Assessment of Learning Disabilty and Pupils' Perception of Self and School Environment in Public Primary Schools in Cross River State, Nigeria

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Abstract
Guided by two null hypotheses, the aim of this study was to assess learning disabilty and pupils' perception of self and school environmnet in public primary schools in Cross River State, Nigeria. The population of the study was 153,107 primary five pupils. The independent variable was learning disability (delimited to dyslexia, dysgraphia, dyscalculia and dyspraxia) and the dependent variables were pupils' perception of self and perception of school environment). Survey research design was used. Stratified sample technique was deployed to sample 740 primary six pupils in public schools. Data were collected using Assessment of Learning Disabilities and Perception of Self and School Environment Questionnaire (ALDPSSEQ). The hypotheses were tested at .05 alpha level using multiple regression analysis. The results obtained showed that learning disabilities significantly predict primary school pupils' perception of self and school physical environments in Cross River State. From the results, it was concluded that pupils' self and school physical environment perception is a function of their learning disabilities. It was recommended among others that teachers, school psychologists and counsellors should devise deliberate strategies to defeat completely the incidence of learning disabilities among pupils in primary schools.
Keywords: assessment, learning, disability, perception, environment

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Introduction

All over the globe, children grow up largely through schools where they acquire knowledge and skills which equip them for effective economic, political and social role. In passing through schools, there are always differences among them in school learning and social activities. Most children find school and learning very exciting and interesting while some find school learning boring and of little interest, thus they sometimes develop fear or anxiety which intrudes into their abilities to cope adequately. In every class, there are always children who perform excellently and also those who perform below average. Differences in learners' learning and behaviour have long been noticed by early learning theorists like Edward Thorndike and B. F. Skinner who postulated that learning results from learner-environment interaction. So, "the degree and quality of learning a child is capable of, depends on his person, his/her characteristics and the forces in the learning environment and his/her ability" (Isangedighi, 2011). This implies that the personal characteristics a child carries to the learning environment are potent factors in his or her learning and achievement. These personal characteristics include ability and disability.

The school system is concerned about the growth of learners. For that reason, tests and examinations are routinely administered to keep record of how adequately each child grows in school. By requirement, testing covers in addition to learning, ability for such conditions as learning disabilities, interest and perception of school environment. The practice of testing and keeping records on such personal characteristics as ability, perception or characteristics of such conditions as learning disabilities appear virtually not present among Cross River State pupils.

In one of the schools that one of the researchers visited to supervise the teaching of one of her students, she came in contact with a Primary Five pupil who was very sociable, appeared intelligent but each time she was given a task, be it oral or written to accomplish, she would either sweat profusely without uttering a word, or fill her answer sheets with gibberish scribbling and disjointed letters of the alphabet. Amazingly, neither she nor anyone else could decipher such writings. This was quite worrisome, because it was suggestive of a case of a child being ravished by learning disabilities, or obvious inability to find meaning in what goes on in school, thus poor perception of school environment. One was then left wondering as to how many of such cases abound in the Nigerian school system.

A major goal of schooling is the attainment of academic skills. Traditionally, schooling has focused almost exclusively on improving students' skills in reading, writing, and Mathematics (Hymel et al., 2006). This emphasis is not surprising, "as academic achievement is important to future outcomes. Pre-schoolers' knowledge of numbers is a strong predictor of learning more advanced mathematical skills and knowledge of letters and word sounds consistently predicts reading achievement in elementary school" (Duncan et al., 2007). "Students' potential to succeed after secondary school is based largely in part on their academic achievement. Students' grade point average (GPA) in secondary school is a strong predictor of post-secondary grades and completion, which is then predictive of job attainment and performance" (Kuncel et al., 2005).

Conversely, "when students have academic skill deficits that do not respond to classroom instruction, the experience of failure may lead to behaviours such as aggression, classroom disruption, depression, and negative self-attribution" (McIntosh, Horner et al., 2008). "Students with poor academic standing are also more likely to engage in violence and substance abuse during adolescence and are at greater risk of developing symptoms of depression during adolescence" (Herman et al., 2008). Additionally, "poor academic achievement is a strong predictor of school dropout" (McIntosh, Flannery et al., 2008).

Educators especially learning psychologists like Thorndike, Skinner, and Isangedighi are very much aware that such learner characteristics as perception, conditions of learning disabilities, interest and ability do seriously moderate the child's learning and adjustment in school. By implication, teachers who desire to help children learn maximally in school, need records of their test outcomes beyond test scores in the learning of school subjects. Such records would inform them of the type of intervention to effect for the growth of learners.

Learning disability is defined as "a heterogeneous range of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities" (National Joint Committee on Learning Disabilities, 2005). "A learner with a learning disability may demonstrate significant difference between achievement and ability, have average or above average ability or have processing difficulties" (Lerner & Steinberg, 2004). "One may experience significant reading problems (dyslexia) while another may experience no reading problems whatsoever, but has significant difficulties with written expression (dysgraphia), or with mathematical processes (dyscalculia) or manipulative skills (dyspraxia) or two or more of these" (Fleming et al., 2004).

Learning disabilities normally fall into the following major areas: reading, mathematics, written expression and motor dexterity. Some children have problems in only one select academic area, while others may experience difficulties in two or more and may co-occur with other disorders of attention, language and behaviour, but are distinct in how they impact learning (Lerner, 2004). Smith (2004) declared that dysgraphia is receiving increased recognition as a serious problem in the school setting. Orim and Uko (2017) and Department of Special Education, University of Calabar (2015) investigated the prevalence of specific learning disabilities in Calabar Education Zone of Cross River State and reported that "dyslexia was most prevalent with 26%, followed by dyscalculia (18%), dysgraphia (16%) and dyspraxia (15%)".

Biggs (2007) reported that "pupils with learning disabilities perceived themselves to be less capable". Diener and Dweck (2008) also reported that "pupils with dyscalculia are nonchalant during mathematics lessons as they act in a way that shows that they cannot influence the outcome of their learning. This is evidently negative self perception by pupils with dyscalculia, a form of learning disability. The present study indicates that the pupils have better perceptions of themselves, their classroom interaction and their school physical and social environments. It may have been so due to the effort of parents and teachers in helping the pupils to build positive self-concept as Palombo (2001) noted that

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"when teachers and parents remain positive about the pupils and encourage them to success, the pupils' self-perception will be positively affected".

Learning disabilities and perception appear to impinge upon learning. This work is premised on the desire to explore the type of relationships that exist between pupils' learning disabilities, their perception of self and school environment.

Research questions
1.   What is the prevalence of learning disabilities among primary school pupils in Cross River State?
2. What is the perception of primary school pupils in Cross River state of self and school environment?

Hypotheses
Two hypotheses were stated which include:
Ho1: Learning disabilities do not significantly predict primary school pupils' perception of self in Cross River State.
Ho2: Learning disabilities do not significantly predict primary school pupils' perceptions of their school physical environments in Cross River State.

Methodology
The population of this study consisted of all the 153,107 primary five pupils in the 1,157 public primary schools in Cross River State, during the 2021/2022 school year (Cross River State Universal Basic Education Board, 2022). The pupils are spread across all primary schools in the urban and rural areas of the 18 Local Government Areas of Cross River State. The are 153,107 pupils; 74,573 are males while 78,534 are females.

In this study, the stratified random sampling technique was used for sample selection. This was done to ensure representativeness of the sample. First, Cross River State was stratified on the basis of its three Education Zones, namely Calabar, Ikom and Ogoja. Each Education Zone had its own Local Education Authorities (LEA). 20% of the LEAs were randomly selected for the study. In the selection of LEAs, 20% of the primary schools were selected for the study. This resulted in the selection of a total of 58 primary schools in Cross River State for the study. In each schools, 15% of its primary five pupils were randomly selected. This resulted in the selection of a total of 820 primary five pupils. The sample for this study was made up of 820 Primary 5 pupils (397 males and 423 females).

An instrument titled Learning Disabilities and Perception Battery (LDPB) was used for data collection. The instrument, LDPB, has three sections labelled Part I to III that measures personal charaterisrics, learning disabilities and perception of self and school environment. Learning disabilities was in four sections: Section A is a five item scale that measured the respondents' reading disorder labelled Dyslexia. Section B also had five items that measured the respondents' handwriting disorder labelled Dysgraphia. Section C on the other hand measured Arithmetic disorder labelled Dyscalculia. Section D also had five items that measured the respondents' fine motor deficit labelled Dyspraxia.

Part III was a four point-item Likert-type scale measuring pupils' perception of self. The scale has four sections labelled i) to iv) (Academic, physical, social and moral). Each of section i) to iii) has four subsections labelled A to D, with two items for each subsection; while section vi) of Part III has no subsection but with six items. To establish the reliability, a trial test was carried out using a sample of 50 pupils randomly selected from a school in the study area. This school was not part of the main study. The Cronbach alpha statistics was used to determine the reliability. The reliability estimates ranged from .71 to .78.

The researchers personally visited each of the sampled schools and with the permission of the head teacher, assembled the pupils selected for the study in a classroom, and administered the copies of the questionnaire to them. Privacy and confidentiality of responses obtained was assured. After collecting the questionnaire, codes/score were assigned to each item. For smooth data preparation, a coding schedule was prepared by developing a key for each of the constructs of the instrument. The questionnaire was scored on four point scale of SA, A, D, SD (4, 3, 2, 1). The scoring was reversed on negatively worded items (1, 2, 3, 4 for SA, A, D, SD).

The methods of analyses applied in this study depended on the individual research questions and hypotheses. Descriptive statistics (simple percentages) and Multiple Regression analysis were used as applicable to answer the research questions and test the hypotheses at .05 level of significance.

Presentation of results

Research question one: What is the prevalence of learning disabilities among primary school pupils in Cross River State?

The results obtained showing the prevalence of learning disabilities among primary school pupils in Cross River State in data analysed as presented in table 1 showed that with regards to dyslexia; 31.1%, 17.4% and 51.5% of the male participants, and 29.2%, 22.3% and 48.5% of the female participants were respectively low, moderate and high. About 30.1%, 20.1% and 49.9% of total group were respectively low, moderate and high. With regard to dysgraphia, 70.1%, 19.8% and 10.1% of the male respondents, and 69.8%, 19.6% and 10.6% of the female participants were respectively low, moderate and high. For total group, 69.9%, 19.7% and 10.4% were respectively low, moderate and high.

As regards dyscalculia, 15.2%, 20.7% and 64.0% of the male respondents, and 13.9%, 18.8% and 67.3% of the female respondents, were respectively low, moderate and high. While for the total group, 14.5%, 19.7% and 65.8% of the sample were respectively low, moderate and high. The results further showed that with regard to dyspraxia, 6.4%, 13.7% and 79.9% of the male respondents, and 10.1%, 13.6% and 76.2% of the female respondents, were respectively low, moderate and high. For the total group of the respondents, 8.5%, 13.7% and 77.9% were respectively low, moderate and high in that learning disability.

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Table 1: Prevalence of learning disabilities among primary school pupils in Cross River State

Variables	Sex	N	Levels of the study variables		
			Low %	Moderate %	High %
Dyslexia	Male	328	31.1	17.4	51.5
	Female	404	29.2	22.3	48.5
	Total	732	30.1	20.1	49.9
Dysgraphia	Male	328	70.1	19.8	10.1
	Female	404	69.8	19.6	10.6
	Total	732	69.9	19.7	10.4
Dyscalculia	Male	328	15.2	20.7	64.0
	Female	404	13.9	18.8	67.3
	Total	732	14.5	19.7	65.8
Dyspraxia	Male	328	6.4	13.7	79.9
	Female	404	10.1	13.6	76.2
	Total	732	8.5	13.7	77.9
Overall learning disabilities	Male	328	23.2	38.4	38.4
	Female	404	21.8	39.6	38.6
	Total	732	22.4	39.1	38.5

Furthermore, the overall learning disabilities, 23.2%, 38.4% and 38.4% of the male respondents, and 21.8%, 39.6% and 38.6% of the female respondents, were respectively low, moderate and high. Moreover, about 22.4%, 39.1% and 38.5% of all subjects were respectively low, moderate and high. Apparently, of all the learning disabilities captured in the study, dyspraxia was most prevalent among the respondents, followed by dyscalculia, dyslexia and dysgraphia in descending order.

Research question 2: What is the perception of primary school pupils in Cross River state of self and school environment?

The results showing the perceptions of themselves and their school environment as presented in table 2 indicate that the perception of self have values of 0%, 73.5% and 26.5% of the male pupils exhibit low, moderate and high respectively in their level of self perception while 0%, 70.5% and 29.5% of the female participants exhibit low, moderate and high respectively in their level of self perception, and 0%, 71.9% and 28.1% of the pupils were low, moderate and high respectively in their level of self perception. The results also showed that as regards perception of school physical environments, 5.8%, 85.7% and 8.5% of the male participants exhibit low, moderate and high respectively in their level of perception of school physical environments while 1.7%, 87.1% and 11.1% of the female respondents exhibit low, moderate and high respectively in their level of perception of school physical environments, and 3.6%, 86.5% and 10.0% of the pupils

were respectively low, moderate and high in their level of perception of school physical environments**.**

Furthermore, the perception of school social environments as presented in table 2 shows that 1.2%, 79.3% and 19.5% of the male respondents exhibit low, moderate and high respectively in their level of perception of school social environments while 0.2%, 73.5% and 26.2% of the female respondents exhibit low, moderate and high respectively in their level of perception of school social environments, and 0.7%, 76.1% and 23.2% of the pupils were respectively low, moderate and high in their level of perception of school social environments. The results further showed that with regard to perception of classroom instruction, 1.5%, 65.2% and 33.2% of the male participants exhibit low, moderate and high respectively in their level of perception of classroom instruction while 1.7%, 59.7% and 38.6% of the female participants exhibit low, moderate and high respectively in their level of perception of classroom instruction, and 1.6%, 62.2% and 36.2% the pupils were respectively low, moderate and high in their level of perception of classroom instruction.

Table 2: Perceptions of self and school environment

Variables	Sex	N	Levels of the study variables		
			Low %	Moderate %	High %
Self perception	Male	328	.0	73.5	26.5
	Female	404	.0	70.5	29.5
	Total	732	.0	71.9	28.1
Perception of school physical environments	Male	328	5.8	85.7	8.5
	Female	404	1.7	87.1	11.1
	Total	732	3.6	86.5	10.0
Perception of school social environments	Male	328	1.2	79.3	19.5
	Female	404	0.2	73.5	26.2
	Total	732	0.7	76.1	23.2
Perception of classroom instruction	Male	328	1.5	65.2	33.2
	Female	404	1.7	59.7	38.6
	Total	732	1.6	62.2	36.2
Overall perception of school environment	Male	328	2.83	76.73	20.40
	Female	404	1.80	73.43	25.30
	Total	732	1.97	74.93	23.13

The results finally showed that with regard to overall perception of school environment, 2.8%, 76.7% and 20.4% of the male respondents were respectively low, moderate and high and 1.8%, 73.4% and 25.3% of the female respondents were respectively low, moderate and high and 2.0%, 74.9% and 23.1% of all the participants were respectively low, moderate and high. The result on how pupils perceived themselves, their classroom instruction and their school physical and social environment presented in table 2 shows that, the pupils were moderately affected by their perception of the school physical

environments with 86.5%; followed by perception of school social environments with 76.1% of the participants; then overall perception of school environment with 74.9% the participants; followed by self-perception with 71.9% of the participants and finally, perception of classroom instruction with 62.2% of the participants. The results showed that the pupils have good and positive perceptions of all the sub-variables of the perception variable including their perception of self, their classroom instruction and their school physical and social environments.

Ho1: Learning disabilities do not significantly predict primary school pupils' perception of self in Cross River State.

The results of the multiple regression analysis presented in table 3 showed that the combined contributions of the learning diabilities in predicting primary school pupils' perception of self produced an R coefficient of .254; and an adjusted (standardized) multiple R-square (R^2) of .060. The result further showed that out of the five variables, three of them; dyslexia (Beta = -.177), dysgraphia (Beta = -.103) and overall learning disabilities (Beta = .170) significantly predicted the pupils' perception of themselves, while dyscalculia (Beta = -.068) and dyspraxia (Beta = .031) did not significantly predict the pupils' self-perception. The negative Beta values indicated that dyslexia, dysgraphia and dyscalculia inversely predicted the pupils' self-perception while dyspraxia and overall learning disabilities directly predicted pupils' self-perception.

Table 3: Multiple regression analysis showing the prediction of learning disabilities on primary school pupils' perception of self in Cross RiverState

Multiple R	=	.254
Multiple R^2	=	.065
Multiple R^2 (Adjusted)	=	.060
Standard Error of Estimation =	2.605	

Variables	B	Std. Error	Beta	t-value	p-level
(Constant)	25.419	.437		58.189*	.000
Dyslexia	-.327	.077	-.177	-4.219*	.000
Dysgraphia	-.339	.129	-.103	-2.627*	.009
Dyscalculia	-.130	.080	-.068	-1.621	1.06
Dyspraxia	.072	.099	.031	.728	.467
Overall learning disabilities	-.399	.137	.170	2.909*	.000

*Significant at .05 level of significance; p<.05.
Dependent variable: Primary school pupils' perception of self.

Ho2: Learning disabilities do not significantly predict primary school pupils' perceptions of their school physical environments in Cross River State.

The result obtained in hypothesis 2 shows that learning disabilities do not significantly predict primary school pupils' perceptions of their school physical environments in Cross River State. The results of the multiple regression analysis presented in table 4 shows that

the combined contributions of the learning disabilities in predicting pupils' perception of school physical environment produced an R coefficient of .220; and an adjusted (standardized) multiple R-square (R^2) of .043.

The adjusted multiple R-square (R^2) of .043 implies that when the independent variables were taken together, they accounted for 4.3% of the total variance in the participants' perception of school physical environment. The result further showed that out of the five variables, three of them, dysgraphia (Beta = -.122), dyscalculia (Beta = .205) and dyspraxia (Beta = -.119), significantly predict the pupils' perception of their school physical environment; while dyslexia (Beta = .037) and overall learning disabilities (Beta = .088) did not significantly predict the pupils' perception of their school physical environment. The negative Beta values indicated that dysgraphia and dyspraxia had inversely predicted the pupils' perception of their school physical environments while dyslexia, dyscalculia and overall learning disabilities directly predicted the pupils' perception of their school physical environments.

Table 4: Multiple regression analysis showing the prediction of learning disabilities on primary school pupils' perception of school physical environment in Cross River State

Multiple R		=	.220		
Multiple R^2		=	.049		
Multiple R^2 (Adjusted)		=	.043		
Standard Error of Estimation =		2.857			

Variables	B	Std. Error	Beta	t-value	p-level
(Constant)	21.942	.479		45.786	.000
Dyslexia	.074	.085	.037	.866	.387
Dysgraphia	-.441	.142	-.122	-3.109*	.002
Dyscalculia	.428	.088	.205	4.854*	.000
Dyspraxia	-.302	.109	-.119	-2.783*	.006
Overall learning disabilities	.074	.085	.088	.853	.396

*Significant at .05 level of significance; $p<.05$.
Dependent variable: Primary school pupils' perception of school physical environment.

Discussion of the findings
On prevalence, the study results showed that of the four learning disabilities observed, dyspraxia was the most prevalent highly affecting 77.9% of the children; followed by dyscalculia that highly affected 65.8% of the participants; then dyslexia that highly affected 49.9% and finally, dysgraphia that highly affected 10.4% of the participants. Finally, learning disabilities affected 38.4% of the males, 38.6% of the females and 38.5% the total group. This implies that learning disabilities is slightly prevalent among the females than the males. This finding agrees with Smith (2004) that "dysgraphia is receiving increased recognition as a serious problem in the school setting". The finding is however at variance with the findings of Orim and Uko (2017) who investigated the prevalence of specific learning disabilities in Calabar Education Zone of Cross River State and reported that "dyslexia was most prevalent with 26%, followed by dyscalculia (18%), dysgraphia (16%) and dyspraxia (15%)". Similarly, Department of Special Education, University of Calabar reported that "prevalence of learning disabilities in Calabar

metropolis was 35% for dyslexia, 25% for dyscalculia, 15% for dysgraphia and 10% for dyspraxia. In both previous studies, dysgraphia was ranked third in prevalence, but the present finding indicated dysgraphia had the highest prevalence. It is important to note that the two previous studies were conducted in the same setting which is different from the setting of the present study. The difference in findings may be as a result of the different settings. It might be that the school system where the study was carried out was not engaging the pupils adequately with respect to writing thus not providing them with adequate opportunities to practice the art.

On perception of self, the findings indicate that learning disabilities significantly predict primary school pupils' perceptions of self in Cross River State. This finding is in line with that of Biggs (2007) who reported that "pupils with learning disabilities perceived themselves to be less capable". It also agreed with the finding of Diener and Dweck (2008) who reported that pupils with dyscalculia are nonchalant during mathematics lessons as they act in a way that shows that they cannot influence the outcome of their learning. This is evidently negative self perception by pupils with dyscalculia, a form of learning disability. The present study indicates that the pupils have better perceptions of themselves, their classroom interaction and their school physical and social environments. It may have been so due to the effort of parents and teachers in helping the pupils to build positive self-concept as Palombo (2001) noted that when teachers and parents remain positive about the pupils and encourage them to success, the pupils' self-perception will be positively affected.

The finding from the second hypothesis indicates that learning disabilities significantly predict primary school pupils' perceptions of school physical environment in Cross River State. This implies that pupils with learning disabilities perceived school differently from normal pupils. The finding is in line with Kuncel et al. (2005) who discovered that students' potential to succeed after secondary school is based largely in part on their academic achievement. Students' grade point average (GPA) in secondary school is a strong predictor of post-secondary grades and completion, which is then predictive of job attainment and performance

Conclusion
This study was focused on establishing if learning disabilities are prevalent among primary school pupils in Cross River State, and if they are predictive of individual self-perception and perceptions of their school physical and social environments, as well as perception of their classroom instruction. It can be deduced from these findings that the pupils' self-perception is a function of their learning disabilities, which also implies that such self-perception depend on learning disabilities. However, the findings of the study also indicated that the perceptions of the pupils with respect to their school physical and social environments and their classroom instruction are influenced by learning disabilities.

Recommendations
Taking cognizance of the findings of this study, the following recommendations were made to the different stakeholders in the education process to improve the overall outcome of education:

1. Teachers, school psychologists and counsellors should devise deliberate strategies to defeat completely the incidence of learning disabilities among pupils in primary schools.

2. Teachers, parents and other stakeholders in the education sector should expose the pupils to programmes aimed at boosting their positive self-perception. This would enhance their self-esteem with its multiplicity of advantages to the pupils.

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