanced learning activities. Instructors highlighted one-on-one consultation, consistent formative feedback, and personalized guidance as core practices that address diverse student needs. Scaffolding methods-namely, breaking projects into smaller steps, using worked examples, and providing structured prompts-were applied to reduce cognitive overload and facilitate gradual mastery. Collaborative activities, peer tutoring, and technology tools further strengthened engagement and conceptual understanding.

Despite these efforts, teachers described significant obstacles that limit effective remediation. These include resource and material deficits, specifically the lack of proper learning materials and technical support; instructional capacity constraints related to heavy workloads, large class sizes, and limited professional development opportunities; and structural or student-related barriers, including inconsistent attendance, low motivation, and inadequate institutional support. The study concludes that while instructors employ evidence-based remediation strategies, sustained improvement requires stronger institutional support, systematic program development, and enhanced access to instructional resources.

JEL Classification: I21

Introduction

A college education is fundamental to an individual's career. In some classrooms, we may find a student who is suffering in silence, unable to understand the topic due to a lack of knowledge. Remedial strategies help students bounce back in their learning instead of dropping out or failing gateway courses.

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Understanding remedial strategies and techniques in remedial teaching is highly effective in supporting very weak students; however, it may widen the gap between privileged and disadvantaged students rather than reduce it. The implications of this are wide-ranging, including the need to revisit the implementation of remedial teaching (Papadogiannis et al., 2023; Valentine et al., 2017).

Building on this concern, the study, according to Annamalai et al. (2023), explores how the COVID-19 pandemic's learning experience has worsened students' situation. The affective domains of faculty online readiness may include optimism as a useful construct. The COVID-19 pandemic has accelerated anticipated trends in higher education, highlighted by digital technology, activity-based learning models, and lifelong learning. In addition, teachers face many challenges, including time constraints, large class sizes, limited resources, and the emotional toll of managing difficult students (Darling-Hammond et al., 2017; Gajewski & Mather, 2015).

Remedial teaching faces inherent difficulties, and its success hinges on two essential elements: the instructional strategies employed by educators and the persistent barriers hindering their implementation. Empirical research has consistently demonstrated that pedagogical approaches like formative assessment, scaffolding, individualized instruction, and peer mentoring yield significant improvements in student knowledge acquisition (Sweller et al., 2011; Papadogiannis et al., 2023). Nevertheless, these strategies do not operate in a vacuum; their efficacy is significantly curtailed by contextual factors such as class size, institutional support, and resource availability (Gajewski & Mather, 2015). Acknowledging these complexities, the present study adopts a phenomenological approach to systematically document teachers' lived experiences, thereby revealing valuable insights that extend beyond theoretical frameworks and stress the realities of classroom practice (Salam et al., 2023).

Recent educational research offers valuable insights into remedial instruction. Much of this work investigates the effectiveness of specific teaching strategies, such as individualized support, one-on-one instruction, and peer-assisted learning, which have been shown to improve student outcomes (Sweller et al., 2011; Papadogiannis et al., 2023). Other studies examine broader systemic factors, including institutional capacity, resource availability, and teacher workload, which significantly influence the success of remedial programs (Darling-Hammond et al., 2017; Gajewski & Mather, 2015). Furthermore, research conducted during the COVID-19 pandemic highlighted widening learning gaps among students and an increased reliance on flexible and technology-enhanced learning approaches (Salam et al., 2023). However, most of these studies primarily focus on student outcomes, instructional methods, and systemic challenges. They give limited attention to the lived experiences of teachers who implement remote instruction. There remains a need to better understand how teachers perceive and navigate the process of supporting academically challenged students. Specifically, there is a gap in the literature regarding how teachers experience the use of particular instructional strategies and how they manage the challenges encountered in real classroom settings. Therefore, this study aims to address this gap by exploring teachers' experiences, providing deeper insight into how remedial strategies are applied in practice and the difficulties teachers face in assisting struggling learners.

This study aims to examine teachers' experiences supporting students with learning difficulties. It as well seeks to identify the strategies, strategies, and challenges that influence the success of their efforts, along

with the pedagogical approaches they employ. The survey intends to gather empirical data that can help institutions develop support networks, refine instructional strategies, and cultivate a more effective and empathetic approach to learning in higher education.

Review of related literature

This literature review aims to provide a comprehensive understanding of the challenges and strategies college teachers face when introducing alternative activities for students with academic disabilities. The review is arranged thematically by the study's question.

Teachers' experiences and perspectives on remediation.

Howard Gardner's theory of multiple intelligences (MI) posits that human intellectual capacity is not a single entity but a multidimensional collection of abilities, including logical-mathematical, visual-spatial, interpersonal, intrapersonal, bodily-kinesthetic, musical, linguistic, and naturalistic aptitudes. This theory suggests that instruction and assessment that engage multiple intelligences lead to more fair opportunities for skill development (Gardner, 1983). Within a remedial mathematics context, MI suggests that remediation will be more effective when instructors diversify approaches and modalities so that learners with different strengths can access and internalize numerical concepts. For example, teachers who combine visual aids (graphs, charts), hands-on tasks, collaborative problem-solving, and digital tools can address both logical-mathematical and interpersonal or spatial abilities in students, increasing the chances of success for learners who struggle with strictly algorithmic instruction.

This theoretical framework aligns with observations in Ngororero District that teachers use digital numeracy tools and visual representations to promote critical thinking and collaboration. Recent empirical work supports that digital resources - when used authentically - expand the forms of numeracy students engage in and can be impactful in remediation. Sakurai and Goos (2023) argue that "authentic digital tools" (real-world apps, maps, spreadsheets, smartphone applications) change the kinds of numeracy available to pupils and offer affordances for modeling, visualization, and immediate feedback that support struggling pupils' conceptual development.

Teachers' experiences with modern technology applications show a mixed picture. Computing resources can provide various forms of support, but instructors' confidence, training, and prior experience greatly affect whether they use these tools and how effectively they work (Ertmer & Ottenbreit-Leftwich, 2010; Koehler & Mishra, 2009). A review of primary school teachers' experiences with digital technology integration found that self-efficacy, professional development, and clear instructional guidance are key factors shaping teachers' implementation decisions (Tondeur et al., 2017). When professional learning opportunities are limited, teachers often use technology primarily for presentations and drills rather than for differentiated support that fosters higher-order thinking (Cuban, 2001; Ertmer & Ottenbreit-Leftwich, 2010).

Contextual studies in Sub-Saharan Africa highlight the local significance of these broader findings. Research in Rwanda indicates that structured remedial programs, such as teacher-led sessions, after-school support, and the use of digital or interactive math tools, are linked to improvements in students'

math skills. This is particularly true when instruction is frequent, aligned with the learning level, and encourages participation (World Bank, 2020; USAID, 2018). These studies also reveal important conditions for success. These include small-group instruction, access to relevant learning materials and digital tools, and teacher training. Common obstacles include heavy teacher workload, limited access to devices, and inconsistent implementation of programs (UNESCO, 2021; Twaweza, 2018).

Taken together, Gardner's theory of multiple intelligences helps explain why multimodal remediation, which includes digital numeracy, collaborative learning, and life-skills-oriented tasks, can be effective. It allows teachers to connect with learners through various cognitive pathways (Gardner, 1983; Armstrong, 2009). Research shows that teachers are generally willing to use modern and mixed-method teaching approaches. However, successful implementation often relies on continued professional development, clear curriculum integration, and institutional support, including funding and resources (Ertmer & Ottenbreit-Leftwich, 2010; Tondeur et al., 2017; Darling-Hammond et al., 2017).

Challenges and strategies of instruction in remediation

Cognitive Load Theory (CLT) suggests that learning is limited by the finite capacity of working memory. When instruction places excessive, extraneous, or irrelevant cognitive demands on learners, they become overwhelmed, hindering comprehension, retention, and motivation (Sweller, 1988; Sweller et al., 2011). Research further indicates that poorly structured instruction and insufficient feedback increase cognitive load and reduce student persistence, particularly among struggling learners (Paas et al., 2003; Mayer, 2009).

Instructors' choices about instruction, such as how they sequence problems, present worked examples, cue learners' attention, and break down complex material, are crucial for effective intervention. Research based on Cognitive Load Theory shows that clear scaffolding techniques, including worked examples, signaling, and breaking tasks into smaller steps, reduce unnecessary cognitive load and help struggling learners acquire knowledge (Sweller, 1988; Sweller et al., 2011; Mayer, 2009). In contrast, remediation approaches that rely primarily on unguided practice without sufficient instructional support may overload working memory and make it harder to understand deeper concepts (Kirschner et al., 2006). These strategies, based on CLT, are also affected by teacher expertise. Teachers who have a strong understanding of cognitive load principles can design instruction that reduces unnecessary cognitive demands and focuses learners' attention on essential processes (Paas et al., 2003; Clark et al., 2012).

Beyond cognitive architecture, Dropout in remedial contexts is influenced by multiple factors, including academic, social, and institutional conditions. Tinto's Student Integration Model emphasizes that student persistence is strongly linked to academic and social integration within the institution (Tinto, 1993). Studies on student retention further highlight that lack of support, low engagement, and insufficient feedback contribute significantly to student attrition (Simpson, 2013).

Practical strategies that emerge across the literature include: (1) designing remediation around Cognitive Load Theory-informed scaffolds—such as worked examples, reduced element interactivity, and gradual fading of instructional support (Sweller et al., 2011; Clark et al., 2012); (2) increasing the dosage and frequency of remedial instruction through shorter, more frequent sessions (Kraft & Goldstein, 2020); (3)

using peer-assisted and small-group approaches to expand learning opportunities without overloading individual working memory (Fuchs et al., 2008); (4) providing teacher professional development focused on diagnostic assessment, feedback, and evidence-based instructional strategies (Darling-Hammond et al., 2017; Hattie, 2009); and (5) addressing non-academic barriers—such as scheduling constraints and financial or advisory support—that contribute to student dropout (Balfanz et al., 2007; Dynarski et al., 2008). Empirical evaluations show that these strategies can improve academic achievement and reduce dropout risk when implemented with fidelity; however, their effectiveness depends heavily on adequate resources, teacher training, and long-term program sustainability (Slavin et al., 2011; Kraft, 2020).

Effects of remediation on student academic success.

Tinto's student integration model emphasizes academic and social integration as critical determinants of college persistence. Over time, scholars have critiqued and expanded the model to account for institutional structure, classroom engagement, and technological possibilities for early detection and support (Tinto, 1993; Nicoletti, 2019). Tinto's methods, which incorporate predictive/computational analytics and target institutional practice (e.g., early-warning systems, structured remediation), can strengthen the model's capacity to predict and prevent dropout by operationalizing integration processes and reducing its ambiguity. This techno-pedagogical study of Tinto reframes retention as something that can be supported by timely, data-informed interventions targeted at students who show early signs of academic disengagement (Tinto,1993; Nicoletti, 2019).

Cognitive Load Theory (CLT) complements the integration view by explaining how remediation must be designed. When students are already struggling, remediation that adds poorly organized content or undue extraneous demands can overload working memory and exacerbate disengagement; conversely, CLT-informed scaffolds (worked examples, utilization, signaling, progressive fading) reduce extraneous load and make remediation more likely to produce long-lasting learning gains. Evidence that weak academic documentation and feedback increase cognitive strain supports this body of evidence: remediation must be both timely and carefully scaffolded to reduce cognitive constriction and support persistence. (Sweller, 1988; Sweller et al., 2011)

Empirical evidence supports three linked policy and practice effects. First, early identification and intervention are critical: studies of remediation—particularly in professional programs such as nursing—show that when at-risk students receive structured and individualized support early, they are more likely to reduce course failure and improve academic progression (McGann & Thompson, 2008; Pennington & Spurlock, 2010). Second, high-dosage, well-structured tutoring and remediation consistently demonstrate strong impacts on learning outcomes across contexts; a comprehensive meta-analysis of randomized and quasi-experimental studies reports positive and statistically significant effects of tutoring interventions on student achievement (Nickow et al., 2020).

Third, online and institutional supports (clear course design, active teacher presence, orientation, and technical assistance) are indispensable to prevent attrition in online or blended modalities — the online dropout literature highlights course quality, engagement, and support as central drivers. Together, these findings suggest retention strategies should incorporate early-warning systems (data), CLT-informed

remediation design (pedagogy), and system-level support (access, scheduling, counseling) to decrease dropout. (Tinto, 1993; Simpson, 2013).

Instructional strategies for remediation

Instructional strategies for remediation are grounded in social constructivist theory, which emphasizes that learning is an active and socially mediated process. Learners construct knowledge through interaction, collaboration, and shared experiences (Vygotsky, 1978). This perspective is further supported by research highlighting that meaningful learning occurs when students actively engage in problem-solving and dialogue (Bransford et al., 2000). From this viewpoint, remediation is most effective when students are not treated as passive recipients of disciplinary instruction but rather as active participants who construct and negotiate understanding through social interaction. This perspective is strongly supported by social constructivist theory, which emphasizes learning as a collaborative process shaped by dialogue and shared experiences (Vygotsky, 1978). Peer-based skill development aligns with this framework by promoting collaboration, perspective-sharing, and mutual support as essential mechanisms for deepening comprehension and enhancing cognitive development (Johnson & Johnson, 2009; Topping, 2005). When students explain concepts to peers, evaluate alternative problem-solving approaches, and articulate their own reasoning, they engage in higher-order thinking processes that significantly strengthen retention and promote long-term mastery (Chi et al., 1994; Webb, 2009). Such interactive learning environments also encourage metacognitive awareness and active engagement, which are critical for meaningful learning and academic success (Bransford et al., 2000).

This collaborative approach also supports the development of essential academic competencies—such as communication, metacognitive awareness, teamwork, and critical thinking—that extend beyond content-specific remediation. These competencies enable students to take ownership of their learning trajectory and actively contribute to others' learning, thereby transforming remediation from a deficit-focused intervention into an empowering, community-based learning experience (Johnson & Johnson, 2009; Slavin, 2014). Moreover, peer-assisted learning environments encourage reflective thinking and self-regulation, which are key components of metacognitive development and academic success (Zimmerman, 2002; Topping, 2005). Research in peer-assisted learning consistently demonstrates improvements in academic performance, motivation, confidence, and persistence across diverse educational settings, confirming the effectiveness of socially grounded interventions in addressing learning gaps (Rohrbeck et al., 2003; Ginsburg-Block et al., 2006). These findings highlight the value of collaborative learning structures not only in enhancing academic outcomes but also in fostering positive attitudes toward learning and sustained student engagement.

A practical example of this principle is the Centenary College Course Recovery (CCCR) model, which operationalizes social constructivist principles within a structured remediation framework (Gajewski & Mather, 2015). The CCCR model emphasizes group work, small class sizes, and meaningful faculty-student interaction to create an environment conducive to individualized academic recovery. By integrating application-based learning, real-world relevance, and flexible instructional practices, the model strengthens student engagement and fosters secure connections between course content and practical context. Faculty members are encouraged to act as facilitators who guide, mentor, and respond adaptively to student needs rather than simply delivering corrective lectures.

Furthermore, the CCCR model emphasizes treating students as valued partners in the learning process. This approach increases motivation by reinforcing learner agency and affirming students' contributions to classroom discourse (Deci & Ryan, 2000; Fredricks et al., 2004). Consequently, students in CCCR settings demonstrate higher rates of persistence, improved course performance, and greater confidence in mastering challenging academic material (Slavin, 2014; Tinto, 2012). The model exemplifies how collaborative, student-centered remediation—rooted in social constructivism—can provide a more inclusive, responsive, and effective pathway for academic recovery (Vygotsky, 1978; Johnson & Johnson, 2009).

Student-related factors affecting remediation

The Cognitive Load Theory (CLT) posits that learning is constrained by the limited processing capacity of working memory; when instruction imposes excessive intrinsic or extraneous cognitive load, students become overwhelmed, and their knowledge acquisition falters (Sweller, 1988; Sweller et al., 2011). Research further indicates that poorly learned content and inadequate feedback increase cognitive strain and reduce student persistence, findings consistent with CLT's central tenet: poorly designed remediation or the layering of poorly structured material on top of already-stressed students can worsen failure rather than improve it (Paas et al., 2003; Mayer, 2009). Recent scoping reviews and empirical studies emphasize practical scaffolding approaches grounded in CLT—such as worked examples, chunking of complex tasks, highlighting common errors, and progressive fading of support—that reduce extraneous load and increase the likelihood that struggling students will form lasting schemas (van Nooijen et al., 2024).

Dropout and remediation are therefore tied not only to student attributes (prior achievement, attendance) but also to task design and institutional support. Large meta-analyses and systematic reviews show that structured, high-dose tutoring and guided practice reliably improve learning outcomes and can mitigate the risk of dropout when paired with diagnostic assessment and individualized follow-up (Nickow, Oreopoulos, & Quan, 2020). Peer-help models and small-group tutoring offer additional low-cost scaffolding that increases practice opportunities while reducing individual working-memory bottlenecks—particularly effective when teachers (Hidayat et al., 2023) supervise peer tutors and sessions.

Furthermore, early-warning systems and proactive remedial programs that identify at-risk students and deliver timely, scaffolded support have been demonstrated to reduce dropout in both face-to-face and online settings (Bañeres et al., 2023; Nickow et al., 2020). These findings suggest that addressing dropout entails attention to instructional design (CLT-informed scaffolding), targeted student support (tutoring, advising), and institutional structures (early-warning systems, professional development, and resources).

Professional development and teachers' preparedness

Content-area teachers in alternative school settings encounter substantial obstacles, the most pressing of which is the limited availability of appropriate and leveled reading materials. This shortage disrupts lesson delivery, forcing instructors to spend valuable time finding or creating resources that adequately address their students' diverse reading levels, as Darling-Hammond et al. (2017) noted. Without

accessible materials aligned to subject-specific vocabulary and including scaffolding, remedial reading becomes fragmented, hindering teachers' ability to provide consistent and effective support to struggling readers.

Compounding this issue is the heavy workload placed on content-area teachers, which limits the time they can dedicate to individualized reading support. (Darling-Hammond et al., 2017 highlight that paperwork, administrative obligations, and large class sizes reduce instructors' capacity to plan targeted interventions or monitor student progress. Teachers emphasized that reducing these burdens, along with organizing students more uniformly by reading level, would allow them to provide remedial instruction more efficiently. Research consistently shows that reduced workloads and achievable expectations enhance teachers' ability to deliver explicit, targeted literacy support, which is key for students who require additional academic remediation.

Finally, Teachers face significant challenges in implementing remediation, including heavy workloads, limited instructional time, and insufficient professional development. Research shows that excessive administrative demands reduce teachers' capacity to provide individualized support and effective intervention (Darling-Hammond et al., 2017). Additionally, teachers' ability to integrate effective instructional strategies is influenced by access to training and institutional support (Tondeur et al., 2017).

Institutional policies and support systems

In the Philippines, therapeutic education is integrated into the curriculum to provide students who perform below passing grades with opportunities to engage in additional coursework, either online or in person. This supplementary instruction is designed to bridge learning gaps and support students in achieving the grade-level Most Essential Learning Competencies (MELCs) (Department of Education [DepEd], 2025). Like, DepEd Order No. 014, s. 2023 defines "Alternative Class" as a voluntary study program for learners who did not meet expectations in terms of attaining the required competency. Meanwhile, in higher education, government policy, such as Republic Act No. 10931, expands access through tuition-free education at state-funded universities and colleges and provides improved support systems for undergraduates' financial and academic needs, including remedial assistance when needed. The Commission on Higher Education (CHED) plays a pivotal role in establishing guidelines and standards that balance quality, accessibility, and student success across Filipino higher education institutions.

Remedial education has long served as a critical pathway for under-prepared students to transition into college-level coursework and the workforce. Historical analyses in the U.S. show that community colleges have provided developmental courses in mathematics, reading, and writing to support students lacking foundational skills (Valentine et al., 2017). The persistence of remediation underscores ongoing difficulties in preparing students for the rigors of higher education. A recent meta-analysis of regression-discontinuity studies suggests that placement in developmental education is associated with lower rates of credit accumulation and degree completion (Valentine, Konstantopoulos, & Rab, 2017), highlighting the need for reforms and more effective remedial strategies.

In the Philippines and elsewhere, the evolving nature of remedial-academic policies highlights the ongoing challenge of ensuring undergraduates are suitably prepared for higher academic demands. For example, a study in the Philippines found that remedial programs for Grade 10 Filipino students provided individualized support to bridge learning gaps, particularly in the wake of pandemic-related learning loss (Guban & Revilla, 2022). From a policy perspective, recent shifts from multilevel developmental sequences to corequisite models show promise but still raise questions about long-term degree attainment (Mokher, 2024). Collectively, these studies reflect that remedial education remains both needed and complex, and that the design, placement, and institutional context of remedial interventions critically shape their effectiveness.

Statement of the problem

This study explored the challenges faced and strategies employed by college teachers in remedial classes. Specifically, the study answered the following research questions.

1. What are the techniques and strategies employed by college teachers to remediate students who face academic challenges in their courses?

2. What are the challenges encountered by college teachers in the implementation of the remediation strategies to support academically challenged students?

Research methodology

This chapter presents the research design and data sources, including the study locale, population, and sampling; the data-gathering instrument; and data analysis, as well as the ethical standards.

Research design

This study used a qualitative research design, specifically phenomenology, to explore and describe the experiences of college teachers in helping students with academic challenges. Phenomenology was chosen because it focuses on understanding human experiences as they occur, aiming to capture their essence.

Locale of the study

The study was conducted at Divine Word College of Vigan, a private institution located in Vigan City, Ilocos Sur. This school was selected for its unique and holistic strategies for teaching college students.

Population and sampling

This study focused on college instructors from Divine Word College of Vigan. Participants were selected using purposive sampling to guarantee they possess direct and relevant experience with instructional processes. The sample will include twelve (12) college instructors representing various academic departments, allowing for a balanced perspective on the obstacles they encounter and the strategies they employ in their teaching practice. This composition is designed to encompass a diverse yet focused range of professional insights essential to understanding the phenomenon under investigation.

Data gathering instrument

The primary method of data collection was a comprehensive online questionnaire organized into two distinct sections. The questionnaire included open-ended questions concerning instructional leadership practices and the challenges encountered by those in leadership roles. The instrument was created using Google Forms to ensure accessibility and ease of response.

Data gathering procedure

Data was collected using online questionnaires created with Google Forms. Before participating, each individual was presented with an informed consent form to ensure they understood that their involvement was voluntary.

The questionnaire was distributed to college teachers via official communication channels, specifically personal email or Messenger group chats. Participants were given a specific timeframe, typically two weeks, to submit their responses. After the submission period ended, the researcher downloaded the collected data from Google Forms. Qualitative responses were prepared for thematic analysis.

Ethical considerations

The survey adhered strictly to ethical guidelines designed to protect the rights and privacy of all participants. Participation was completely voluntary, and participants maintained the right to withdraw at any time without consequence.

Informed consent was obtained electronically through the initial part of the online form, which explained the nature, scope, and purpose of the investigation. All responses will remain strictly confidential and anonymous; personal identifiers will not be included in the report of findings. Data will be stored securely in password-protected files and used solely for educational purposes. The investigator will respect the time, views, and professional obligations of all participants throughout the survey process.

Data presentation and analysis

Research Question 1: What are the techniques and strategies employed by college teachers to remediate students who deal with academic challenges?

From the analyzed responses, three major themes emerged. These compositions represent the varied strategies used by college teachers to support academically challenged students.

Table 1: Themes and categories of remedial strategies employed by college teachers

Themes	Categories	Frequency(n = 12)
Theme 1: Individualized academic support	Individualized support & counseling (one-to-one meetings, advising, referrals)	12

	Frequent formative assessment & feedback	10
	Flexible scheduling / extra office hours	5
	Referral to institutional support services (counseling, learning centers)	4
Theme 2: Instructional scaffolding and cognitive support	CLT-informed scaffolding (worked examples, chunking, signaling)	9
	Curriculum-aligned remedial sessions (MELC-aligned modules)	6
Theme 3: Collaborative and technology-enhanced learning	Peer-assisted learning / small-group tutoring	8
	Use of digital tools and visualizations (spreadsheets, graphs, interactive apps)	7

Source: The data were obtained through questionnaires

Theme 1: Individualized academic support

Individualized educational support was the main intervention strategy, mentioned by 12 respondents. This matches Tinto's Student Integration Model (1993), which highlights the importance of meaningful interactions between teachers and students for student persistence. Neubauer et al. (2019) also state that individualized engagement helps instructors understand student concerns, leading to more responsive support. Frequent formative assessment also aligns with Cognitive Load Theory. This theory states that timely feedback reduces confusion and helps students learn new information.

Research by Nickow, Oreopoulos, and Quan (2020) shows that structured, personalized academic support significantly improves achievement in remedial courses. Overall, these findings suggest that individualized support is a fundamental intervention approach for instructors.

Respondents shared how they used individualized support:
"I call the students one by one to discuss their concerns privately and guide them before referring them to advising if needed." (R2)

"Constant reminders and updated feedback help students stay aware of their performance and areas of improvement." (R4)

"I adjust my time to meet students individually—this helps them open up about what they do not understand." (R1)

Theme 2: Instructional scaffolding and cognitive support

Instructional scaffolding was a key theme among respondents, showing how it helps manage students' cognitive load during remediation. This fits Cognitive Load Theory, which states that structured guidance—such as worked examples, explanations, and breaking content into smaller parts—reduces unnecessary mental effort and improves understanding (Sweller, 1988; Sweller et al., 2011). This finding is consistent with Gajewski and Mather's (2015) work, which highlights applied learning as vital for course recovery. Additionally, Sakurai and Goos (2023) emphasize that real-world methods support clear understanding, showing that scaffolding with suitable materials significantly improves learning. The results indicate that instructors use scaffolding to simplify complex topics and create step-by-step learning paths for various skill levels.

Respondents emphasized using scaffolded learning:
"I break lessons into smaller steps so students can understand them better during remedial sessions." (R3)

"Providing worked examples helps students follow the process more confidently." (R1)

"Scaffolding allows me to guide them slowly without overwhelming them." (R5)

Theme 3: Collaborative and technology-enhanced learning

Respondents frequently mentioned teaching methods that involve group work and technology, such as peer learning and digital tools. These collaborative approaches align with social constructivist theory, which states that people build knowledge together through interaction (Vygotsky, 1978). Stringer et al. (2022) also confirmed that technology helps teachers adjust lessons for individual students and improves their teaching capabilities when used effectively. Sakurai and Ozawa (2023) showed that digital visuals help students understand numerical relationships and improve problem-solving skills. The responses indicate that instructors view collaborative methods and digital tools as useful additions to teaching.

Respondents shared examples of collaborative and technology-supported remediation:
"Group tasks help students learn from each other during remediation." (R6)

"Using spreadsheets and graphs helps them visualize difficult concepts." (R3)

"Interactive tools make remediation more engaging and less intimidating for learners." (R7)

***Research Question 2: What are the challenges encountered by college teachers in the execution of remediation strategies*?**

From the analyzed responses, three major themes emerged. These compositions represent the varied challenges faced by college teachers in supporting academically challenged students.

Table 2: Challenges encountered by college teachers in the implementation of remediation strategies

Themes	Categories	Frequency(n = 12)
Theme 1: Resource and material constraints	Limited availability of leveled / subject-specific reading & practice materials	10
	Technology/device access and internet instability	5
Theme 2: Instructional and professional capacity barriers	Heavy workload / administrative duties	9
	Large class sizes limit individualized contact	8
	Limited professional development (PD) on remediation and CLT	7
Theme 3: Structural and learner-related constraints	Student-level factors (irregular attendance, low motivation)	7
	Scheduling constraints / insufficient remedial contact time	6
	Lack of institutional, school-wide remedial program/guidelines	6

Source: The data were obtained through questionnaires

Theme 1: Resource and material constraints

A recent principal's report raised concerns about available resources and materials. Specifically, there was a lack of specialized teaching materials needed for effective student support. These findings show a clear connection between resources and the ability to provide enough student support.

Ten respondents reported trouble getting the right materials. This aligns with Darling-Hammond et al. (2017), who noted that poor access to resources hinders lesson delivery and limits teachers' ability to adjust instruction. Similarly, Stringer et al. (2022) found that technology-based assessment tools don't work well with unreliable or inconsistent internet access. Many respondents confirmed this, citing unstable device access and poor internet connectivity. Research indicates that these resource limitations prevent differentiated instruction and limit teachers' ability to achieve specific, curriculum-based learning goals (Masengesho, 2024).

Respondents shared difficulties related to material and resource limitations:
"We lack leveled reading materials, so we spend extra time creating our own." (R3)

"Internet interruptions make online remediation difficult to sustain." (R7)

"Sometimes students cannot participate because they don't have devices." (R5)

Theme 2: Instructional and professional capacity barriers

Instructional limitations are influenced by several factors beyond electrical capacity, including workload demands, class sizes, and insufficient professional development. Nine respondents identified administrative burdens as a major obstacle. This aligns with Darling-Hammond et al. (2017), who observed that excessive workload reduces teachers' ability to prepare and deliver effective therapeutic instruction. Large class sizes also limit personalized attention, supporting Tinto's (1993) emphasis on socio-emotional integration as vital for success.

Furthermore, innovative approaches like CLT-informed interventions and differentiated instruction can disrupt teachers' usual teaching routines. Sweller (1988) also noted that inadequate feedback systems and insufficient professional development contribute to cognitive overload and hinder treatment effectiveness.

Respondents emphasized barriers in workload and instructional preparedness:
"Too much paperwork limits the time I can give to struggling students." (R2)

"Large classes make individual follow-ups almost impossible.." (R1)

"We rarely receive training specific to remediation strategies." (R6)

Theme 3: Structural and learner-related constraints

The third paper examines the structural and student-related issues that hinder remediation efforts. More than half of respondents pointed to concerns like inconsistent attendance, specific student needs, and not enough time for remediation. These findings match Valentine et al.'s (2017) historical analysis of remediation, which shows that student readiness and how institutions run programs greatly influence outcomes. Similarly, Guban and Revilla (2022) found that remedial programs work less well when undergraduates have ongoing attendance problems or when institutions do not offer clear alternative options. Six respondents described the absence of a clear campus-wide policy. This aligns with the argument that basic standards are needed to support consistent and fair remedial programs (Commission on Higher Education, 2025).

Respondents described structural and student-related barriers:
"Some students don't attend remedial sessions regularly." (R4)

"There is not enough scheduled time for remediation, so progress is slow." (R8)

"We do not have a unified remedial program to follow." (R9)

Discussion

This study provides insights into the challenges college instructors face when helping students with academic difficulties and how they use remedial strategies. The findings showed that instructional scaffolding, collaborative or technology-enhanced learning, and individualized academic support are the main components of these strategies. These results support previous research emphasizing the importance of social interaction, structured guidance, and individualized instruction for improving student learning outcomes (Hattie, 2009; Nickow et al., 2020; Johnson & Johnson, 2009).

The emphasis on individualized academic support highlights the importance of teacher-student interaction in promoting academic persistence. This aligns with Tinto's Student Integration Model, which shows how meaningful interaction between students and teachers improves success and retention (Tinto, 1993). The common use of one-on-one consultations, feedback channels, and flexible support systems reflects a shift towards more student-centered remediation strategies. This confirms earlier research that tailored interventions significantly improve struggling students' academic achievement and motivation (Neubauer et al., 2019; Nickow et al., 2020).

Instructors commonly use instructional scaffolding, especially methods based on Cognitive Load Theory (CLT). Teachers apply techniques like chunking, worked examples, and guided instruction to reduce cognitive overload and promote gradual knowledge acquisition. This aligns with studies showing that structured teaching support improves understanding and keeps students engaged (Sweller, 1988; Sweller et al., 2011; Mayer, 2009). By breaking down difficult ideas into smaller parts, teachers help students gradually gain confidence and mastery (Clark et al., 2012; Paas et al., 2003).

Collaborative and technology-enhanced learning also reflects social constructivist ideas, which propose that knowledge is actively created through interaction and shared experiences. Studies show that peer-assisted learning and digital tools improve understanding and engagement (Vygotsky, 1978; Topping, 2005; Rohrbeck et al., 2003). Technology further supports differentiated instruction and conceptual visualization, making learning more accessible for students who struggle (Sakurai & Goos, 2023; Stringer et al., 2022).

The study also found significant obstacles to remediation, even when successful methods were used. The most common issues were limited materials and resources, particularly a lack of suitable teaching tools and unstable technology access. These findings match earlier studies showing that a lack of resources hinders teachers' ability to provide effective, varied instruction (Darling-Hammond et al., 2017; Masengesho, 2024; UNESCO, 2021). Well-planned remediation strategies may fail to produce intended outcomes without sufficient infrastructure and materials.

Instructional and professional limits further restrict teachers' ability to implement remediation. These include heavy workloads, large class sizes, and few opportunities for professional development. These issues show that institutions need to provide support, reduce administrative duties, and offer specialized

training for educators. Current research states that high-quality teaching requires teacher preparedness and reasonable workloads (Darling-Hammond et al., 2017; Darling-Hammond et al., 2017sh; Tondeur et al., 2017).

Student-related and structural issues also make it harder to address academic difficulties. These include low student motivation, inconsistent attendance, and short remediation periods. These factors show that remediation is a systemic issue, not just an instructional one, involving student behavior, institutional policies, and support systems. Studies have found similar results, emphasizing the role of academic integration, motivation, and institutional structures in student success and retention (Tinto, 1993; Guba & Revilla, 2022; Rahman & Groot, 2024).

Theoretical contribution

This study adds to current knowledge by combining three main theories—Cognitive Load Theory, Tinto's Student Integration Model, and social constructivism—within remedial education. It shows how these theories work in actual classrooms, providing evidence that effective remediation requires a balance of cognitive, social, and institutional factors. By focusing on teachers' experiences, the study moves theoretical discussions beyond abstract ideas and connects them to practical use (Sweller et al., 2011; Vygotsky, 1978; Tinto, 1993).

Policy contribution

The findings highlight the need for stronger institutional support to improve the effectiveness of remedial programs. Educational institutions should create structured remediation plans, provide enough teaching materials and technology, and offer ongoing teacher training. Also, policies that reduce teacher workload and improve class sizes can greatly improve individualized support. Clear guidelines and support will ensure remediation is consistent, sustainable, and meets students' varied needs (Commission on Higher Education, 2025; Department of Education, 2025; Darling-Hammond et al., 2017).

Conclusion

This study examined the teaching methods and challenges faced by college instructors providing remedial education at the Divine Word College of Vigan. Based on Cognitive Load Theory, Student Integration Theory, and social constructivism, the study aimed to understand how teachers plan and deliver remedial classes, the problems that limit their effectiveness, and the institutional support needed to improve student learning. By analyzing responses from twelve instructors chosen from different departments, the study presented a comprehensive view of remedial practices in higher education.

The study found that instructors mainly use individualized academic support, frequent formative assessment, and structured scaffolding. This supports existing research showing that personalized teaching and cognitive support are key for students to continue learning and improve. Instructors highlighted individual advising, private meetings, clarification sessions, and ongoing feedback as essential for addressing learning gaps. Equally important was using scaffolding strategies based on Cognitive Load Theory (CLT), such as worked examples, breaking down complex tasks, and signaling, to reduce mental strain and help students fully understand concepts. Group learning and technology-

assisted learning also proved useful, particularly when digital tools helped students visualize concepts and peer support improved understanding.

However, the study also identified substantial challenges that impede effective remediation. Resource limitations, particularly the scarcity of leveled instructional materials and inconsistent technology access, hinder teachers' ability to provide differentiated support. Instructional capacity constraints—including heavy workloads, large class sizes, and limited professional development on remediation—further restrict the degree of individual attention teachers can provide. Additionally, structural and learner-related issues such as inconsistent attendance, scheduling conflicts, and the absence of school-wide remedial guidelines collectively undermine the sustainability and consistency of intervention efforts. These challenges affirm existing research emphasizing that effective remediation requires not only pedagogical competence but also institutional coherence and adequate support structures.

Overall, the findings highlight that remediation at the college level is most effective when instruction is personalized, cognitively scaffolded, and supported by collaborative and technological resources, but its success depends heavily on the availability of materials, manageable teacher workloads, and institutional policies that standardize and strengthen remedial frameworks.

***Author's contribution**:* The author planned, carried out, and wrote the study.

***Ethical statement**:* The study followed ethical guidelines, and participants' privacy was protected.

***Funding statement**:* The author funded the study.

***Conflict of interest**:* The author has no conflict of interest to declare.

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