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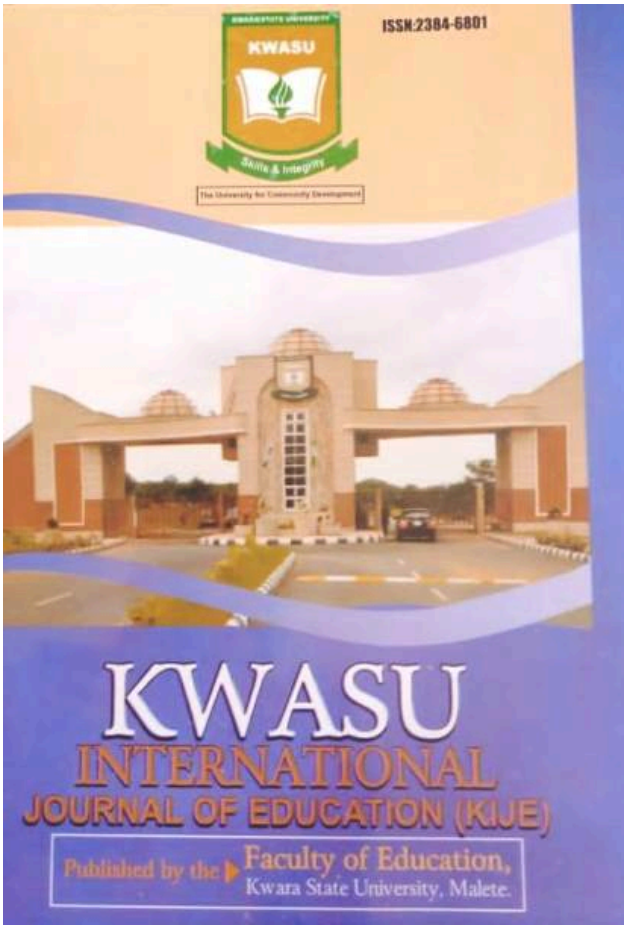
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COLLABORATIVE TEACHING AND SELF-REGULATION AS DETERMINANTS OF LITERACY SKILLS ACQUISITION OF PUPILS WITH MILD-TO-MODERATE INTELLECTUAL DISABILITY IN KWARA STATE, NIGERIA

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Abstract

Pupils with mild-to-moderate intellectual disability often struggle with literacy skills due to challenges like limited working memory and attention span, which are crucial for daily life. However, when these pupils acquire reading and writing skills, they gain the ability to communicate independently, expressing their needs and wants effectively. This study investigated collaborative teaching and self-regulation as determinants of literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State, Nigeria. Five purposes, three research questions and three hypotheses were formulated. The research design for the study was a descriptive design of correlational type, while the population of this study consisted of 34 teachers teaching pupils with mild-to-moderate intellectual disability, with a sample size of 34 individuals selected from three special schools in Kwara State. A census sampling technique was used to select all the participants from each school. Three instruments were used to collect data from teachers tagged "Collaborative Teaching Questionnaire" (CTQ), "Teacher Self-Regulation Questionnaire" (TSRQ) and "Literacy Skills Acquisition Questionnaire" (LSAQ). The face and content validity of the instruments were ascertained by the researcher's readers, experts in the field of Special Education. The reliability of the instruments was ascertained through test-retest on the respondents outside the sampled population; afterwards, the results were correlated yield the results at 0.80, 0.79 and 0.80 respectively using Pearson Product-Moment Correlation (PPMC). Research questions were analysed using mean and standard deviation. Hypotheses one and two were tested using Regression, and hypothesis three was tested using an independent sample t-test at a 0.05 level of significance. The findings revealed that the extent of collaborative teaching of pupils with mild-to-moderate intellectual disability in Kwara State is high (Mean= 3.40). The extent of teacher self-regulation in teaching pupils with mild-to-moderate intellectual disability in Kwara State is high (Mean= 3.40). The level of literacy skills acquisition among pupils with mild-to-moderate intellectual disability in Kwara State is high (Mean= 3.40). Collaborative teaching significantly determined literacy skills acquisition of pupils with mild-to-moderate intellectual disability (β= 0.548; t_{32} =3.706; P= 0.001). Teachers' self-regulation significantly determined literacy skills acquisition of pupils with mild-to-moderate intellectual disability (β=0.313; t_{32}=1.866; P = 0.071). There was no significant difference in literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State based on gender (t_{32}=2.211; P=0.373). It was concluded that collaborative teaching and self-regulation determined literacy skills acquisition among pupils with mild-to-moderate intellectual disability in Kwara State. Therefore, the study recommended that the curriculum planners should effectively develop collaborative teaching method; design and implement collaborative teaching models that pair special education teachers with general education teachers and school administrators should ensure that both male and female pupils with mild-to-moderate intellectual disabilities have equal access to literacy instruction and support.

INTRODUCTION

Pupils with mild-to-moderate intellectual disability often face challenges when acquiring literacy skills, such as limited working memory, limited attention span, limited vocabulary, slow processing speed, difficulty with abstract concepts, difficulty with sequencing, decoding difficulties, comprehension challenges, and writing difficulties, which are very essential in our day-to-day activities. Once pupils with mild-to-moderate intellectual disability can read and write, they can independently communicate any desired message. By understanding these challenges and implementing strategies to support literacy acquisition, educators can help pupils with mild-to-moderate intellectual disability develop essential literacy skills.

According to National Center on Improving Literacy (2025), says that literacy skills acquisition is the process by which individuals develop the ability to read, write, and communicate effectively using written language. Literacy skills have a powerful impact on communication and language development, improvement of cognitive development, and advancement of learning for individuals with mild-to-moderate intellectual disability. In order to meet the literacy skills acquisition of pupils with mild-to-moderate intellectual disability, collaborative teaching and self-regulation strategies can be used to promote their literacy skills acquisition.

Literacy skills acquisition among pupils with mild-to-moderate intellectual disability involves learning how language is encoded in a written system and learning the orthographic rules that relate graphic units to linguistic units. In learning to read, the child must learn to decode language forms from written forms. Some strategies that can help pupils with intellectual disability acquire literacy skills include the use of teaching methods, that is, the use of a variety of aids, such as diagrams, lists, and flow charts. Visual instructions include the use of visual instructions, gestures, and prompts (consider using least-to-most prompts), Record lectures (record lectures so pupils can listen to the material more than once), one-to-one tutoring (consider one-to-one tutoring, including peer tutoring), oral feedback (provide oral feedback on written assignments), orientation (provide an individual orientation to computers or laboratory equipment), shared reading (use shared reading activities to develop language and vocabular). Some essential components of reading instruction include, sound blending (combining sounds in spoken language to form words), letter sound correspondence (linking letters to the corresponding sounds), Phoneme segmentation (dividing a word into sounds and pronouncing each sound clearly), single-word decoding (recognizing letters in words and associating them with the correct sounds) (National Center on Improving Literacy, 2025).

The collaborative teaching method is designed to assist the slow learners, such as pupils with mild-to-moderate intellectual disability, to cope in the general classroom settings. This will help them acquire certain knowledge and also enable them to integrate literacy skills strategies in content-area classrooms. Collaborative teaching has mainly been researched from two perspectives, that is, collaborative teaching for inclusive education and collaborative teaching as teacher learning (Rytivaara et al., 2019).

Collaborative teaching is a specific approach to classroom instruction. In it, two teachers work with a single class of pupils at the same time. There are many models of team teaching, including station teaching and parallel teaching, and, when used effectively, each can meet the needs of different groups of learners. Vital components to successful team teaching are two teachers, working as equals and planning instruction both before and during the class. These methods should be supported by the school with feedback and professional development. With these components, collaborative teaching is an effective way to meet the diverse needs of pupils in a classroom (Brett et al., 2023).

Self-regulation is conceived as an active, constructive process that consists of thoughts, feelings, and actions that are planned and proactively and reactively adapted for the attainment of personal goals. The Self-regulatory process includes feedback loops that integrate triadic areas of regulation (personal, behavioural, and environmental). Personal self-regulation involves monitoring and adjusting cognitive and affective states, while behavioural self-regulation involves self-observation and strategic adjustment of performance processes, and environmental self-regulation involves observation and adjustment of environmental conditions or outcomes (Panadero, 2017).

Self-regulated learning involves metacognitive, motivational, and behavioural processes that are personally initiated to acquire knowledge and skill, such as goal setting, planning, learning strategies, self-reinforcement, self-recording, and self-instruction. A self-regulated learning perspective shifts the focus of educational analyses from pupils ' learning abilities and instructional environments as fixed entities to pupils' self-initiated processes for improving their methods and environments for learning. This approach views learning as an activity that pupils do for themselves in a proactive way, rather than as a covert event that happens to them reactively as a result of teaching experiences. Pupils can self-regulate their learning not only through covert cognitive means but also through overt behavioural means, such as selecting, modifying, or constructing advantageous personal environments or seeking social support. A learner's sense of self is not limited to individualised forms of learning but includes self-coordinated collective forms of learning in which personal outcomes are achieved through the actions of others, such as family members, teammates, or friends, or through the use of physical environment resources, such as tools. Thus, covert self-regulatory processes are viewed as reciprocally interdependent with behavioural, social, and environmental self-regulatory processes (Zimmerman 2000).

Self-regulation is the ability to understand and manage your behaviour and reactions. Self-regulation helps children and teenagers learn, behave well, get along with others, and become independent. Self-regulation begins to develop rapidly in the toddler and preschooler years. It can also be expected to help teachers in their professional development. Teachers have to constantly deploy many strategies to achieve teaching and learning goals. Teacher self-regulation refers to the teacher's self-regulated strategies executed in the teaching and learning environment in order to achieve the set pedagogical aims and objectives. Moreover, teacher self-regulation can be seen as an active process where teachers direct and maintain their metacognition, motivation, and strategies for effective instruction. This definition is consistent with Zimmerman's theoretical model of self-regulation of three cyclical moments corresponding to disposition, performance, and self-reflection. That is, for each teaching session, the teacher plans his class, executes the teaching–learning process, and concludes with an evaluation of his teaching (Ali & Yasmeen, 2019).

Teacher self-regulation determines the effectiveness of their teaching based on comparison to their previous performances, pupils' feedback, and whether or not the goals set at the beginning of the class were achieved. As a result of these evaluation processes, they develop behavioural, cognitive, and affective responses that will motivate future action, planning, and execution processes cyclically. The literature describes that effective teachers are those who achieve self-regulation processes of their teaching, which can stimulate their beliefs to select appropriate actions that lead to the successful execution of their tasks and professional performance (Ali et al., 2019).

Although many studies have been conducted to investigate the literacy skills acquisition based on gender, the results have been inconsistent. Males outperformed females when the effect of gender on foreign language learning strategies (Tercanlioglu, 2004). According to Al-Shumaimeri (2005), "schematic knowledge" is one of the factors that causes differences in literacy skills acquisition between males and females, because the type of texts that cause the correct activation of schematic knowledge are better understood and comprehended by female readers. Other research that examined the effect of gender on literacy skills acquisition discovered that there were significant differences in literacy skills between male and female pupils (Chiu et al., 2006; and Fahim et al., 2012). Females outperformed males in reading comprehension in general, according to the authors of these studies. (Fahim et al. 2012 and Sotoudehnama et al., 2011), however, they found no statistical differences in reading performance between male and female pupils.

Some findings revealed that females used significantly more metacognitive strategies than males. Osaige (2014) stated that gender-related challenges can pose additional hurdles for pupils with mild-to-moderate intellectual disability in the learning environment. For instance, teachers' expectations around traditional gender roles may limit the opportunities for both boys and girls in acquiring literacy skills. From the foregoing, this study investigated collaborative teaching and self-regulation as determinants of literacy skills acquisition among pupils with mild-to-moderate intellectual disability. The study also discussed the relevance,

the needs, models and benefits for pupils with mild-to-moderate intellectual disability and highlighted the effectiveness of collaborative teaching and self-regulation for the classroom teachers.

Statement of the Problem

Literacy skills acquisition is a fundamental right for all individuals, including those with intellectual disability. However, pupils with mild-to-moderate intellectual disability often face significant challenges in acquiring literacy skills due to cognitive, social, and emotional difficulties. Despite the importance of literacy skills, researcher indicate that pupils with mild-to-moderate intellectual disability in Kwara State continue to experience difficulties in acquiring these skills. The current teaching methods and strategies may not adequately address the needs of these pupils, which could lead to poor literacy skills outcomes, difficulty understanding new information, difficulties with communication and social skills, slow cognitive processing time, difficulty in the sequential processing of information, difficulties comprehending abstract concepts, limited access to education and social opportunities, increased dependence on others for daily living, reduced self-esteem and confidence.

The reasons adduced to the lack of literacy skills acquisition among pupils with mild-to-moderate intellectual disability may be due to inadequate teacher training on collaborative teaching and self-regulation strategies, Limited resources and support for pupils with intellectual disability, ineffective assessment and monitoring of literacy skills progress and Insufficient parental involvement and support. It is essential to recognise and address these characteristics to promote literacy skills acquisition among pupils with mild-to-moderate intellectual disability in Kwara State. The present researcher, highlighting the importance of collaborative teaching and self-regulation in enhancing literacy skills, noted that there is a scarcity of studies on collaborative teaching and self-regulation as determinants of literacy skills acquisition among pupils with mild-to-moderate intellectual disability in Kwara State. This was the gap left behind by previous researchers, which this study filled by investigating collaborative teaching and self-regulation as determinants of literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State.

Research Questions

The following research questions guided the study.

1. To what extent is collaborative teaching used for teaching pupils with mild-to-moderate intellectual disability in Kwara State?
2. What is the extent of teacher self-regulation in teaching pupils with mild-to-moderate intellectual disability in Kwara State?
3. What is the level of literacy skills acquisition among pupils with mild-to-moderate intellectual disability in Kwara State?

Hypotheses

The following research hypotheses were formulated for this study and tested at the 0.05 level of significance.

$H_0$1: Collaborative teaching does not significantly determine literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State.

$H_0$2: Self-regulation does not significantly determine literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State.

$H_0$3: There is no significant difference in literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State based on gender.

Methodology

The research design used for this study is descriptive research of the correlation type.

The sample for this study consists of teachers teaching pupils with mild-to-moderate intellectual disability from three special schools in Kwara State, namely: Kwara State School for Special Needs, Oyun, Ilorin-south Local

Government, Oju Oluwa Tomo Re Special School, Tanke, Ilorin-West Local Government and Iyeru-Okin Special School, Offa, Offa Local Government. Similarly, the Census sampling technique was used to select all 34 respondents.

Three instruments were used for this study titled "Collaborative Teaching Questionnaire'' (CTQ), "Teacher Self-Regulation Questionnaire'' (TSRQ) and "Literacy Skills Acquisition Questionnaire'' (LSAQ) designed by the researcher, the instruments were used to collect data from teacher teaching pupils with mild-to-moderate regarding to Collaborative Teaching and Self-Regulation as determinates of Literacy Skills Acquisition among pupils with mild-to-moderate intellectual disability in their classroom. The questionnaire items were designed based on an extensive review of related literature. The instruments consist of two sections, section A focused on teachers' demographic information (gender), and section B consists of ten (10) items, each used to elicit information from the teachers teaching pupils with mild-to-moderate intellectual disability. The instruments were structured on a four-point Likert scale, namely: Very High (VH), High (H), Low (L) and Very Low (VL). Thereafter, internal consistency of the instruments was assessed using the Pearson Product-Moment Correlation (PPMC) a coefficient of 0.80 was obtained, which indicated acceptable reliability of the instruments. The method of collecting data is questionnaire.

RESULTS

This chapter is concerned with data analysis and the results of the study. Demographic profile of the respondents was presented using frequency count and simple percentage. The research questions were tested using mean and standard deviation, while the formulated hypotheses were tested using regression and independent samples t-test at a 0.05 level of significance.

Analysis of the Demographic

Table 1: Distribution of respondents based on gender.

Gender	Frequency	Percentage
Male	16	47
Female	18	53
Total	**34**	**100.0**

Table 1 shows the distribution of respondents based on gender; 16 of the respondents, representing 47% were male, while 18 of the respondents were female, representing 53%. From the analysis, it is apparent that female respondents were more in number than male respondents.

Analyses of the Data to Answer the Research Questions

Research Question 1: To what extent is collaborative teaching used in teaching pupils with mild-to-moderate intellectual disability in Kwara State?

Table 2: Showing the extent of collaborative teaching used for teaching pupils with mild-to-moderate intellectual disability in Kwara State

S/N	ITEMS	MEAN	STD	REMARK
1	I regularly co-plan lessons with my colleagues.	3.5	0.56	Very High Extent
2	I communicate with my colleagues about student progress and needs.	3.4	0.65	Very High Extent
3	I participate in joint professional development activities with my colleagues.	3.7	0.45	Very High Extent
4	I share resources and materials with my colleagues.	3.4	0.55	Very High Extent
5	My colleagues and I communicate effectively about student needs.	3.3	0.98	Very High Extent
6	I work together as a team to solve problems and address challenges.	3.2	0.93	High Extent
7	I feel comfortable seeking feedback from my colleagues.	3.4	0.78	Very High Extent
8	I feel comfortable asking for help or support from my colleagues.	3.4	0.98	Very High Extent
9	I work together to create a positive and inclusive classroom environment.	3.3	1.09	Very High Extent
10	We recognise and celebrate each other's strengths and accomplishments.	2.9	1.08	High Extent
	Weighted Mean	**3.40**		Very High Extent

Source: Field Survey 2025

Table 2: showed the extent of collaborative teaching used for teaching pupils with mild-to-moderate intellectual disability in Kwara State as follows: I regularly co-plan lessons with my colleagues (3.5), I communicate with my colleagues about student progress and needs (3.4), I participate in joint professional development activities with my colleagues (3.7), I share resources and materials with my colleagues (3.4), My colleagues and I communicate effectively about student needs (3.3), I work together as a team to solve problems and address challenges (3.2), I feel comfortable seeking feedback from my colleagues (3.4), I feel comfortable asking for help or support from my colleagues (3.4), I work together to create a positive and inclusive classroom environment (3.3), We recognize and celebrate each other's strengths and accomplishments (2.9). The weighted mean was 3.4, which is greater than 2.50, and this shows that the extent of collaborative teaching used for teaching pupils with mild-to-moderate intellectual disability in Kwara State is high.

Research Question 2: What is the extent of teacher self-regulation in teaching pupils with mild-to-moderate intellectual disability in Kwara State?

Table 3: Showing the extent of teacher self-regulation in teaching pupils with mild-to-moderate intellectual disability in Kwara State

S/N	ITEMS	MEAN	STD	REMARK
1	I remain calm and composed when dealing with pupils with mild-to-moderate intellectual disability.	3.8	0.39	Very High Extent
2	I take time to reflect on my emotions and how	3.4	0.61	Very High

	they impact my teaching of pupils with mild-to-moderate intellectual disability			Extent
3	I adjust my emotional responses to meet the needs of pupils with mild-to-moderate intellectual disability.	3.0	0.88	High Extent
4	I reflect on my own learning and identify areas for improvement of pupils with mild-to-moderate intellectual disability.	3.1	0.69	High Extent
5	I adjust my instructional strategies based on pupils with mild-to-moderate intellectual disability feedback.	3.4	0.56	Very High Extent
6	I focus my attention on the task at hand of pupils with mild-to-moderate intellectual disability.	3.2	0.81	High Extent
7	I set and enforce clear expectations for pupils with mild-to-moderate intellectual disability behaviour.	3.2	1.08	High Extent
8	I use positive reinforcement strategies to encourage desired behaviours of pupils with mild-to-moderate intellectual disability.	3.4	0.78	Very High Extent
9	I adapt my instructional strategies to meet the diverse needs of pupils with mild-to-moderate intellectual disability.	3.6	0.77	Very High Extent
10	I set and work towards achieving professional goals of pupils with mild-to-moderate intellectual disability.	3.6	0.89	Very High Extent
	Weighted Mean	**3.40**		Very High Extent

Source: Field Survey 2025

Table 3: showed the extent of teacher self-regulation in teaching pupils with mild-to-moderate intellectual disability in Kwara State is follows: I remain calm and composed when dealing with pupils with mild-to-moderate intellectual disability (3.8), I take time to reflect on my emotions and how they impact my teaching of pupils with mild-to-moderate intellectual disability (3.4), I adjust my emotional responses to meet the needs of pupils with mild-to-moderate intellectual disability(3.0), I reflect on my own learning and identify areas for improvement of pupils with mild-to-moderate intellectual disability (3.1), I adjust my instructional strategies based on pupils with mild-to-moderate intellectual disability feedback (3.4), I focus my attention on the task at hand of pupils with mild-to-moderate intellectual disability (3.2), I set and enforce clear expectations for pupils with mild-to-moderate intellectual disability behaviour (3.2), I use positive reinforcement strategies to encourage desired behaviours of pupils with mild-to-moderate intellectual disability (3.4), I adapt my instructional strategies to meet the diverse needs of pupils with mild-to-moderate intellectual disability (3.6), I set and work towards achieving professional goals of pupils with mild-to-moderate intellectual disability (3.6), The weighted mean was 3.2 which is greater than 2.50, this shows the extent of teacher self-regulation in teaching pupils with mild-to-moderate intellectual disability in Kwara State is high.

Research Question 3: What is the level of literacy skills acquisition among pupils with mild-to-moderate in intellectual disability in Kwara State?

Table 4: **Showing the level of literacy skills acquisition among pupils with mild-to-moderate in intellectual disability in Kwara State**

S/N	ITEMS	MEAN	STD	REMARK
1	Pupils with mild-to-moderate intellectual disability can reads short sentences (examples "This is my Book", "The cat sat.")	3.3	0.91	Very High Level
2	Pupils with mild-to-moderate intellectual disability can read simple stories with support	3.3	0.75	Very High Level
3	Pupils with mild-to-moderate intellectual disability can read and write A-Z with teacher support.	3.2	0.94	Very High Level
4	Pupils with mild-to-moderate intellectual disability can write their names correctly with error.	2.9	0.95	High Level
5	Pupils with mild-to-moderate intellectual disability can read short comprehension with pictures	3.1	0.79	High Level
6	Pupils with mild-to-moderate intellectual disability can write simple labels and captions.	3.1	1.04	High Level
7	Pupils with mild-to-moderate intellectual disability can use inventive spelling to represent words.	3.1	0.73	High Level
8	Pupils with mild-to-moderate intellectual disability can write a short paragraph with support.	2.9	0.78	High Level
9	Pupils with mild-to-moderate intellectual disability can use basic punctuation marks (for example, period, comma)	2.7	0.94	High Level
10	Pupils with mild-to-moderate intellectual disability can write simple sentences with support.	3.1	0.86	High Level
	Weighted Mean	**3.40**		Very High Level

Source: Field Survey 2025

Table 4: Showed the level of literacy skills acquisition among pupils with mild-to-moderate in intellectual disability in Kwara State is follows: Pupils with mild-to-moderate intellectual disability can reads shorts sentences (example "This is my Book", "The cat sat.") (3.3), Pupils with mild-to-moderate intellectual disability can read simple stories with support (3.3), Pupils with mild-to-moderate intellectual disability can read and write A-Z with teacher support (3.2), Pupils with mild-to-moderate intellectual disability can write their names correctly with error (2.9), Pupils with mild-to-moderate intellectual disability can read a short comprehension with pictures (3.1), Pupils with mild-to-moderate intellectual disability can write simple labels and captions (3.1), Pupils with mild-to-moderate intellectual disability can use inventive spelling to represent words (3.1), Pupils with mild-to-moderate intellectual disability can write a short paragraph with support (2.9), Pupils with mild-to-moderate intellectual disability can use basic punctuation marks (example, period, comma) (2.7), Pupils with mild-to-moderate intellectual disability can write simple sentences with support (3.1). The weighted mean

was 3.2, which is greater than 2.50. This shows that the level of literacy skills acquisition among pupils with mild-to-moderate intellectual disability in Kwara State is high.

$H_0$1: Collaborative teaching does not significantly determine literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State.

Table 5: Summary of regression of collaborative teaching and literacy skills acquisition of pupils with mild-to-moderate intellectual disability

Model	N	R	R Square	Adjusted R Square	F-cal.	P-value
1	34	.548	.300	-.278	13.73	.001

Dependent Variable: Literacy Skills Acquisition

Source: Field Survey 2025

Table 5: summarises the regression results of the collaborative teaching on the literacy skills acquisition of pupils with mild-to-moderate intellectual disability. The result indicated that there was a positive relationship between collaborative and literacy skills acquisition of pupils with mild-to-moderate intellectual disability (R = .548), while R-squared is .300, which means that the independent variable (collaborative teaching) explained 5.48% variations of the dependent variable (literacy skills acquisition). Thus, this is an accurate reflection that collaborative teaching has significantly determined literacy skills acquisition of pupils with mild-to-moderate intellectual disability (F_{34} = 13.73, p = .001).

Table 6 **coefficients**

Model		Unstandardized Coefficient		Standardized Coefficient			95% Confidence Interval	
		B	Std. Error	Beta	T	Sig.	Lower/Bound	Upper/Bound
1	(Constant)	18.22	6.124		2.976	.006	5.750	30.697
	Collaborative Teaching	.609	.164	.548	3.706	. 001	.274	.943

Dependent Variable: Literacy Skills Acquisition

Source: Field Survey 2025

The coefficients results presented in Table 6 show that collaborative teaching does not significantly determine literacy skills acquisition of pupils with mild-to-moderate intellectual disability (B = 0.548; $t_{(34)}$ = 3.706, P = .001). It indicated that at 5% level of significance, it is evident that the regression equation specified that collaborative teaching significantly determines the literacy skills acquisition of pupils with mild-to-moderate intellectual disability. Based on this, the null hypothesis was rejected. Thus, collaborative teaching has significantly determined the literacy skills acquisition of pupils with mild-to-moderate intellectual disability.

$H_0$2: Teachers' self-regulation does not significantly determine the literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State.

Table 7: Summary of regression of teachers' self-regulation and literacy skills acquisition of pupils with mild-to-moderate intellectual disability

Model	N	R	R Square	Adjusted R Square	F-cal.	P-value
1	34	.313	.098	.070	3.48	.071

Dependent Variable: Literacy Skills Acquisition
Source: Field Survey 2025

Table 7: summarises the regression results of the teachers' self-regulation on the literacy skills acquisition of pupils with mild-to-moderate intellectual disability. The result indicated that there was a positive relationship between self-regulation and literacy skills acquisition of pupils with mild-to-moderate intellectual disability (R = .313), while R-squared is .098, which means that the independent variable (teachers' self-regulation) explained 3.13% variations of the dependent variable (literacy skills acquisition). Thus, this is an accurate reflection that teachers' self-regulation has significantly determined literacy skills acquisition of pupils with mild-to-moderate intellectual disability ($F_{34} = 3.48$, $p = .071$).

Table 8 ***coefficients***

Model		Unstandardized Coefficient		Standardized Coefficient			95% Confidence Interval	
		B	Std. Error	Beta	T	Sig.	Lower/Bound	Upper/Bound
1	(Constant)	27.82	6.670		3.991	.000	13.620	42.016
	Teachers' Self-regulation	.318	.171	.313	1.866	.071	-.029	.666

Dependent Variable: Literacy Skills Acquisition
Source: Field Survey 2025

The coefficients results presented in Table 8 show that teachers' self-regulation does not significantly determine literacy skills acquisition of pupils with mild-to-moderate intellectual disability ($\beta = 0.313$; $t_{(34)} = 1.866$, $P = 0.071$). It indicated that at 5% level of significance, it is evident that the regression equation specified that teachers' self-regulation significantly determines the literacy skills acquisition of pupils with mild-to-moderate intellectual disability. Based on this, the null hypothesis was rejected. Thus, teachers' self-regulation has significantly determined the literacy skills acquisition of pupils with mild-to-moderate intellectual disability.

$H_0$3: There is no significant difference in literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State based on gender.

Table 10: ***Summary of t-test shows the significant difference in literacy skills acquisition of pupils with mild-to-moderate intellectual disability based on gender.***

	Gender	N	Mean	Std Deviation	t	Df	Sig	Decision
Literacy Skills Acquisition	Male	16	42.88	5.91	2.211	32	. 373	Not Sig
	Female	18	38.78	4.89				

Source: Field Survey 2025

Table 10 shows the summary of t-test results showing the significant difference in literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State based on gender. It was revealed that male respondents had a mean score of 42.88 and a standard deviation of 5.91, while female respondents had a mean score of 38.78 and a standard deviation of 4.89. The t was 2.211, degree of freedom 32, and the significance level of .373 (P>0.05). This implies that there was no significant difference in literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State based on gender. Therefore, the null hypothesis that states that significant difference in the literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State based on gender was rejected.

Discussion of Findings

The finding emanated from the study revealed the extent of collaborative teaching of pupils with mild-to-moderate intellectual disability in Kwara State is high (Mean=3.40) the reason could be teachers' allows multiple educators to pool their expertise, providing more comprehensive support for pupils with mid-to-moderate intellectual disability, this finding is consistent with the research conducted by Eileen et. al., (2021), who conducted a study on Collaborative Teaching for English Learners with intellectual disability: Teachers' Efficacy and Principals' Perspective. The examined the impact of collaborative teaching as a service delivery solution to address the academic needs of English language learners (ELLs) with learning disabilities. Various significant aspects of the collaborative teaching method including teacher's self-efficacy, professional education opportunities that address the need of ELLs, academic impact, and principals' perspective were examined. A semi-structured interview instrument called Perceptions of Collaborative Teaching Survey and Semi-Structured Interview was used. Random purposeful sampling was the preferred approach when selecting participants. The study presented evidence indicating that teachers' self-efficacy in meeting ELLs' needs with disabilities is not an educational issue among experienced teachers, but the disparity of services and resources that still prevail for minority students. The study presented evidence indicating that principals support small group instruction through collaborative teachers. Future research recommendations may include a quantitative study to measure the impact of collaborative teaching and administrative support in creating a culture for collaborative teaching to thrive.

Eileen et. al., study is similar to the current study because they both have collaborative teaching intellectual disability as a variable. However, they are different because the current study added self-regulation and gender as variable which is not part of Eileen et. al., study. Also, the current study was conducted in Nigeria but Eileen et. al., study was in different part of the country.

The second finding of this study revealed that teacher self-regulation in teaching pupils with mild-to-moderate intellectual disability in Kwara State is high (Mean=3.40). The reason could be that teachers were better at managing their own emotions, creating a more supportive learning environment to meet the unique needs of pupils with mild-to-moderate intellectual disability. Thus, teacher self-regulation in the context of teaching pupils with mild-to-moderate intellectual disability refers to a teacher's ability to manage their own emotions, behaviours, and thoughts to effectively support students with this learning need. It involves being aware of

individual student needs, using appropriate instructional strategies, and adapting teaching practices to promote student learning and well-being. This finding is consistent with the research conducted by Karlen (2023) says that teachers as learners and agents of self-regulated learning: The importance of different teachers' competence aspects for promoting metacognition. This study examines the extent to which teachers' competence aspects as self-regulated learners and agents of self-regulated learning (SRL) explain their self-reported and students' perceived promotion of metacognition. One hundred and eighty-five (185) lower secondary school teachers participated in this study. The results reveal positive direct relationships between teachers' knowledge, self-efficacy, intrinsic interest value and the promotion of metacognition. Teachers' own SRL skills and mindsets about SRL were indirectly related to the promotion of metacognition via their self-efficacy and intrinsic interest value. This study provides new evidence of the importance of teachers' dual competence profile for promoting metacognition.

Karlen study is similar to the current study because they both use self-regulation learning theory. However, they are different because the current study added collaborative teaching, gender and pupils with mil-to-moderate intellectual disability as variable which is not part of Karlen study. Also, the current study was conducted in Kwara State, Nigeria but Karlen study was in different part of the country.

The third finding of this study revealed that the level of literacy skills acquisition among pupils with mild-to-moderate intellectual disability in Kwara State is high (mean 3.40). The reason could be that effective teaching strategies, such as phonics and multisensory approaches, improve the teaching and learning of literacy skills acquisition among pupils with mild-to-moderate intellectual disability. This finding is consistent with the research conducted by Dessemontet et al., (2021), A descriptive study on reading instruction provided to students with intellectual disability. The quality of reading instruction provided to students with mild-to-moderate intellectual disability. This study aimed to describe the reading instruction provided to students with mild-to-moderate intellectual disability who were not yet readers in self-contained elementary classrooms. The teachers of 24 classrooms participated in the study. Systematic observations of reading lessons, follow-up interviews with the teachers, review of teaching material, and content analysis of students' individualized education plans were conducted. Findings indicate that phonics and phonological awareness were taught in most of the classrooms. However, phonics was taught systematically, as recommended in the research, in only less than half of the classes. Sight-word instruction and vocabulary instruction were observed in more than half of the classes. Comprehension instruction of texts read aloud by the teacher was observed in only about a third of the classrooms. Recommendations to support teachers in enhancing the quality of reading instruction are provided.

Dessemontet et al., study is similar to the current study because they both pupils with mild-to-moderate intellectual disability. However, they are different because the current study added collaborative teaching, literacy skills acquisition and gender as variable which is not part of Dessemontet et al., study. Also, the current study was conducted in Kwara State, Nigeria but Dessemontet et al., study was in different part of the country.

Similarly to the research carried out by Nilsson et al., (2021), who conducted a study on decoding abilities in adolescents with intellectual disabilities: the contribution of cognition, language, and home literacy. Decoding abilities in individuals with intellectual disabilities (ID) are substantially lower than for typical readers. The underlying mechanisms of their poor reading remain uncertain. The aim of this study was to investigate the concurrent predictors of decoding ability in 136 adolescents with non-specific ID, and to evaluate the results in relation to previous findings on typical readers. The study included a broad range of cognitive and language measures as predictors of decoding ability. A LASSO regression analysis identified phonological awareness and rapid automatized naming (RAN) as the most important predictors. The predictors explained 57.73% of the variance in decoding abilities. These variables are similar to the ones found in earlier research on typically developing children, hence supporting our hypothesis of a delayed rather than a different reading profile. These results lend some support to the use of interventions and reading instructions, originally developed for typically developing children, for children and adolescents with non-specific ID.

Nilsson study is similar to the current study because they both reading, intellectual disability and

regression analysis. However, they are different because the current study added collaborative teaching, self-regulation and gender as variable which is not part of Nilsson study. Also, the current study was conducted in Kwara State, Nigeria but Nilsson study was in different part of the country.

The fourth finding of this study revealed that collaborative teaching significantly determined literacy skills acquisition of pupils with mild-to-moderate intellectual disability (B=0.548; t_{32}=3.706; P=0.001). The reason could be that Collaborative teaching enables teachers to tailor instruction to pupils with mild-to-moderate intellectual disability. This finding is in support of the research carried out by Handayani's (2021), who conducted a study on the effect of collaborative teaching technique and literacy interest on the literacy skills of eighth grade students on recount text at SMP Negeri 1 Sembawa.

The aim of this study is to look at how cooperative learning strategies and literacy interest affect 8th students' reading comprehension at SMP Negeri 1 Sembawa. 68 eighth-grade students from SMP Negeri 1 Sembawa are chosen as respondents for this analysis using a two-stage random sampling method. In this analysis, the factorial research design was used. A questionnaire and a test were used to collect the data. These interviews were transcribed using the Combined Sample t-test, Independent T, and Two Ways ANOVA. The results showed that when students were taught using the collaborative student learning, there was a significant difference in their literacy skills. Second, when students were taught using the conventional approach, there was a significant improvement in their reading comprehension. Third, when the cooperative learning approach and the traditional method were used, there was a significant difference in reading comprehension between students with lower and higher reading interest. Finally, there was a significant association impact of cooperative learning method and literacy interest on eighth grader students' reading comprehension at SMP Negeri 1 Sembawa. In conclusion, the cooperative learning approach worked well for pupils whom were enthusiastic about literacy.

Handayani's study is similar to the current study because they both collaborative teaching, literacy, questionnaire, ANOVA, and Independent Samples t-test. However, they are different because the current study added self-regulation and gender as variable which is not part of Handayani's study. Also, the current study was conducted in Kwara State, Nigeria but Handayani's study was in SMP Negeri 1 Sembawa.

Fifth findings revealed that teachers' self-regulation significantly determined of literacy skills acquisition of pupils with mild-to-moderate intellectual disability (B=0.313; t_{32}=1.866; P=0.071) the reason could be teachers' enable to manage their emotions, behaviours, and thoughts while teaching directly on how well these pupils read and write this in line with study carry out by Sáez-Delgado (2022) conducted a study on teacher self-regulation and its relationship with student self-regulation in secondary education. Self-regulation is relevant to understanding the teaching–learning process; however, few studies have focused on teachers' self-regulatory processes. This study aimed to characterise and analyse the relationship between teachers' and students' self-regulation. The design was cross-sectional and correlational. The sample consisted of 1,481 participants (students n = 1123 and teachers n = 358) from 25 secondary schools in 17 cities of the Biobío region of Chile. The study used questionnaire as the instrument for data collection. In students, self-regulatory strategies were found to be deployed only half of the time; women were more self-regulated, and there was no difference in the levels of self-regulation according to grade. Teachers, it was found, almost always self-regulate their teaching, and the variables that influence their self-regulation are motivation, gender, and age, explaining between 25% and 28% of the variance. Positive and small correlations were evidenced between teacher role disposition with learning performance (rho = 0.10, $p < 0.05$) and teacher role self-evaluation with both learning performance and self-evaluation of learning in their students (rho = 0.12, $p < 0.05$). This study provides relevant evidence and proposes changes that could have a positive impact on teacher training and improve current teaching–learning practices in Chile, which would contribute to the quality of education.

Sáez-Delgado's study is similar to the current study because they both have self-regulation as a variable. However, they are different because the current study added collaborative teaching as one of the variables which is not part of Sáez-Delgado's study. Also, the current study was conducted in Nigeria but Sáez-Delgado's study was in a different country.

This finding is also in agreement with the research carried out by Bohlmann (2015) conducted a study on "Self-Regulation and Task Engagement as Predictors of Emergent Language and Literacy Skills". Self-regulation signals the need for increased understanding of how young children become active players in the acquisition of knowledge. In particular, self-regulation may be linked to subsequent academic achievement through greater engagement with the learning tasks and activities made available in the preschool classroom. This study tested preschoolers' (N¼603) observed task engagement in the classroom as mediating the relations between directly assessed self-regulation and changes in their language and literacy outcomes during the preschool year. Findings indicate that self-regulation is directly related to observed task engagement as well as changes in a host of language and literacy skills. Engagement with tasks and activities in the classroom also partially mediates the association between self-regulation and changes in expressive vocabulary. Mediation through task engagement was not found for receptive language or early literacy skills. Practice or Policy: Findings suggest that the development and evaluation of clearly articulated preschool curricula designed to promote academic achievement by fostering self-regulation is an important direction for future research.

Bohlmann study is similar to the current study because they both have self-regulation and literacy skills as a variable. However, they are different because the current study added collaborative teaching as one of the variables which is not part of Bohlmann study. Also, the current study was conducted in Nigeria but Bohlmann study was in a different country.

The Sixth finding revealed that there was no significant difference in literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State based on gender (t_{32}=2.211; P=0.373) the reason could be female pupils were performing better than male pupils in acquiring literacy skills acquisition this is in support of Aina et al (2024) conducted a study on the impact of gender difference on literacy skills acquisition of pupils with mild-to-moderate intellectual disability through educational facilities in public early childhood education centres, Lagos state, Nigeria; the study found that. There was no significant interaction effect of gender on pupils' literacy skills acquisition through educational facilities in early childhood educational centres in Lagos State ($F_{(1, 70)} = 0.063$, $p > .05$, $p = 0.001$). The study concludes that gender has a significant effect on literacy skills in pupils with mild-to-moderate intellectual disability, influenced by various factors, which include educational facilities and other factors like socio-cultural, environmental, and others. The study recommends, among others, that Teachers should make sure that all educational facilities' instructional materials used for instruction are free from gender stereotypes, as this can cause a lack of concentration, low self-esteem and low performance of the pupils.

Aina et al study is similar to the current study because they both have gender, literacy skills acquisition and pupils with mild-to-moderate intellectual disability as a variable. However, they are different because the current study added collaborative teaching and self-regulation as the variable which is not part of Aina et al study. Also, the current study was conducted in Kwara State, Nigeria but Aina et al study was in Lagos State.

Similarly to the research carried out by Jacob (2022) conducted a study on the predictive influence of gender, parental socioeconomic status and teachers' qualification on English language performance of pupils with intellectual disability. The study investigated the influence of gender, parental socioeconomic status and teachers' qualification English language performance of pupils with intellectual disability in Ibadan, Oyo state, Nigeria. It was survey research; as such, the population used was students with mild intellectual disability, using a purposive sampling technique, 50 students with mild intellectual disability were drawn for the study. For data analysis, multiple regression analysis statistical tools are used at the 0.05 level of significance. The result of the data analysis showed that parents' socioeconomic status and teacher qualification had a relationship with the English performance of pupils with intellectual disability; there was a joint and relative effect of the independent variables on English language performance. Based on the findings, recommendations made include the government ensuring that necessary school materials for children with intellectual disability are made available, and the teacher employed should be qualified.

Jacob study is similar to the current study because they both have gender, literacy skills acquisition and pupils with mild-to-moderate intellectual disability as a variable. However, they are different because the

current study added collaborative teaching and self-regulation as the variable which is not part of Jacob study. Also, the current study was conducted in Kwara State, Nigeria but Jacob study was in Ibadan, Oyo state, Nigeria.

Conclusion

Based on the research findings of the foregoing discussion, it was revealed that collaborative teaching and self-regulation are significant determinants of literacy skills acquisition of pupils with mild-to-moderate intellectual disability in Kwara State. Therefore, it was concluded that collaborative teaching and teacher self-regulation help educators to provide more effective support for pupils with mild-to-moderate intellectual disability, leading to improved literacy skills acquisition and overall academic success.

Recommendations

Based on the results of the findings, the following recommendations were made:

1. The Federal Government should effectively develop collaborative teaching models; design and implement collaborative teaching models that pair special education teachers with general education teachers.
2. The three levels of government should offer training and workshops on collaborative teaching, self-regulation, and literacy instruction for teachers.
3. School administrators should create support systems for teachers, including mentorship, coaching, and professional development on the importance of peer collaboration and self-regulation.
4. School administrators should develop the capacity of teachers and school leaders to sustain collaborative teaching and self-regulation practices.
5. The federal government should engage with local communities, parents, and stakeholders to promote inclusive education and support pupils with mild-to-moderate intellectual disabilities.
6. School administrators should ensure that both male and female pupils with mild-to-moderate intellectual disabilities have equal access to literacy instruction and support.

ii.

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