

GENDER DIFFERENCE IN THE PREVALENCE OF LEARNING DISABILITIES AMONG SECONDARY SCHOOL STUDENTS IN KANO STATE: COUNSELING IMPLICATIONS

Abubakar Sadiq Haruna Ph.D, MCASSON

Department of Psychology, Federal University of Education, Kano

Abstract

The study investigated gender difference in the prevalence of Learning Disabilities (LD) among Secondary School Students in Kano State. Descriptive Survey design was employed in which rating scale named, Learning Disabilities Diagnostic Inventory (LDDI) was adapted and used to rate three hundred and eighty four (384) students (63% male and 37% female), drawn from 24 conventional public (50%) and private (50%) secondary schools via multi-stage sampling technique. The population of the study comprised 248,254 students in 404 schools. Three null hypotheses were postulated for the study and t-test statistic was used to analyze the data at 0.05 confidence. Results obtained from the analysis reveal significant difference in the prevalence of LD between male students in public schools and their male counterparts in private schools ($t\text{-cal}=4.690$; $t\text{-crit}=1.676$). Similarly, a significant difference was found among the female students ($t\text{-cal}=7.396$; $t\text{-crit}=1.676$). However, no significant difference was found between male and female students ($t\text{-cal}=0.92$; $t\text{-critical}=1.676$). This implicates that academic and emotional maladjustments may prevail among the students thereby resulting in low self-concepts, frustration and loss of confidence in school system. A major recommendation offered suggests the use of cognitive learning and free association techniques in counselling students with LD.

Keywords: Learning Disabilities; Gender difference; Secondary School Students; Counselling Implications

Introduction

The term learning disabilities (LD) is used to describe people with developmental disorders in academic skills (Haruna and Mayanchi, 2013). Such disorders affect people's ability to either interpret what they see and hear or link information from different parts of the brain. These limitations can show up in many ways; as specific difficulties with spoken and written language, coordination, self-control or attention, which may extend to schoolwork and impede learning (www.Ldonline.org/abcs-infor/articles-infor.html). National Advisory Committee on Handicapped Children [NACHC] (1967) defined learning disabilities (LD) as;

A disorder in one or more of the basic psychological process involved in understanding or in using language spoken or written, which may manifest itself in an imperfect ability to

listen, think, speak, read, write, spell or to do mathematical calculations. The term includes such conditions as perceptual handicap, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, learning or motor handicaps, of mental retardation, environmental, cultural or economic disadvantage. (P. 1 of 3).

The above definition has drawn different interpretations, which resulted in a series of problems that affect theoretical issues in LD. Some of such issues include the following:

- NACHC presented LD as racial disorders. In other words, the wording of the “exclusion” clauses results in the misinterpretation that individuals with learning disabilities cannot be from different cultural and linguistic background.
- In the definition, etiology of LD is not explicitly highlighted. This would therefore be assumed that a standard approach to assessment and remediation exist for those with the problem.
- The definition is limited in its scope as it only recognizes children and adolescents (National Joint Committee on Learning Disabilities [NJCLD] 1990).

A definition that does stress the lifelong impact of LD and its potential effect on multiple aspect of a person’s life was approved by Association for Children and Adult with Learning Disabilities (ACALD). According to Lowry (1990), ACALD in 1986 defined specific learning disabilities as “a chronic condition of presumed neurological origin, which selectively interferes with the development, integration and or demonstration of verbal and non-verbal abilities” (p.4). This definition reflects the theories of Learning disabilities that prevailed. The assumption here is that individuals with LD have difficulty in learning because of some difference in information processing.

Similarly, Adima (1989:57) posited that “learning disabilities is a problem experienced by a person with adequate mental ability, sensory process but who has a limited number of specific defects in perceptual abilities, integrative ability and expressive processes”. Interestingly, the definition though not quite comprehensive but acknowledges that individual with LD have potentials for learning which in one way or the other is suppressed by certain factors. It could be observed that the central feature in all the definitions of LD is a severe discrepancy between academic achievement and intellectual ability. Therefore, a child with specific LD must be one who has the potential to learn but finds it difficult to learn effectively in some areas.

Sequel to the above definitions and misinterpretations contained therein, NJCLD (1990) suggested the following changes in order to simplify and unify the language of the definition.

- The word “generic” was changed to general.

- The term “environmental influence” was changed to extrinsic influences.
- The phrase “social and emotional disturbance” was changed to serious emotional disturbance.
- The word “direct” was deleted.

Thus, NJCLD (1990) presented the following definition of learning disabilities as:

a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in acquisition and use of listening, speaking reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction and may exist with learning disabilities. Although, LD may occur concomitantly with other handicapping conditions (e.g. sensory impairment, mental retardation, serious emotional disturbances) or with extrinsic influences (such as cultural difference insufficient or inappropriate instruction), they are not the result of those condition or influence (P.3).

This definition is being adopted worldwide by several professional organizations. Not only that the definition by NJCLD made a remarkable “U” turn in the history of learning disabilities, it also set the basis for theoretical postulations.

Theories of learning disabilities have been viewed from a variety of perspectives, especially as they relate to events within the learner and his learning components. The behavioural theory views LD as a consequence of poor instruction hence identify three key components of behavioural unit (stimulus, response and reinforcement) as the determinant of Learning disabilities (Bloom, 1978). Proponents of Behavioural theory are of the opinion that what any person in the world can learn, almost all persons can also learn if provided with appropriate prior and current condition of learning.

Another view on the causes of Learning disabilities is that of the theory of maturation, which emphasizes on natural progression and sequential growth and development of the learner’s cognitive abilities (Lerner, 1997). Proponents assert that Learning disabilities may occur if learning is not structured (Plessis 2000). This viewpoint asserts that each capability of an individual rests on and is chronologically and psychologically dependent on all the capabilities below, therefore learning must start at the lower levels of education and then gradually progress to the higher levels. While the maturational theorists hold this view, the Cognitivists opine that disorders in one or more cognitive or psychological processing skills needed for learning can lead to learning disabilities (NJCLD 1990). Such disorders are intrinsic and therefore can interfere with learning abilities (Hammill and Bryant 1998).

A contemporary Neuropsychologist (Fiedorowicz, 1999) however posits that, learning disabilities is caused by subtle disturbances in the brain structures and functions, which may result in neurological dysfunction. Fiedorowicz belief that, learning involves

a high level of cognitive ability, and cognitive ability is a product of a well-developed and functional brain. Therefore, any disturbance in the development of the brain can cause an incredible metamorphosis through a series of extraordinary changes. Sources of the disturbance according to the theorist are environmental events, such as toxin exposure. Although scientists are yet to set up tangible empirical methodology to verify this claim.

Another leading theory is that LD is genetically transmitted (Plomin, 2003). This view posits that, the genetic influences on common learning disabilities are not specific to each disorder. The theory is centered on general problems in the brain, rather than specific genetic or neurological defect. The proponent disputes the idea of LD and opine that such category of people fall at the lower level of cognitive ability.

Learning disabilities can have destructive emotional effects (Learner, 1997). Persistent learning failure can lead to embarrassment and frustration. Studies by Peak, Furbelow and Litman, (1985) showed that youngsters with LD constitute a large percentage of adolescent suicide compared to the general adolescent population in United States. This phenomenon is not unusual in Nigeria and Kano State in particular. Behaviour problem resulting from negative experiences of youngsters with Learning disabilities is on the increase. The strain and frustration of under achieving can cause them to be reluctant to go to school; to play truant. Fighting, maiming, cheating, stealing and experimenting with drugs can also result when children regard themselves as failures (Haruna and Mayanchi, 2013). In a research conducted in 1984 to find out the estimate of pupils with Learning disabilities in relation to primary school-enrolment in Nigeria, a total of 182, 749 out of 17, 906, 745 pupils were identified as learning disabled. Kano State was said to have 15489 cases (Mba, 1986). Although, this estimate is over three decades now, but the figure is quite significant and alarming.

Another research carried out to determine the rate of learning problem in arithmetic among primary school pupils in Oyo Local Government Area of Oyo state, Nigeria showed no significant difference in the performances of male and female pupils in arithmetic test (Giwa, 1996). Similarly, Olanipekum (1996) studied the effect of social skill programs on school achievements of children with moderate learning disabilities in Nigerian schools. The result from the **t-test** indicated a highly significant difference in pre-post test result of moderate learning disabled children in both experimental and control groups. A similar study by Plomin (2003) compared the rate of Learning disabilities in identical and fraternal twins in order to find out the generalist nature of gene that causes it. The result indicated high possibility of identical twins having the same disorders than were the fraternal twins. In order words, genes that affect reading have 70% chances of affecting math's ability.

The gender perspective on learning disabilities was explored by Nass (1993). In a study on cognitive disorders, Nass posits that boys more often than girls are affected by all the cognitive developmental disorders of childhood. She pointed that "differences in the etiology of learning disabilities as well as general sex differences in learning styles in

boys versus girls may explain the male preponderance in the prevalence of learning disabilities” (p. 61). Similarly, Pierangelo, and Giuliani (2006) assert that Boys outnumber girls by about three to one in the LD category.

Okonkwo (2009) studies the prevalence of Maths difficulty among primary school pupils in Fagge Local Government Area, Kano state. The population of the study comprised of 36,241 public primary school pupils (boys=62%; girls=38%) and 6,526 private primary school pupils (boys =56%; girls=44%). Following stratified random sampling technique, a sample size of 384 pupils were rated. Results obtained via percentage showed about 25% (N=96) had difficulty in Maths. Public school pupils recorded more cases (N=62) than the private school (N=34). As for gender dimension, boys had high prevalence (73%) than girls in the public school whereas in private school, it is the reverse. Also boys in the public schools had high cases (77%) of difficulty than boys in the private schools, likewise girls in the public schools showed more difficulty in maths than their likes in the private schools.

Jafar (2011) examined reading difficulty among pupils in Demonstration Primary School of Federal College of Education, Kano. The researcher employed Reading Difficulty Diagnostic Tool (RDDT) to rate 68 pupils purposefully sampled from a population size of 647. The study design was quasi-experimental. Results obtained through t-test statistic showed a significant difference in pre-test and post-test among boys and girls in their reading difficulty.

Several studies reviewed (Mba, 1986; Giwa, 1996; Olanipekun, 1996; Okonkwo 2009; & Jafar, 2011) are those carried out in the southern Nigeria states, and the very few conducted in Kano were on specific learning disabilities. In addition, prior studies have not adequately discerned gender difference in the prevalence of learning disabilities among secondary school students in Kano state. This study is therefore designed to bridge the gap. The following objectives were designed for the study:

- To find out the difference in the prevalence of Learning disabilities between male students in public secondary schools and male students in private secondary schools in Kano State;
- To investigate the difference in the prevalence of learning disabilities between female students in public secondary schools and female students in private secondary schools in Kano state.
- To determine the difference in the prevalence of learning disabilities between male and female students in secondary schools in the state.

To achieve the above objectives, the following null hypotheses were postulated and tested:

- There is no significant difference in the prevalence of learning disabilities between male students in public secondary schools and male students in private secondary schools in Kano state.

-
- There is no significant difference in the prevalence of learning disabilities between female students in public secondary schools and female students in private secondary schools in Kano state.
 - There is no significant difference in the prevalence of learning disabilities between male and female secondary school students in Kano state.

It is hoped that the study would help inform mental health advocates on the need to adjust their activities to reach people who are living with the problem.

Materials and Methods

Descriptive survey design was used in which data collected from a few schools sampled was analyzed (Abdullahi, 2003) in order to determine gender difference in the prevalence of Learning disabilities among secondary school students in Kano State. The population of the study comprised of two hundred and forty eight thousand, two hundred and fifty four (248,254) male (63%) and female (37%) secondary school students distributed among four hundred and four (404) secondary schools in Kano State, as at 2006/2007 session.

A multi-stage sampling technique was employed in the study. This was achieved through a systematic grouping of schools. The schools were first grouped into zones. (i.e. educational zones recognize by the State Ministry of Education) and then into strata (male and female secondary schools). Selection of schools from each zone was based on the appropriateness of the school to the variables contained in the research. Thus, 24 secondary schools were purposively selected with at least one school from each zone. Since the research is concerned with investigating gender difference in the prevalence of LD, equal samples were selected from each stratum, (Bichi, 1997). Consequently, 16 students from each school were selected following random sampling procedure giving a total of 384 students as recommended by Research Advisors (2006). In view of the fact that there were no teachers and clinicians on learning disabilities at the secondary school level in Kano State, a relatively random sampling procedure was employed to select considerably qualified research assistants. Thus a total of 120 raters were selected for the rating. This gave an estimate of five raters per school with one of them selected as team leader. Each team leader coordinated the sampling and rating of the students.

The instrument used for data collection was, the Learning Disabilities Diagnostic Inventory (LDDI) designed by Hammill and Bryant (1998). The inventory was pilot tested via test-retest and a reliability coefficient of 0.82 was estimated using Pearson Product Moment Correlation (PPMCC). The pretested scale was used to identify intrinsic processing disorders and learning disabilities in students between the ages of eight and eighteen. The instrument is made up of six subscales, each for the areas listed in the definition of learning disabilities i.e. listening, speaking, reading, writing, mathematics and reasoning. Each subscale comprised of 15 items. Responses to these items are required on a 9 point scale. The total scores of the responses obtained were rated against percentiles and stanines.

The method used for data collection was the naturalistic observation (Bichi 1997). Professional teachers, form masters and guidance and counsellors, with at least three terms (one session) familiarity with the students were engaged as Research Assistants. The Assistants were led through a pre-rating exercise in order to familiarize them with the items as well as the administration and scoring of LDDI. In each of the 24 schools selected, each rater rated an average of three students for a duration of four weeks. Consequently, a total of 384 inventories were completed. The parameter used in selecting validly completed inventories was based on the age of the students. This is because LDDI recognizes the age limit of 8-18 years (Hammill and Bryant, 1998).

Data Analysis and Hypothesis testing

In this section, the postulated null hypotheses were tested using t-test of independent samples at 0.05 level of confidence.

Hypothesis 1:

There is no significant difference in the prevalence of learning disabilities between male students in public secondary schools and male students in private secondary schools in Kano State.

Table 1: t-test result of difference in the prevalence of LD between male students in public secondary schools and male students in private secondary schools in Kano state (N = 66)

Parameters	N	Mean	SD	SE	df	t-cal	t-crit	P< .05
Male public	47	3.917	1.379	.398				
Male private	19	1.583	0.793	.229	64	4.690	1.676	Significant

The result is significant at P< 0.05. Considering the t-value of this distribution; the critical value of 1.676 would need to significantly exceed the calculated value of 4.690 before the null hypothesis can be accepted. To this end, the H₀1 is rejected. This means that there is a significant difference in the prevalence of learning disabilities between male public secondary school and male private secondary school students in Kano state.

Hypothesis 2:

There is no significant difference in the prevalence of learning disabilities between female students in public secondary schools and female students in private secondary schools in Kano State.

Table 2: t-test result of difference in the prevalence of LD between female students in public secondary schools and female students in private secondary schools in Kano state (N = 79)

Parameters	N	Mean	SD	SE	df	t-cal	t-crit	P< .05
Female public	56	4.667	1.614	.466	77	7.396	1.676	Significant
Female private	23	1.917	0.668	.193				

The result shows that there is a significant difference in the prevalence of LD between female students in public secondary schools and female students in private secondary schools in Kano State. The calculated value of 7.396 is significantly greater than the critical value of 1.676. To this end, null hypothesis 2 is rejected.

Hypothesis 3:

There is no significant difference in the prevalence of learning disabilities between male and female secondary school students in Kano State.

Table 3: t-test result of prevalence of LD between male and female students. (N = 145)

Parameters	N	Mean	SD	SE	df	t-cal	t-crit	P< .05
Male	66	5.5	3.09	.892	143	0.92	1.645	Not Significant
Female	79	6.6	2.31	.668				

The statistical values obtained from the calculation shows that t-value of 0.92 is less than the critical value of 1.645. Therefore, the null hypothesis 3 is hereby upheld. This means that there is no significant difference in the prevalence of learning disabilities between male and female secondary school students in Kano state.

Results and Discussion

Analysis of data on hypothesis one shows a significant difference in the prevalence of learning disabilities between male students in public secondary schools and male students in private secondary schools in Kano state. This finding coincides with that of Okonkwo (2009). In her study on prevalence of maths difficulty, Okonkwo found boys in the public schools to have high cases (77%) of difficulty than boys in the private schools. Although certain extrinsic factors such as poor instructional strategies, environmental differences etc as stated by NJCLD (1990) in its definition of learning disabilities were however not considered by her study.

Analysis on the second hypothesis shows a significant difference in the prevalence of learning disabilities between female students in public secondary schools and female students in private secondary schools. This finding supports that of Okonkwo (2009) and Abdullahi (2010). According to them, girls in the public schools showed more difficulty in specific learning disabilities (maths, writing etc) than their likes in the private schools.

Another interesting finding from the study reveals no significant difference in the prevalence of LD between male and female students. This result concurs with that of Giwa (1996), He investigated the performance of males and females with learning problem in arithmetic and found that no significant difference existed. The finding however deviates from that of Olanipekun (1996) on the effect of social skill programs on school achievement of children with moderate LD in Nigerian schools, in which a significant difference in pre – posttest result among male and female students was found. Also in contrast to the present finding, results obtained from the study on reading difficulty among pupils in Demonstration Primary School of Federal College of Education, Kano by Jafar (2011) showed a significant difference in pre-test and post-test among boys and girls in their reading difficulty.

Counselling Implications

- The prevalence of LD appears to be higher among male students in public secondary schools than their counterparts in the private schools. This implicates that more cases of academic and emotional maladjustment would prevail among male students in the public schools than those in the private schools (Nass, 1993). Mental health counsellors should therefore map out intervention strategies that will cater for the needs of the students.
- Female students in public secondary schools have high prevalence of LD than their likes in the private school implies that more low self-concepts, frustration and loss of confidence in academic systems would prevail among female students in the public schools which eventually may lead to drop out and other social vices (Hammil & Bryant, 1998). Counsellors should come up with viable counselling approaches that can help them overcome their learning difficulties.
- The fact that Learning disabilities has been shown to prevail among male and female students implicates that, LD permeates all facets of the academic and persona-social skills of learning disabled (NJCLD, 1990) secondary school students. While the principles and methods of mental health intervention are, more or less, universal, the learning disabilities context has special features (Learner, 1997). Hence, counsellors should develop programmes to meet the learning needs of secondary school students with learning disabilities.

Conclusion

Based on the findings obtained in the study, it could be concluded that; while the prevalence of learning disabilities was significant, it however does not reveal any significant gender difference among the secondary school students in Kano state. Therefore mental health counsellors should develop appropriate counselling approaches and enable environments that can meet the needs of the students.

Recommendations

The following recommendations are suggested:

- Mental Health Counsellors should implore ‘cognitive learning’ technique of behavioural counselling approach to assist the learning disabled students use their talents to explore their learning environments.
- Counsellors should apply the ‘free association’ technique (as enshrined in the psychoanalytic view point) in counselling female students with LD by letting them verbalize whatever experience they have, especially about shocks relating to academic difficulties, regardless of how irrelevant or objectionable it may be. This will enable the counsellor to show empathic understanding of the problem, thereby encouraging further disclosure by the client.
- Success attributes such as self-awareness, proactivity, perseverance, goal setting etc should be inculcated among male and female students.

References

- ABCs of the LD/ADHD. Available at www.Ldonline.org/abcs-infor/articles-infor.html.
- Abdullahi, M.I (2000). *Research methods*. In T. Adeloye (Ed) *Fundamentals of educational psychology*. Kano: Rainbow Royale publishers.
- Adima, E.E. (1989). *Special education*. Ibadan-Nigeria, N.S.P. educational publisher. among secondary school students in Kano state, Nigeria. Germany: LAP Lambert Academic Publishing and Teaching. Available at <http://www.education.com/reference/article/prevalence-learning-disabilities/>
- Bichi, M., Y. (1997). *Students guide to research methods*. Kano Nigeria: Rimax Computer Services.
- Bloom, B.S. (1978). *New views of the learner: implication for instruction and curriculum*. In Janet, L. *Learning disabilities: theories, diagnosis and teaching strategies*. Boston, New York:: Houghton Mifflin.
- Fiedorowicz, C. (1999). *Neurobiological basis of learning disabilities: An overview*. Retrieved January 19, 2004, from www.LDAC-research
- Giwa, N. (1996). *Learning problem in arithmetic among primary school pupils in Oyo local government area*. In T.C. Obani (Ed), *Current researches in special education*. Ibadan: N.S.P. Educational publisher.
- Hammill, D.D., and Bryant, B.R., (1998). *Learning disabilities diagnosis Inventory*, Austin, TX: PRO-ED.
- Haruna, A.S. & Mayanchi, M.L. (2013). *Learning disabilities: an exploration of its prevalence among secondary school students in Kano state*. Deutschland/Germany: LAP LAMBERT Academic Publishing

- Jafar, M. (2011). An investigation on reading difficulty among pupils in Demonstration primary school, Federal College of Education, Kano. Unpublished Post Graduate Diploma in Education project (PGDE)
- Lerner, J. (1997). *Learning disabilities: Theories, diagnosis and teaching strategies*. Boston, New York: Houghton Mifflin.
- Lowry, C.M. (1990). *Teaching adults with learning disabilities*. Eric Digest, (No. 99). Retrieved January 20, www.ED321156190-00/TeachingAdultswithLearningDisabilities_EricDigestNo_99.htm.
- Mba, P.O. (1986). *Manpower development, equipment/materials and child clinic in Nigeria*. In E.E Adima *special education*. Ibadan: N.S.P. Educational Publisher.
- Nass, R., D. (1993). Sex differences in learning abilities and disabilities. *Annals of Dyslexia* 43(1),
- National Advisory Committee on Handicapped children (1967). *Definition of learning disabilities*. In National Joint Committee on Learning Disabilities, *Issues on definitions*. Retrieved April 24, 2004 from [www. LDonlineNJCLD-LearnigDisabilitiesIssueson.efinition.htm](http://www.LDonlineNJCLD-LearnigDisabilitiesIssueson.efinition.htm).
- National Joint Committee on Learning Disabilities (1990). *Issues on definitions*. Retrieved April 24, 2004 from [www. LDonlineNJCLD-LearnigDisabilitiesIssueson.efinition.htm](http://www.LDonlineNJCLD-LearnigDisabilitiesIssueson.efinition.htm).
- Okonkwo, P. (2009). Prevalence of maths difficulty among primary school pupils in Fagge Local Government Area in Kano state. Unpublished Post graduate Diploma in Education project (PGDE)
- Olanipekun, A.O. (1996). Social skill training and achievement of children with moderate learning difficulties in Nigerian schools. In T.C. Obani (Ed), *Current researches in special education in Nigeria*. Ibadan: N.S.P. Educational publisher.
- Peck, M., Furbelow, N.L. and Litman, R. (1985). *Youth suicide* (Pp 122 – 122). New York: Springer.
- Pierangelo, R. Giuliani, G. (2006). *A Practical Approach to Foundations, Assessment, Diagnosis,*
- Plessis S, D. (2000). What causes learning disabilities? Retrieved January 1, 2001 from www.audiblox2000.com/learnigndisabilities/causeslearningdisabilities.htm
- Plomin, R. (2003). A genetic theory of learning disabilities. Retrieved January 19, 2004, from www.kings%20college%20news.htm