Enhancing Academic Achievement of Learners with Attention Deficit Hyperactivity Disorder through Teacher-Learner Proximity in Primary Schools in Wakiso District, Uganda.

Josephine Ssirimuzaawo[1], Juliet Nakalule[2], Miph Musoke[3]

[1]Nkumba University, Department: School of Education.

[2]Kyambogo University, Department: Special Needs Education.

[3]Nkumba University, Department: School of Science.

ABSTRACT

This study aimed at enhancing the academic achievement of learners with attention deficit hyperactive disorder (ADHD) symptoms in Government primary schools in Wakiso District Uganda. The purpose of this study was to examine the effect of teacher-learner proximity (TLP) as an intervention on the academic achievement of learners displaying symptoms of ADHD in Government primary schools within Wakiso District, Uganda. The study was a follow-up from the baseline study that established the prevalence of ADHD symptoms among primary school learners in Wakiso district Uganda.The study utilized an experimental design, specifically a randomized controlled trial (RCT) involving two clusters - an experimental group where TLP was implemented and a control group where traditional teaching methods were upheld. A total of 104 learners, with 52 in each cluster and 32 teachers – 16 in the experimental and 16 in the control group, were chosen from 4 schools in each group. Analysis of the results showed that teacher-learner proximity significantly improved the academic performance of learners with ADHD symptoms, particularly in numeracy, reading, and writing abilities. The statistical analysis revealed a p-value of .000, indicating a substantial positive impact of TLP on academic achievement. Notably, the paired t test mean writing scores increased significantly from 26% before TLP to 72% post TLP intervention, highlighting the efficacy of TLP as an educational intervention. This study recommends that TLP can be advantageous not only for academic subjects but also for promoting the holistic development of skills among learners, irrespective of ADHD symptomatology. This study contributes to the pursuit of goal number 4 of the sustainable development goals by promoting inclusive and equitable quality education for all learners, including those with ADHD symptoms.

Keywords: Teacher-Learner Proximity, Academic Achievement, Intervention, Randomized Controlled Trial (RCT), ADHD Symptoms.

INTRODUCTION

ADHD, initially described as "a lack of moral control" among children, has a long history dating back over 200 years. The disorder has evolved through various labels such as "brain damage syndrome" to the current term, ADHD. (Barkley, 1997). Despite the changing terminology, the core characteristics of ADHD as defined by the DSM-5 remain consistent: persistent patterns of inattention, hyperactivity, and impulsivity. (American Psychiatric Association, 2013). The historical context highlights the complexity of understanding ADHD and emphasizes the need for ongoing research and awareness. Despite its historical origins, ADHD is prevalent globally, affecting 4% to 12% of children aged 3-17 years, with varying rates across countries. The disorder is associated with learning difficulties, academic underachievement, and social adjustment issues,

with 50% to 70% of children with ADHD symptoms facing persistent challenges in reading, writing, math, and social interactions. (Sagvolden *et a l.,* 2005, Biriah *et al.,* 2018, Corkum. Gonnell *et al.,* 2010).

The management of ADHD dates back to the late 18th century, with Scottish physician Sir Alexander Crichton introducing the concept of "mental restlessness." (Barkley, 1997, Crichton, 1798) Over time, behavioral interventions have been developed, with psychologists like Russell Barkley and Linda Pfiffner playing pivotal roles. Barkley's model focused on positive reinforcement and consistent rules, while Pfiffner's work emphasized behavioral parent training and classroom interventions. (Pfiffner et al., 2007) These interventions have significantly impacted the treatment of ADHD and have been centered on evidence-based practices to improve the lives of individuals with the disorder.

The persistent commitment of the above-mentioned researchers and clinicians in enhancing and creating behavioural interventions for ADHD symptoms in children signifies the importance of this study. The prevalence of ADHD symptoms hindering academic achievement among children underscores the urgency for effective interventions.

This research aimed at investigating the effect of Teacher -Learner Proximity (TLP) intervention on the academic achievements of learners displaying symptoms of ADHD. By focusing on the role of teachers in implementing interventions, this study aimed at bridging the gap between treatment strategies and academic achievement in children with ADHD symptoms in government primary schools in Wakiso District Uganda.

In Uganda, despite high primary school enrollment rates, many children with Attention Deficit Hyperactivity Disorder (ADHD) symptoms struggle academically. Research has shown that children with ADHD symptoms tend to achieve lower academic outcomes and experience profound learning difficulties. In Wakiso District, Uganda, children with ADHD symptoms have been reported to have lower academic performance compared to their peers without such disabilities. The existing education system in Uganda faces challenges in achieving the Sustainable Development Goals' goal of inclusive quality education for all, particularly for children with disabilities. Behavioral management therapy has been identified as an effective intervention for children with ADHD, but its implementation in the Ugandan education system remains limited. Therefore, there is a need for a targeted investigation into teacher-led classroom interventions (closer teacher proximity) and its impact on addressing academic challenges faced by children with ADHD in Government primary schools in Uganda.

Research Objectives:

To assess the academic achievement of learners with ADHD symptoms in government primary schools in Wakiso District, Uganda.

To examine the effect of Teacher -Learner Proximity (TLP) intervention on the academic achievement of learners with ADHD symptoms in writing, reading, and numeracy

Research Questions

1. What is the academic achievement of learners with ADHD symptoms in government primary schools in Wakiso District?
2. What is the effect of Teacher -Learner Proximity (TLP) intervention on the academic achievement of learners with ADHD symptoms in writing, reading, and numeracy?

Hypothesis:

Teacher Proximity has no effect on academic achievement of learners with ADHD symptoms in writing, reading, and numeracy.

METHODOLOGY

This study employed a mixed methods design within a pragmatic paradigm, specifically utilizing a Randomized Control Trial (RCT) as an experimental design. The study aimed to investigate the impact of Teacher -Learner Proximity (TLP) on the academic achievement of learners with attention deficit hyperactivity disorder (ADHD) symptoms in government primary schools in Wakiso District, Uganda.

Study Population

The study population consisted of primary school learners (pupils from p. 1 to p. 4) and teachers from government primary schools in Wakiso District, Uganda. The inclusion criteria for learners were: (1) displaying symptoms of ADHD, (2) enrolled in government primary schools in Wakiso District, and (3) aged between 6 and 12 years. The inclusion criteria for teachers were: (1) employed in government primary schools in Wakiso District, and (2) responsible for teaching learners with ADHD symptoms.

Location

The study was conducted in Wakiso District, Uganda, which is situated in central Uganda, bordered by Nakaseke, Luweero, Mukono, Kalangala, Mpigi, and Mityana Districts. The district is divided into two counties, Kyadondo and Busiro, as well as the municipalities of Entebbe, Kajjansi, and Nansana. The geographic coordinates of the district are 00°24′N 32°29′.

Participants

The participants in this study included learners (pupils from p. 1 to p. 4) and teachers from government primary schools in Wakiso District. Teachers played a crucial role in providing insights into children's behavior, while the researcher and key informant observed the behavior of the children at school.

Research Instruments.

A standardized questionnaire developed by researcher team for learners to assess the effectiveness of TLP intervention. An assessment tool developed by UWEZO to assess the academic achievement of learners with ADHD symptoms at before and after the TLP intervention. Observational checklists developed by researcher team to assess learner behavior and academic achievement. Documentary review check list developed by the research team to investigate the academic progress of learners.

Data Gathering Procedures

Data was collected through a combination of surveys, questionnaires, and observational checklists. Teachers completed provided information about learners, a researcher self-administered and guided questionnaires for learners were filled, while researchers observed learner behavior and academic achievement.

Protocol Involved

The research protocol involved obtaining informed consent from teachers and learners and their parents/guardians before collecting data. The research team also obtained approval from school administrators and Uganda ethics committee before conducting data collection.,

Sample size procedures.

For the baseline study, a sample size of 64 teachers was chosen for initial training on ADHD symptoms recognising, each teacher was responsible for completing questionnaires for the learners selected in their classes, selection criteria included choosing four teachers from each school, one teacher per class, qualitative data was collected from a sample of 32 teachers and one key informant from each of the 16 primary schools.

For the Randomized Control Trial (RCT), a sample size of 104 learners was used, with 52 learners in the experimental group and 52 in the control group,16 teachers were assigned to each cluster, with two clusters

in total (experimental and control), the sample was selected using a combination of random and purposive sampling methods to ensure representativeness.

Study procedures.

Baseline.

The researcher first tested for the prevalence of ADHD symptoms using the SWAN (The Strengths and Weakness of Attention Deficit /Hyperactivity Disorder Symptoms and Normal Behaviour Scale Questionnaire (SWAN -1994.) APA (2000).

In this study the researcher used the teachers to fill the SWAN question on behalf of the learners because of the researchers conducted training sessions for teachers to recognize ADHD symptoms, highlighting the importance of teachers spending a significant amount of time with children and their prior knowledge of special needs education. The involvement of teachers in identifying ADHD prevalence in schools was supported by their training, extensive time spent with children, and prior knowledge of special needs education. Also, observation of learners and consultation with a key informant from a special needs expert were used to supplement the teachers' work in identifying ADHD symptoms.

Participant inclusion criterion

The following criterion for inclusion was followed.

1. Participants freely agreed to participate in the study.
2. Children obtained consent from their parents.
3. Children had to be in lower primary classes (p.1 to p.4) in a government-aided school.
4. Children with elevated ADHD symptoms, as rated by the SWAN questionnaire, had teachers who endorsed their symptoms.
5. A primary classroom teacher had to agree to participate in the classroom component.
6. All participants (parents, teachers, and children) must complete consent forms and assent forms approved by the research Ethics Committee and Uganda National Council of Science and Technology.
7. Teachers of children with ADHD had to be willing and trained to implement study interventions as part of their work responsibilities.
8. Children had to seek consent from their parents.
9. Children studying in lower primary classes' p.1 to p.4 in a Government primary school.
10. Parent and teachers of children with elevated rating of ADHD symptoms on the SWAN questionnaire endorsed by a teacher / with scoring less than four on 8 or more questions out of the 18 questions of SWAN. Questionnaire.)

Exclusion criterion

1. For baseline children with other comorbidities that can influence their academic achievement other than ADHD were excluded from the intervention.
2. Pupils of middle and upper primary with ADHD were excluded from the study.
3. Pupils above 13 years of age but in lower primary were also excluded in the study.

Participants recruitment and screening procedures.

Pupils were selected randomly for baseline data collection regarding ADHD symptoms, while those identified by teachers for academic concerns related to inattention or hyperactivity were purposively included in a program. Eligibility criteria included age, class level, absence of certain impairments, and not taking medication for attention or behavior disorders. The head teacher or designated staff contacted families and teachers to invite them to participate in screenings to determine eligibility. Parents provided written consent for information exchange between the school and research team, and telephone screenings were conducted to assess academic, social, and behavioral functioning at school.

Assessment of academic achievement

The researcher used UWEZO assessment tool and class teacher records to test for the academic achievement of the children in numeracy, reading and writing as part of this study.

The researcher recorded ongoing assessments of learners through daily class activities and midterm tests to track the progress of the learners. (pre -intervention score) Additionally, the researcher directly administered UWEZO assessments tests in the three key learning areas - reading, writing, and numeracy. This assessment was conducted both on children displaying symptoms of ADHD and those without ADHD symptoms, to compare and analyse the performance of the two groups. The use of multiple assessment methods and directly evaluating academic achievement in various subject areas, the study aimed to provide a thorough analysis of the educational outcomes of the learners.

Formation of intervention and control groups.

The researcher formed two groups for the study as shown using the consort flow diagram for a an RCT with two arms investigating the interventions for lower primary learners with ADHD symptoms in Wakiso District, Uganda.
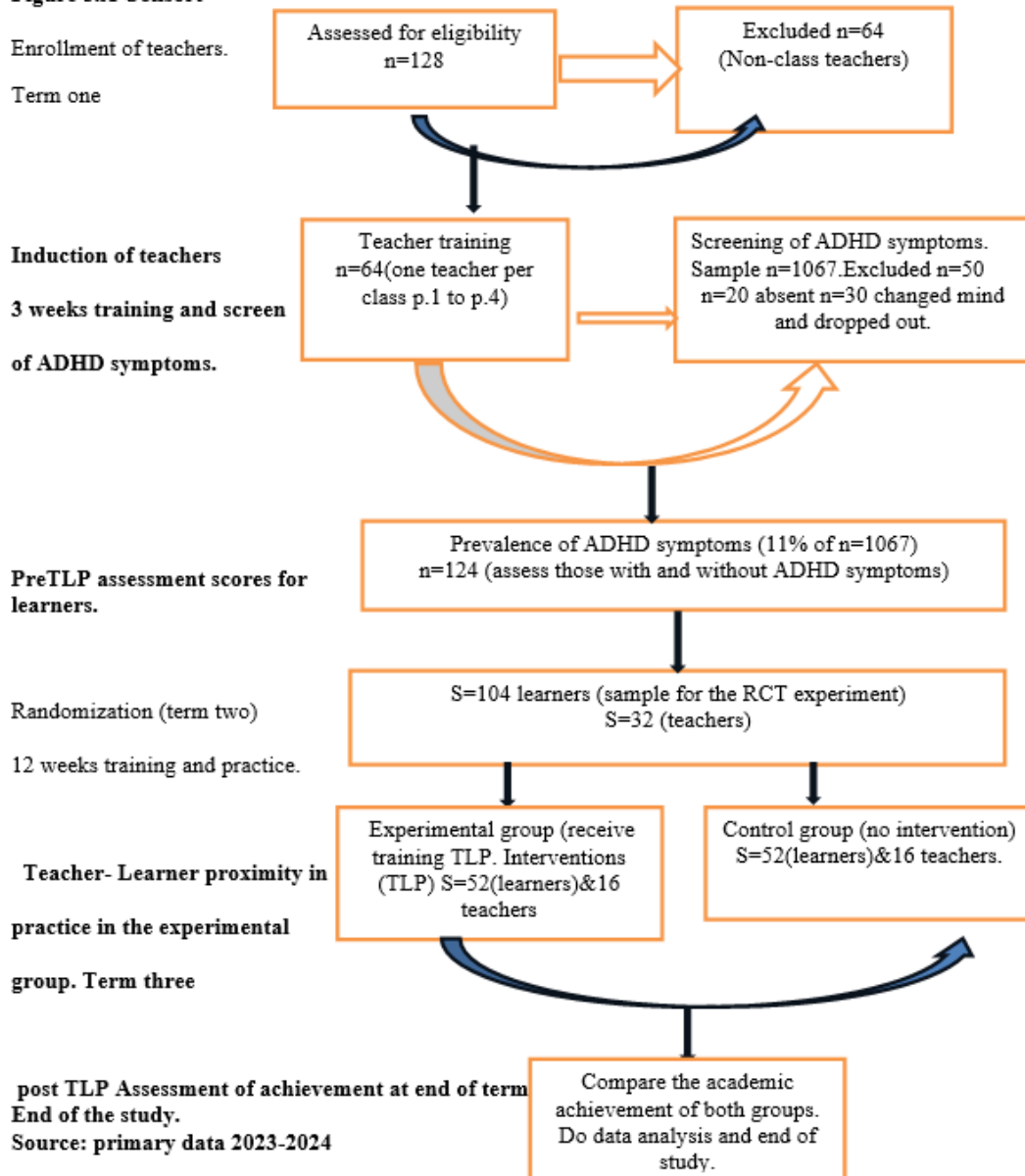

Figure 5. A Consort flow diagram providing a clear overview of the study.

According to the consort figure 1 above which is a flow diagram providing a clear overview of the study design, randomization process, interventions, data collection, and analysis methods for the RCT with two arms focusing on interventions for learners with ADHD symptoms in primary schools in Wakiso District, Uganda.)

In term one at the beginning of the year, which was the initial phase of the study, 128 teachers from primary one to primary four in 16 randomly selected schools were enrolled. Eventually, only class teachers (n=64) for classes P.1 to P.4 were retained, with one teacher per class. The teachers underwent a three-week induction training that covered knowledge of ADHD. Subsequently, teachers were tasked with screening 16.6 pupils from their classes, totalling 67 per school, using The Strengths and Weakness of Attention Deficit /Hyperactivity Disorder Symptoms and Normal Behaviour Scale Questionnaire (SWAN -1994.) questionnaire to identify learners with ADHD symptoms. This data collection, combined with observations by the researcher and key informant, helped identify learners with ADHD symptoms. The sample for screening was 1067.

In the next term, academic achievement assessments were conducted for learners with ADHD symptoms (11.6% of 1067) and those without symptoms using the UWEZO assessment tool, teachers' class records, and midterm scores. An equivalent number of learners with and without ADHD symptoms were randomly selected for pre-intervention academic achievement score in numeracy, writing, and reading.

In the same term two, learners were allocated/randomized into two groups: an experimental group (52 learners from p.1 to p.4)) where teachers underwent a 13-week training on teacher-led interventions such as Closer Teacher Proximity to the learner this academic strategies tailored for children exhibiting symptoms of ADHD and a control group (52 learners from p.1 to p.4))) receiving normal teaching without intervention. The researcher would visit each school once to follow up on the implementation of the teacher led intervention strategy.

At the beginning of term three practice of TLP started and at the end of term three, the researcher conducted follow-up assessments to evaluate academic achievement using UWEZO standardized tests and class teacher midterm scores records, to assess the relationship between closer teacher proximity interventions and academic achievement, analyse intervention effects on academic achievement outcomes of learners' academic achievement in Wakiso District, Uganda.The study design and implementation followed a rigorous process guided by the Consort flow diagram to ensure clarity, transparency, and reliability in evaluating the effectiveness of teacher-Learner proximity to the learner (TLP) interventions for learners with ADHD symptoms in primary schools.

Description of the intervention.

Teacher -Learner proximity involved the teacher physically positioning themselves near the child with ADHD, either by sitting next to them or standing near their desk, to provide support, direction and monitoring of their behavior (Langberg & Becker, 2016). This intervention is based on the premise that increased teacher supervision and support can help children with ADHD stay on task, manage their behavior, and engage more effectively in classroom activities (Antshel et al., 2016).

By being physically closer to learners, teachers could monitor their behavior, redirect their attention, and provide immediate feedback and assistance when needed. This proximity also allowed teachers to establish a stronger rapport with learners and build a supportive relationship that can enhance learners' engagement and participation in the classroom.

DATA COLLECTION AND ANALYSIS

The table below shows the data collection methods and analysis.

TABLE 1: THE RESEARCH INSTRUMENT

Variable	Variable constructs	Experiment/Research instruments.	Data analysis
Academic Achievement	Numeracy counting consistence, addition, subtraction, divide writing and reading competences) writing.	Uwezo test kits, Documentary review of the end of term exams and daily teacher assessment records.	Paired t-test Correlation Linear regression
Prevalence of ADHD symptoms	Behavior Teacher-rated ADHD symptoms	SWAN Rating Scale-Parent (Swanson et al., 1994) SWAN Rating Scale-Teacher (Swanson et al., 1994) and observation check list. Observation checklist.	Descriptive statistics
Teacher -Learner Proximity(TLP) to the learner.	Frequency. Duration Consistence Outside /inside class	-Use Observation check list, Documentary review check list. for checking and recording Writing, reading, numeracy abilities measured verbally, in books, homework, end of term tests scores at start and after intervention. (for both experiment and control groups) -Use learner questionnaire (researcher administered.) -Focus group discussion.	Paired t-test Correlation Linear regression Content analysis.

Source: Primary data 2022.

Findings.

To answer the research hypotheses, it was essential to first establish the academic achievement levels of pupils with ADHD symptoms before the intervention and those without ADHD symptoms. This allowed for a robust comparison to confirm that learners with ADHD symptoms perform poorly and may require intervention as reported by other researchers such as Barkley (2006), Rabiner et al (2016), Afeti, and Nyako (2017).

The sample for pupils with ADHD symptoms was derived from baseline which put prevalence at 11.60% of the studied sample exhibited ADHD symptoms. To ensure a representative and comparable sample, a random sampling technique was used to select an equal number (11.60%) from the overall sample 1067 for base line, who exhibited ADHD symptoms, and those without ADHD symptoms. Further considerations were made to ensure that the selected sample with ADHD symptoms was similar to those without ADHD symptoms in terms of various demographic characteristics. These characteristics included gender, age, class and any other relevant factors, as they were going to be assessed in academic achievement.

Exploring the academic achievement of pupils with ADHD symptoms and comparing it to those without ADHD symptoms, the data collected was divided into two sets: one for pupils with ADHD symptoms (referred to as Group A) and another for pupils without ADHD symptoms (referred to as Group B).

For academic achievement, pupils were assessed in three learning areas: numeracy, reading, and writing, and two kinds of assessments were made, namely midterm scores by the class teacher and assessments given by the researcher (UWEZO assessment tool). Statistical tests were conducted on both sets using SPSS software

to analyse the variables of interest. When the academic achievement of learners with and without ADHD symptoms was tested and as illustrated in the tables below, learners with ADHD achieved lower compared to those without ADHD symptoms. This informed the research of the need to further proceed with the intervention for objective one, which was the use of closer teacher proximity in the classroom setting as an intervention to see if the achievement of learners in numeracy, reading, and writing would improve. The findings on that effect are presented in the following paragraphs.

Study Response Rate

Table 2. Study Response Rate.

Study	Category of respondents	Target sample	Completed sample	Response rate
Quantitative	Pupils with ADHD symptoms as rated by SWAN questionnaire	11.60 % of 1067 original sample (124)	111	90%
	Pupils with no symptoms of ADHD as rated by the SWAN questionnaire.	11.60% 1067 of the original sample (124)	111	90%

Source: Field Data (2022).

What is the Academic Achievement of Learners with and Without ADHD Symptoms ?

To answer that research question descriptive statistics were run to get the mean scores of learners in the three learning areas pertinent to this study namely reading, writing and numeracy. The finding are presented below;

DESCRIPTIVE STATISTICS FOR LEARNERS WITHOUT SYMPTOMS (GROUP B)

The table below indicates the mean, standard deviation and variance for learners without ADHD symptoms.

Table 3. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Numeracy scores	111	15.00	91.00	59.2252	20.29955	412.072
Reading scores	111	15.00	89.00	65.9865	17.34836	300.966
Writing Scores	111	19.00	92.00	70.5721	16.57735	274.808
Valid N (listwise)	111					
Grading scale: 0-30 –Needs improvement, 40-50- average, 60-70-very good, 70+ excellent						

Source: primary data 2023.

Based on the results of the descriptive statistics, it is evident that learners without ADHD symptoms in primary schools have impressive mean scores in numeracy, reading and writing. The mean numeracy score of 59.2252, which was good and above average with a standard deviation of 20.29955, mean reading score of 65.9865, which was graded as very good with a standard deviation of 17.34836 and mean writing score of 70.5721 which was also very good with a standard deviation of 16.57735. All scores reflect above-average performance levels. Among these scores, numeracy shows a higher variability indicated by its larger standard deviation and variance compared to reading and writing. This suggests that there may be more diverse individual performances in numeracy among learners without ADHD symptoms.

These results indicate that, on average, learners without ADHD symptoms have higher scores in reading, numeracy and writing. And general their performance is above average, the variability in numeracy scores is

greater than in reading and writing, as indicated by the higher standard deviation and variance. This suggests that there may be more individual differences in numeracy performance among learners without ADHD symptoms.

DESCRIPTIVE STATISTICS FOR LEARNERS WITH SYMPTOMS (GROUP A).

The table below indicates the mean, standard deviation and variance for learners with ADHD symptoms.

Table .4 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Numeracy scores	111	6.00	73.00	29.3874	20.96021	439.330
Reading scores	111	7.00	61.00	33.2162	19.06515	363.480
Writing Scores	111	9.00	7.00	43.5946	18.05314	325.916
Valid N (listwise)	111					
Grading scale: 0-30 –Needs improvement, 40-50- average, 60-70-very good, 70+ excellent						

Source: primary data 2023.

The results of the table above indicate that learners with ADHD symptoms in primary schools have varying levels of academic achievement in numeracy, reading, and writing.

In terms of numeracy scores, the mean score was 29.39, with a standard deviation of 20.96. That mean according to grading scale needs improvement which suggests that the achievement of learners with ADHD symptoms in numeracy skills is below average compared to the scores of learners without symptoms in table 2 above.

For reading scores, the mean score was 33.22, with a standard deviation of 19.07. Similarly, that scores needs improvement and it is below average according to the grading scale above. In terms of writing scores, the mean score was 43.59, with a standard deviation of 18.05. It seems that learners with ADHD symptoms are performing slightly better in writing compared to numeracy and reading. However when compared to learners without symptoms in table 2 above still their performance needs improvement because the learners who do not have ADHD symptoms their writing mean score was above 60.(very good in terms of the grading scale).

IMPLICATIONS OF THE FINDINGS ON ACADEMIC ACHIEVEMENT.

The results suggest that learners with ADHD symptoms have lower academic achievement in numeracy, reading, and writing compared to their peers without symptoms. These findings are consistent with other authors such as Afeti and Nyako (2017). The findings above could be attributed to the challenges in attention, focus and impulse control that are characteristic of ADHD. Therefore, it is important for teachers to provide appropriate support, intervention accommodations for learners with ADHD to ensure their academic success, this provides a firm background for the main purpose of this study which was to examined the effect of Teacher -Learner Proximity (TLP) as an intervention on academic achievement of learners with ADHD symptoms.

WHAT IS THE EFFECT OF TEACHER -LEARNER PROXIMITY (TLP) ON THE ACADEMIC ACHIEVEMENT OF LEARNERS WITH ADHD SYMPTOMS?

 To address that research question, the researcher randomly assigned participants into two groups: an experimental group that received theTLP intervention and a control group that received conventional teaching methods. The participants were drawn from eight different schools, with each school having 13 learners in both the experimental and control groups.

The researchers utilized a combination of statistical tests to analyse the data and determine the impact of theTLP intervention on academic achievement. The response rate is presented in table 1.2 below.

Table 5. Study Response Rate for RCT.

Category	Targeted Sample	Completed Sample	Boys	Girls	Number of school	Learners per school	Teachers	Number of classes
Experimental group	52	52	28	24	4	13*4=52	16	p.1 to p.4
Control group.	52	48	26	22	4	13*4=52	16	p.1 to p.4
Total	104	100	54	46	8	104	32	

Source: primary data 2023.

As indicated from table 5. The study response rate was 100% for the experimental group, with 52 learners completing the study. In the control group, the response rate was slightly lower at 92.3%, with 48 learners completing the study out of the targeted sample of 52. Some learners in the control group may have lost interest in participating in the study over time since the study took several months. Some parents lost motivation and decided to withdraw them from the study.

PAIRED TESTS FOR CLOSER TEACHER PROXIMITY AT PRE AND POST INTERVENTION SCORES.

Paired sample t-tests were conducted to compare the mean scores of pupils before and after the intervention. This analysis allowed the researchers to examine any significant changes in academic achievement within each group over time as shown in the table below:

Table .6 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
						Lower	Upper			
Pair 1	**Numeracy Midterm Class Pre-Score**	21.5000	52	10.93919	2.58052	22.77075	33.19079	10.782	51	.000
	Numeracy post score	53.4167	52	6.31676	1.82349					
Pair 2	**Reading Midterm Class Pre-Score**	30.2500	52	12.34320	2.69715	25.84395	35.96375			
	Reading post Score	59.1667	52	9.81495	2.83333			12.262	51	.000
Pair 3	**Writing Midterm Class Pre -Score**	26.2500	52	14.67594	1.92718	26.52811	35.66420	13.666	51	.000
	Writing score for closer teacher proximity	72.4167	52	9.80221	2.82965					
Grading scale: 0-30 –Needs improvement, 40-50- average, 60-70-very good, 70+ excellent										

Source: primary data 2024.

The paired samples t-test above in table 6, conducted to analyze the effect of teacher- learner proximity on the academic achievement of learners with Attention Deficit Hyperactivity Disorder (ADHD) symptoms in numeracy, reading, and writing. The results showed a significant improvement in academic achievement in all three areas after the intervention. The test revealed small standard error means and 95% confidence intervals that were all positive, indicating a high degree of precision and consistency in the results. The p-values for all three pairs were less than 0.001, indicating a high level of statistical significance. This suggests that the improvement in academic achievement observed after the intervention is not due to chance and that closer teacher proximity had a significant positive impact on learners' achievement. Specifically, the results showed significant improvements in numeracy (p-value = 0.000), reading (p-value = 0.000), and writing (p-value = 0.000).

CORRELATION FINDINGS FOR TEACHER -LEARNER PROXIMITY(TLP) ACADEMIC ACHIVEMENT.

Correlation analyses were performed to investigate the relationship between theTLP intervention and pupil performance in numeracy, reading, and writing. This analysis helped to establish whether there was a significant association between closer teacher proximity and academic scores of learners in numeracy reading and writing.

Table 7.Correlations MATRIXTLP

		CTPCOUNTS	OVERALLCOUNTS
TLPCOUNTS	Pearson Correlation	1	.898**
	Sig. (2-tailed)		.000
	N	52	52
OVER ALL COUNTS (in numeracy, writing and reading)	Pearson Correlation	.898**	1
	Sig. (2-tailed)	.000	
	N	52	52
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: primary data 2024.

From Table 7 above, A correlation matrix reveals a strong positive link between teacher proximity and academic achievement in numeracy, reading, and writing among learners with ADHD symptoms. The correlation coefficient is 0.898, indicating a very high correlation between the two variables, and the p-value of 0.000 indicates statistical significance at the 0.01 level. This suggests that closer teacher proximity has a strong positive effect on academic achievement in these students. The explanation is that closer proximity provides personalized attention and support, allowing teachers to provide additional assistance, guidance, and encouragement. Also closer proximity fosters a positive learning environment, enabling teachers to build stronger relationships and rapport with learners, which can boost motivation, engagement, and confidence.

LINEAR REGRESSION ANALYSIS FOR TEACHER-LEARNER PROXMINTY (TLP) ACADEMIC ACHIVEMENT.

Linear regression analysis was conducted to explore the predictive power of theTLP intervention on pupil achievement. By examining the relationship between the independent variable (TLP intervention) and the

dependent variables (academic scores), the researcher was able to assess the extent to which the intervention influenced pupil performance as shown below:

Table 8.ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.321	1	3.321	209.332	.000[b]
	Residual	.793	50	.016		
	Total	4.114	51			
a. Dependent Variable: OVERALLCOUNT SCORES						
b. Predictors: (Constant), TLPCOUNTS (INDICATORS OF PROXIMITY, FREQUENCY, CONSISTENCE, DURATION).						

Source: primary data 2024.

The results from the regression analysis above in table 8, for Teacher -Learner Proximity(TLP) and the academic achievement of learners with ADHD symptoms show a significant relationship between the two variables. The ANOVA results indicate a significant regression model (F = 209.332, p < 0.001), suggesting that the predictor variable ofTLP counts (indicators of proximity, frequency, consistency, duration) has a strong influence on the overall academic performance.

Table 9.Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.478	.128		11.576	.000
	TLPCOUNTS (PROXIMITY, FREQUENCY,CONSISTENCE,DURATION)	.496	.034	.898	14.468	.000
Dependent Variable: OVERALL COUNTS (SCORES (IN MUMERACY, WRITNG AD READING.						

Source: primary data 2024.

The regression analysis presented above in table 9, showed a significant positive relationship between Teacher -Learner Proximity(TLP) and academic achievement of learners with ADHD symptoms. The study found that asTLP increases, academic achievement also increases. This relationship was statistically significant with a p-value of 0.000, suggesting that it was not due to chance. Previous research supports these findings, as authors such as Jones and Jones (2015) have highlighted the importance of teacher proximity in promoting student engagement and learning. The study highlights the significance of creating inclusive and supportive learning environments for learners with ADHD symptoms, emphasizing the role of teacher proximity in supporting their academc and social-emotional development. By prioritizing teacher proximity and individualized support, educators can enhance the overall well-being and success of these students in school.

COMPARISON OF THE ACADEMIC ACHIEVEMENT SCORES AT PRETEST AND POST TEST. CONTROL GROUP.

The following paired test were done for the control group to compare the scores in numeracy reading and writing skills development at start of the study and at the end of the study the results are presented below.

Table 10. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Paired Differences 95% Confidence Interval of the Difference Upper	T	df	Sig. (2-tailed)
Pair 1	NUMERCAY PRE-SCORE	22.7500	52	10.27021	2.96476	-13.74824	5.24824	-.985	51	.346
	Post Scores Nu	27.0000	52	10.69409	3.08712	-4.10344	19.93677	1.450	51	.175
Pair 2	READING PRE-SCORE	34.0000	52	11.00413	3.17662					
	Post Score Reading 3	26.0833	52	11.54011	3.33134		13.69729	-.090	51	.930
Pair 3	WRITING PRE-SCORE	32.0000	52	14.91796	4.30644	-14.86395				
	Post Scores Writing 3	32.5833	52	10.83310	3.12725					

Source: primary data 2024.

The finding above in table 10 for the control group, which did not receive any intervention, reveal that little to no improvement in numeracy, reading, and writing scores pre and post-intervention. the mean scores for each subject either remained stagnant or showed minimal improvement. in numeracy, there was a slight increase from 22.75 to 27.00, but it was not statistically significant. in reading, there was a decrease from 34.00 to 26.08, with no significant difference. writing scores remained stable, with a slight increase from 32.00 to 32.58, also not statistically significant. these findings suggest that without intervention, children with ADHD symptoms may struggle to improve their academic skills. early intervention and targeted support are crucial for helping these children enhance their academic performance and overall quality of life.

DISCUSSION AND CONCLUSION

Discussion

The concept of teacher proximity has been discussed in various studies focusing on its impact on pupils learning and behavior. For instance, Smith and Brown (2017) emphasized the importance of close teacher-student relationships in fostering a positive learning environment. In the context of learners with ADHD symptoms, the current study adds to the existing literature by demonstrating the significant role of closer teacher proximity in improving academic achievement.

Teachers who are physically closer to learners with ADHD symptoms can provide immediate support, monitor their progress, and intervene promptly when needed. This proximity allows for better communication, understanding of the individual needs of the learners and the establishment of a supportive learning environment.

The regression analysis reaffirms that TLP counts as significant predictors of academic success, indicating that the frequency, duration and consistency of interactions between teachers and learners with ADHD symptoms are crucial factors.

The findings of the regression analysis, correlation and t test all further support the idea that the frequency, duration, and consistency of interactions between teachers and learners with ADHD symptoms are critical

factors in academic success. By maintaining close proximity, teachers can provide the necessary support and intervention to help these learners achieve their academic goals.The results highlight the significance of personalized attention and support from teachers in enhancing academic outcomes for learners with ADHD. By fostering strong relationships and maintaining close interactions with these pupils, educators can create a conducive learning environment that meets the unique needs of students with ADHD.

Conclusions

The study investigated the effect of closer teacher proximity on academic achievement among learners with ADHD symptoms in government primary schools in Wakiso District, Uganda. The study found that the intervention of Teacher -Learner Proximity(TLP) was effective in improving academic achievement in learners with ADHD symptoms. The significant improvement seen in numeracy, reading and writing skills development suggests that this intervention can have a positive impact on various academic and non-academic domains. In contrast, learners in the control group who did not receive the intervention showed stagnant academic achievement. This further confirmed that the improved performance of learners in the experimental group was a direct result of the TLP intervention. Therefore, this study recommends that TLP can be adopted to other learning areas and extended to encompass social and practical skill development among children with ADHD symptoms. Where instructors, teachers, trainers are encouraged to cultivate a close rapport with their learners to facilitate success and overall growth. The findings suggest thatTLP can be an effective educational intervention strategy for promoting academic achievement among learners with ADHD symptoms. Future studies should explore the long-term effects of TLP and its applicability to other educational settings.

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27. UNICEF Uganda Country Office UN House Plot No #17 Kyadondo Road Kampala Uganda Email Address info@uganda.UNICEF.org Phone Number +256-414-346900 Fax Number +256-414-346911 website https://www.unicef.org/uganda.

28. UWEZO Education Network Uganda Limited Liability Partnership Company Registered Number LLP00005 Registered Address Plot No #1210 G.K Road Kampala Uganda Email Address info@uwezo.net Phone Number +256-392212222 Fax Number +256-414266611 website https://www.uwezo.net/