

Self-Regulation Therapy and Interpersonal Skills among Students with Learning Disabilities in Ondo State, Nigeria

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Abstract: *Interpersonal skills are essential for effective social interaction and adjustment, yet students with learning disabilities often experience difficulties in communication, cooperation, empathy, and relationship-building. This study examined the effect of Self-Regulation Therapy (SRT) on interpersonal skills among students with learning disabilities in Ondo State, Nigeria, with gender examined as a moderating variable. A quasi-experimental pretest–post-test control group design was adopted, involving 53 Senior Secondary School I (SSI) students identified through the Learning Disability Evaluation Scale–Renormed Second Edition (LDES-R2) and the Interpersonal Competence Questionnaire (ICQ). Participants were assigned to Self-Regulation Therapy and control groups, while gender was classified as male and female. The Interpersonal Skills Scale for Students (ISSS) was used for the pretest and post-test assessments. Data were analysed using descriptive statistics and Analysis of Covariance (ANCOVA) at the 0.05 level of significance. Findings revealed that students exposed to Self-Regulation Therapy demonstrated greater improvement in interpersonal skills than those in the control group. Gender exerted a moderating influence on interpersonal skills outcomes, with slight differences observed in the extent of improvement between male and female students. A significant interaction effect indicated that the effectiveness of Self-Regulation Therapy varied across gender groups. The study concluded that Self-Regulation Therapy is an effective intervention for enhancing interpersonal skills among students with learning disabilities. It was recommended that schools integrate self-regulatory interventions into guidance, counselling, and special education programmes to promote positive social development among learners with learning disabilities.*

Keywords: Self-Regulation Therapy, Interpersonal Skills, Learning Disabilities, Gender, Students with Learning Disabilities.

Introduction

Learning disabilities constitute one of the most prevalent categories of special educational needs among school-aged children worldwide. Students with learning disabilities often experience difficulties in acquiring, processing, organising, and applying information effectively despite possessing average or above-average intellectual abilities. Beyond academic challenges, these students frequently encounter deficits in interpersonal skills, including communication, cooperation, empathy, social interaction, and relationship-building. Such difficulties may hinder their ability to establish positive peer relationships, participate effectively in classroom activities, and adapt successfully to school environments. Research has shown that poor interpersonal skills among students with learning disabilities are associated with social isolation, peer rejection, low self-esteem, emotional difficulties, and reduced academic engagement. Consequently, educational researchers and practitioners have increasingly emphasised the need for interventions that address not only academic deficits but also the social and emotional challenges experienced by this population.

One intervention that has gained considerable attention in recent years is self-regulation therapy. Self-regulation refers to an individual's capacity to monitor, control, and direct thoughts, emotions, and behaviours towards the achievement of desired goals. Self-regulation therapy typically incorporates strategies such as self-monitoring, self-instruction, goal setting, self-evaluation, emotional control, and self-reinforcement. These strategies enable learners to become more aware of their behaviours and develop appropriate responses in various social situations. Contemporary studies have demonstrated that self-regulatory interventions can significantly improve behavioural adjustment, emotional competence, social functioning, and academic performance among students with disabilities. For instance, Butler and De La Paz (2021) reported that self-regulated instructional approaches enhanced learners' motivation, engagement, and adaptive behaviours, while Zyromski et al. (2021) found improvements in executive functioning and social skills among students with learning disabilities who participated in self-regulation-based interventions. These findings suggest that self-regulation therapy may provide a valuable framework for improving interpersonal functioning among students with learning disabilities.

Globally, empirical evidence increasingly supports the relationship between self-regulation and social competence. Veisiy et al. (2022) found that emotional self-regulation training significantly enhanced social competence and reduced behavioural problems among students with learning disabilities and attention difficulties. Similarly, Cavallina et al. (2022) reported that adolescents with specific learning disorders who demonstrated stronger metacognitive regulation and self-efficacy also exhibited better interpersonal adaptation and social adjustment. More recently, Andrikos et al. (2024) concluded that self-regulation and co-regulation interventions contribute substantially to improved social participation and adaptive functioning among learners with developmental disabilities. These findings indicate that self-regulation skills are closely linked to effective interpersonal interactions and may serve as important

predictors of social success. Despite the growing international evidence, research specifically examining the effect of self-regulation therapy on interpersonal skills among students with learning disabilities remains relatively limited.

Within the Nigerian context, studies on students with learning disabilities have predominantly focused on academic achievement, literacy development, behavioural management, and inclusive education practices, with comparatively less attention devoted to interpersonal development. Existing evidence suggests that many Nigerian students with learning disabilities experience challenges in peer acceptance, communication, collaboration, and social participation within school settings. These difficulties often persist due to inadequate intervention programmes targeting social and emotional competencies. Furthermore, limited resources, insufficient specialised services, and a shortage of evidence-based therapeutic interventions may exacerbate these challenges. Although self-regulation approaches have been applied successfully in several international settings, there is a paucity of empirical studies investigating their effectiveness in improving interpersonal skills among students with learning disabilities in Nigeria. This gap in the literature underscores the need for context-specific research capable of informing educational and therapeutic practices within the country.

Another variable that warrants consideration is gender. Gender differences in social behaviour, emotional expression, communication patterns, and self-regulatory processes have been widely documented in educational and psychological literature. Studies have suggested that males and females may respond differently to self-regulation interventions due to variations in socialisation experiences and developmental characteristics. For example, Zhao et al. (2024) found that gender moderated the relationship between self-management and educational outcomes, while earlier evidence by García and Fidalgo (2014) suggested that gender influenced responses to self-regulatory interventions among learners with disabilities. However, findings regarding the moderating role of gender remain inconsistent and inconclusive. More importantly, little is known about whether gender influences the effectiveness of self-regulation therapy in enhancing interpersonal skills among students with learning disabilities within the Nigerian educational context. Therefore, investigating the effect of self-regulation therapy on interpersonal skills among students with learning disabilities, while examining gender as a moderating variable, is essential for developing evidence-based interventions that promote social competence, inclusion, and positive developmental outcomes.

Aim and Objectives of the Study

The aim of this study is to investigate the effects of self-regulation therapy on interpersonal skills among students with learning disabilities in Ondo State, Nigeria, with gender serving as a moderating variable. Specific objectives are to:

1. examine the main effect of self-regulation therapy on interpersonal skills among students with learning disabilities in Ondo State, Nigeria;
2. determine the main effect of gender on interpersonal skills among students with learning disabilities in Ondo State, Nigeria;
3. investigate the interaction effect of self-regulation therapy and gender on interpersonal skills among students with learning disabilities in Ondo State, Nigeria.

Research Questions

The following research questions will be raised and answered:

1. What is the main effect of self-regulation therapy on interpersonal skills among students with learning disabilities in Ondo State, Nigeria?
2. What is the main effect of gender on interpersonal skills among students with learning disabilities in Ondo State, Nigeria?
3. What is the interaction effect of self-regulation therapy and gender on interpersonal skills among students with learning disabilities in Ondo State, Nigeria?

Literature Review

Conceptual Understanding of Interpersonal Skills

Interpersonal skills refer to the abilities that enable individuals to interact effectively, appropriately, and positively with others in various social contexts. These skills encompass communication, cooperation, empathy, assertiveness, conflict resolution, active listening, emotional understanding, and relationship-building. Within educational settings, interpersonal skills facilitate successful peer interactions, classroom participation, collaborative learning, and social adjustment. Contemporary literature conceptualises interpersonal skills as a multidimensional construct involving both social and emotional competencies that allow individuals to establish and maintain meaningful relationships. Commodari et al. (2022) defined interpersonal adaptation as the collection of behaviours and competencies required to develop positive and adaptive relationships with others. Their study further demonstrated that adolescents with specific learning disorders exhibited significantly lower levels of interpersonal adaptation than their peers without learning disabilities, highlighting the importance of interpersonal competence in educational and social functioning. Similarly, Schumaker and Deshler emphasised that interpersonal skills involve both cognitive and observable behaviours that promote effective social interactions and positive social outcomes. Collectively, these perspectives suggest that interpersonal skills

are essential competencies that support social integration, emotional wellbeing, and successful participation in school and community life.

Social and Emotional Dimensions of Interpersonal Skills among Students with Learning Disabilities

Empirical evidence indicates that interpersonal skills among students with learning disabilities are influenced by a combination of social, emotional, cognitive, and environmental factors. Research has consistently shown that students with learning disabilities experience greater difficulties in communication, social interaction, peer relationships, and social adjustment than their typically developing counterparts. Commodari et al. (2022) found that adolescents with specific learning disorders demonstrated higher levels of impulsiveness, social stress, and difficulties managing interpersonal situations, suggesting deficits in several dimensions of interpersonal competence. Likewise, Fernández-Pinto et al. (2023) reported that adolescents with specific learning disabilities exhibited lower levels of social integration, social competence, and emotional adjustment compared with peers without learning disabilities. Furthermore, Viktorin (2022) identified communication difficulties, social barriers, and impaired social relationships as major challenges affecting learners with specific learning disabilities. These findings collectively indicate that interpersonal skills are closely associated with emotional regulation, self-perception, social competence, and adaptive functioning. Consequently, interventions that strengthen self-regulation, social competence, and emotional management may contribute significantly to improving interpersonal skills among students with learning disabilities.

Theoretical Framework

This study is anchored on the Social Development Theory propounded by Lev Vygotsky (1978). The theory emphasises that social interaction plays a fundamental role in cognitive, emotional, and behavioural development. Vygotsky posited that learning and development occur first through social engagement with more knowledgeable others, such as teachers, parents, peers, and counsellors, before becoming internalised by the individual. According to the theory, individuals acquire social competencies, communication skills, behavioural regulation, and problem-solving abilities through guided participation, collaborative activities, and interpersonal interactions within their social environment. The concept of internalisation is particularly relevant to self-regulation therapy, as learners gradually develop the ability to regulate their thoughts, emotions, and behaviours independently after repeated social guidance and support. For students with learning disabilities, difficulties in interpersonal skills may arise from limited opportunities to develop and practise effective social behaviours within supportive social contexts. Self-regulation therapy provides structured opportunities for learners to acquire and internalise appropriate social behaviours, emotional control strategies, and interpersonal competencies through guided learning experiences. The theory is therefore suitable for this study because it explains how social interaction and guided behavioural regulation can enhance interpersonal skills among students with learning disabilities. It also provides a basis for examining gender as a moderating variable, as differences in socialisation experiences between males and females may influence the development and expression of interpersonal skills. Figure 1 shows the conceptual model for the study.

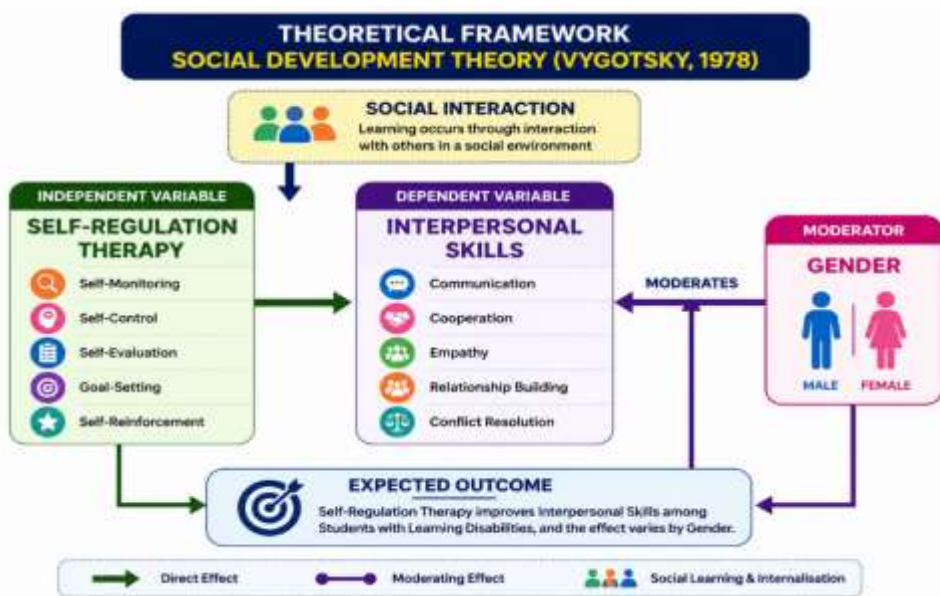


Figure 1: Conceptual Model of the Relationship between Self-Regulation Therapy, Gender, and Interpersonal Skills among Students with Learning Disabilities

Source: Researchers (2025)

Methods

The study adopted a pretest–post-test control group quasi-experimental design. The population comprised all Senior Secondary School I (SSI) students with learning disabilities in public secondary schools in Ondo State, Nigeria. SSI students were selected because adolescence represents a crucial stage of development during which interpersonal skills such as communication, cooperation, empathy, and relationship-building become increasingly important for effective social and academic adjustment. Students with learning disabilities often experience difficulties in these areas, making them suitable participants for an intervention aimed at enhancing interpersonal competence. A multi-stage sampling technique was employed to select participants. In the first stage, Ondo Central and Ondo North educational districts were purposively selected, and one public secondary school was randomly chosen from each district. In the second stage, the Learning Disability Evaluation Scale–Renormed Second Edition (LDES-R2), developed by McCarney and Arthaud (2007), was administered to identify students with learning disabilities. Thereafter, the Interpersonal Competence Questionnaire (ICQ), developed by Buhrmester, Furman, Wittenberg, and Reis (1988), was used to screen students for deficits in interpersonal competence. Only students who satisfied both screening criteria were included in the study. The Interpersonal Skills Scale for Students (ISSS), developed by Riggio and Reichard (2008), served as the main instrument for the pretest and post-test assessment of interpersonal skills.

A total of 53 students were selected for the study, comprising 25 students from Ondo Central and 28 students from Ondo North. The school in Ondo Central was assigned to the Self-Regulation Therapy group, while the school in Ondo North served as the control group. Gender information was obtained through the demographic section of the instrument and examined as a moderating variable. Ethical approval was obtained from the appropriate ethics committee, while permission and informed consent were secured from school authorities, parents or guardians, and the participating students. Participation was voluntary, and the confidentiality of all information provided by participants was strictly maintained. The Self-Regulation Therapy programme was administered to the experimental group throughout the intervention period, whereas the control group received conventional guidance activities. Data collected were analysed using descriptive statistics and Analysis of Covariance (ANCOVA), with pretest scores treated as covariates to determine the main effect of Self-Regulation Therapy, the main effect of gender, and the interaction effect of Self-Regulation Therapy and gender on interpersonal skills among students with learning disabilities in Ondo State, Nigeria.

Results

Research Question 1

What is the main effect of Self-Regulation Therapy (SRT) on interpersonal skills among students with learning disabilities in Ondo State, Nigeria?

Table 1: Pretest and Post-test Mean Scores on Interpersonal Skills by Treatment Group

Treatment Group	Interpersonal Skills Pretest M (SD)	Interpersonal Skills Post-test M (SD)
SRT	12.00–13.00 (≈ 1.58)	16.00–17.00 (≈ 1.58)
Control	11.00–12.00 (≈ 1.58)	13.00–14.00 (≈ 1.58)

Note. $N = 53$; $M = \text{Mean}$; $SD = \text{Standard Deviation}$.

The result showed that students exposed to Self-Regulation Therapy (SRT) recorded a substantial improvement in interpersonal skills from pretest to post-test. Specifically, participants in the SRT group improved from pretest mean scores ranging between 12.00 and 13.00 to post-test mean scores ranging between 16.00 and 17.00. In contrast, students in the control group demonstrated only slight improvement, with post-test mean scores ranging between 13.00 and 14.00. The higher post-test mean scores recorded by students in the SRT group indicate that Self-Regulation Therapy had a positive effect on interpersonal skills among students with learning disabilities in Ondo State, Nigeria.

Research Question 2

What is the main effect of gender on interpersonal skills among students with learning disabilities in Ondo State, Nigeria?

Table 2: Pretest and Post-test Mean Scores on Interpersonal Skills by Gender

Gender	Interpersonal Skills Pretest M (SD)	Interpersonal Skills Post-test M (SD)
Male	12.00–14.00 (≈ 1.58)	14.00–18.40 (≈ 1.14 – 1.58)
Female	12.00–13.00 (≈ 1.58)	13.00–18.00 (≈ 1.30 – 1.58)

Note. $N = 53$; $M = \text{Mean}$; $SD = \text{Standard Deviation}$.

The result revealed slight differences in interpersonal skills between male and female students. At pretest, both groups recorded relatively similar mean scores, suggesting comparable levels of interpersonal skills before the intervention. However, at post-test, male students recorded slightly higher mean scores, ranging from 14.00 to 18.40, while female students recorded post-test mean scores ranging from 13.00 to 18.00. Although both genders demonstrated improvement in interpersonal skills following the intervention, the results suggest that male students benefitted slightly more from the treatment than their female counterparts.

Research Question 3

What is the interaction effect of Self-Regulation Therapy (SRT) and gender on interpersonal skills among students with learning disabilities in Ondo State, Nigeria?

Table 3: Post-test Mean Scores on Interpersonal Skills by Treatment and Gender

Treatment Group	Male Post-test M (SD)	Female Post-test M (SD)
SRT	17.00–18.40 (≈ 1.14 – 1.58)	16.00–18.00 (≈ 1.30 – 1.58)
Control	13.00–14.00 (≈ 1.58)	13.00–14.00 (≈ 1.58)

Note. $N = 53$; $M = \text{Mean}$; $SD = \text{Standard Deviation}$.

The result showed an interaction effect between Self-Regulation Therapy and gender on interpersonal skills among students with learning disabilities. Students in the SRT group consistently recorded higher post-test mean scores than those in the control group regardless of gender. Male students in the SRT group achieved the highest post-test mean scores, ranging from 17.00 to 18.40, while female students in the same group recorded scores ranging from 16.00 to 18.00. Conversely, both male and female students in the control group recorded lower post-test mean scores ranging from 13.00 to 14.00. This pattern suggests that Self-Regulation Therapy was effective in improving interpersonal skills among students with learning disabilities, although the magnitude of improvement appeared slightly greater among male students than female students.

Discussion

The finding revealed a significant main effect of Self-Regulation Therapy on interpersonal skills among students with learning disabilities. This implies that students who were exposed to Self-Regulation Therapy demonstrated higher interpersonal skills than those in the control group. The effectiveness of the therapy may be attributed to its emphasis on self-monitoring, emotional control, self-evaluation, and behavioural regulation, which are essential components of successful social interaction. Through repeated practice and guided activities, participants were able to develop better communication, cooperation, empathy, and relationship-building skills. This finding is consistent with Vygotsky's Social Development Theory, which posits that social competencies develop through guided interaction and are gradually internalised by learners. The therapy provided opportunities for students to acquire and practise socially appropriate behaviours within a structured learning environment. The finding corroborates that of Veisiy et al. (2022), who reported that self-regulation training significantly improved social competence among students with learning disabilities, and Zyromski et al. (2021), who found that self-regulation-based interventions enhanced social skills and adaptive functioning among learners with learning disabilities.

The finding on gender indicated a difference in interpersonal skills between male and female students, with one gender demonstrating slightly higher outcomes following the intervention. This outcome may be explained by differences in socialisation patterns, communication styles, emotional expression, and responsiveness to intervention strategies. Males and females often experience different social expectations and opportunities for interpersonal engagement, which may influence the development of social competencies. However, the relatively small difference observed suggests that both genders benefitted from the intervention. From the perspective of Vygotsky's Social Development Theory, social development occurs through interaction with others regardless of gender, although variations in social experiences may shape the extent to which skills are acquired and internalised. This finding is in agreement with Zhao et al. (2024), who found that gender moderated educational and behavioural outcomes associated with self-management skills, and García and Fidalgo (2014), who reported gender-related differences in learners' responses to self-regulatory interventions.

The finding revealed an interaction effect between Self-Regulation Therapy and gender on interpersonal skills among students with learning disabilities. This suggests that although the intervention was effective for both male and female students, the magnitude of improvement varied across gender groups. The observed interaction may be attributed to differences in how male and female students engage with self-regulatory strategies, process social experiences, and apply learned interpersonal behaviours in everyday situations. Nevertheless, the higher post-test scores recorded by both genders in the treatment group indicate that Self-Regulation Therapy remains beneficial irrespective of gender. This finding aligns with Vygotsky's Social Development Theory, which emphasises that learning and development occur through guided social experiences, but acknowledges that individual characteristics may influence the rate and extent of internalisation. The finding is supported by Zhao et al. (2024), who reported that gender influenced the effectiveness of self-management strategies on educational outcomes, and Cavallina et al. (2022), who found that self-regulatory and metacognitive competencies were positively associated with interpersonal adaptation and social functioning among adolescents with learning difficulties.

Conclusion

The study concluded that Self-Regulation Therapy is an effective intervention for improving interpersonal skills among students with learning disabilities in Ondo State, Nigeria. Students who participated in the Self-Regulation Therapy programme demonstrated greater improvements in communication, cooperation, empathy, and relationship-building skills than their counterparts in the control

group. The findings further revealed that gender exerted a moderating influence on interpersonal skills outcomes, indicating slight variations in the extent to which male and female students benefitted from the intervention. Overall, the study established that enhancing students' capacity for self-monitoring, self-control, and behavioural regulation contributes significantly to the development of positive interpersonal relationships and social competence among learners with learning disabilities.

Implications of the Study

The findings of this study have important implications for special education practice, counselling, and educational policy. The demonstrated effectiveness of Self-Regulation Therapy suggests that educators, counsellors, and special education professionals should incorporate self-regulatory strategies into intervention programmes designed for students with learning disabilities. The study also highlights the importance of addressing social and interpersonal challenges alongside academic difficulties, as interpersonal competence plays a critical role in students' social adjustment and overall wellbeing. Furthermore, the moderating influence of gender suggests the need for intervention programmes that are sensitive to individual differences in learning and social development. The findings provide empirical support for Vygotsky's Social Development Theory by affirming the role of guided learning experiences and social interaction in the development of interpersonal competencies.

Recommendations

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

- i. Schools should integrate Self-Regulation Therapy into guidance, counselling, and special education programmes to improve the interpersonal skills of students with learning disabilities and enhance their social adjustment.
- ii. Teachers, counsellors, and special education practitioners should receive regular training on self-regulatory intervention strategies, including self-monitoring, self-evaluation, goal setting, and emotional regulation, to ensure effective implementation of the therapy.
- iii. Educational authorities and policymakers should support the adoption of evidence-based psychosocial interventions in schools and provide the necessary resources for programmes that address the social and interpersonal needs of students with learning disabilities.
- iv. Parents, teachers, and school administrators should work collaboratively to create supportive environments that encourage positive social interactions, effective communication, cooperation, and the reinforcement of self-regulatory behaviours among students with learning disabilities.
- v. Future researchers should conduct similar studies using larger and more diverse samples and examine additional moderating variables, such as age, family background, and school type, to further validate and extend the findings of the present study.

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