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Effects of cognitive styles on the academic performance of primary school pupils with aphasia in Sokoto State, Nigeria

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ABSTRACT

The manner and ways in which learners perceive and internalize information have been the subject of discussion by many scholars. This paper investigated the effects cognitive styles had on the academic performance of primary school pupils with aphasia in Sokoto State, Nigeria. A correlation research design was used in the conduct of the study. The population used for the study covered all primary school pupils in Sokoto state which numbered 706,064 and the study drew its sample using four stages of sampling. Primary four pupils numbering (9,369) in 63 primary schools that had symptoms of Aphasia were handpicked using a sampling technique called purposive before subjecting them to screening using the Language Screening Test and a total of 69 pupils were screened as aphasic across nine (9) Local Education Authorities from the three (3) educational zones of Sokoto State. The adapted version of the Language Screening Test, Group Embedded Figure Test, and Academic Performance Test designed by the researchers were the instruments used for data collection. The data collected was analyzed using PPMC. Instruments used for the study were validated by the developers and designers of the standardized instruments while academic performance test was validated using assessment and corrections by experts and they were found to have a face and content validity. The reliability of the instruments was realized using test-retest techniques, the correlation index found were, (0.71), (0.77), and (0.80). Findings of the research indicated that; there existed a positive, strong, and significant connection and the relationship between cognitive styles (field dependent) and academic outcomes/performance as well as a negative, weak, and insignificant relationship existed between cognitive styles (field-independent) and academic performance. It was concluded that children with Aphasia have language and communication disorder that affected their expressive and receptive language abilities, and the repetition of phrases and words. The researchers recommended that effort should always be made by teachers to identify pupils with aphasia in their classes whose mode of perceiving and processing information is holistic and global toward problems and match it with an individualistic and self-directed teaching approach in a well-structured learning environment.

Keywords: Academic performance, Aphasia, Cognitive styles, Field dependent, Field independent

1. INTRODUCTION

The mode and ways in which learners perceive, process, organize, analyze and classify information as well as solve problems is referred to as cognitive styles. The question people and parents asked is whether children with Aphasia or learning disabilities have peculiar cognitive styles due to their disorder. Are children with aphasia having peculiar cognitive styles, learning approaches and learning strategies? To bridge the missing gaps as well as to find out the cognitive styles of aphasic learners and their effects on academic performance motivated the researchers to conduct this study. Academic performance is influenced by a number of factors; some are related to the teachers, school supervision, and nature of the school plant, nature of the learning experience and the abilities of learners. Could the rate of poor academic performance be as a result of poor mental and physical health of the learner or learning disabilities such as Aphasia or inability of learners to perceive and process learning experience effectively and efficiently? Inability to find exact answers to these questions motivated the researchers to select the topic under study.

Aphasic individuals experience persistent verbal memory impairment and communication difficulties that directly or indirectly affect their ability to actively participate in marital, educational, vocational, and social life. Aphasia is a communication disorder that relates to a person's inability to use, produce and understand language to express one's feeling, read and write which mostly become discernible when auditory memory, auditory perception, expression, and comprehension is impaired (Johansso, 2012). Aphasia is a language and communication disorder that happens as a result of damage to the part of the brain that controls language organization and coordination. The damage to the part of the brain may happen as a result of an accident, brain tumor or stroke, and other neurological diseases (National Institute o Deafness and other Communication Disorders, 2015).

The symptoms of aphasic individuals vary in severity and level from person to person based on the part of the brain that suffered from damage due to stroke, brain tumor, head injury, and neurological disease. Ahlen (2006) maintained that aphasia affects a person's language and ability to communicate; it includes deficits in morphological, phonological, syntactical, lexical, literal paraphasia, pragmatic, preservation, agrammatism, changing, omission or substitution of important words, grammatical morphemes, and syntax. Cognitive style is being viewed as a unique attribute of an individual to perceive, organize, manage and process information acquired from the environment (Wang, 2008). Different scholars have classified cognitive styles based on their viewpoints and understanding of the concept. Cognitive styles may be distinguished from one another in many ways but the most important difference between them is the way people perceive and reproduce the information (input-output patterns).

Different categories of cognitive styles exist and some of them are, Scanning-Focusing, Verbalizer-Visualizer, Deep elaborative-Shallow reiterative, Holist-Surrealist, Divergent-Convergent, Field dependent-Field independence, Holist/Analyst-Verbal imager, Global-Analytical, Cognitive Complexity-Cognitive simplicity, Impulsive-Reflective, Simultaneous-Successive, Leveler-Sharpener, Objective-Non-objective, Organizer-Non organizer, Right–Left brained, Sensitizer– repressors, Verbalizer-Imager (Shi, 2011). Field independence learners are better at learning abstract subjects, they have sequential abilities that enable them to perceive information easily, break up organized perceptual fields, analyze things critically, articulate their experience, and prefer to be individualistic. Field dependence learners are the opposites of the field independence types. They have holistic and global approaches toward problems and have global perceptions. They have high social orientation, social interest, and favor structure and are easily influenced by negative reinforcement.

The question of whether cognitive styles and academic performance are related to each other either positively or negatively motivated the researchers to conduct this study. The researchers' attention was also captured based on the inability of people to exactly identify the relationship between the potential and actual learning outcomes of aphasic learners, and how they remember, select, compare, focus, reflect and analyze information.

Studies were conducted by other researchers which relate to the topic under study. Restagar (2016) stated that Keogh and Donlon conducted a study on males with a series of behavioral and learning disorder. The result showed that field-independent and impulsive cognitive styles were found to be more with males having learning disorder than their female counterparts. They investigated the difficulties faced by learning disabled children in order to perceive information as a result of emotional instability, impulsiveness, and distractibility which made them be categorized as field-dependent, namely RFT and EFT. Many learning-disabled children have been identified to be hyperactive, impulsive and inattentive when acquiring learning experiences. This consequently made them to be categorized as those having attention deficit and hyperactive disorder (ADHD). Silver maintained that, children with learning disability that have ADHD are between 20% - 37% while, 10% to 29% of children with ADHD may have learning disability (Esther, 2005).

2. STATEMENT OF THE PROBLEM

Primary school pupils with aphasia have difficulty in reading, writing, using, and understanding expressive and comprehensive language. Pupils with aphasia have been observed by the researchers to have difficulty in expressing themselves, which mostly lead to the use of made-up words, wrong putting of words in sentences and changing of sound with words. Parents, teachers and stakeholders of education continued to show concern over the inability of most primary school pupils with aphasia to read, write, and have good academic

performance. This called for searching for the possible solution to these problems. In an attempt to figure out the possible causes and problems facing children with aphasia, the researchers surveyed some primary schools and identified pupils with aphasia using Language Screening Test (LAST).

Most of the teachers consulted and interviewed by the researchers in Sokoto metropolis don't use teaching strategies and styles that help in identifying depressive mood, poor cognitive functioning and difficulty in using and understanding language (reading and writing) which are mostly attributed to aphasia. This difficulty most often makes the pupils underachievers academically and drop out of school, as a result of being absent from school and coming to school late. The researchers were motivated to undertake this to address the unsatisfactory state of affairs. Many educationists and researchers did not focus their attention on aphasia and cognitive styles, their nature, characteristics and effects on the academic performance of children.

2.1. Objectives

The writers formulated the following objectives to direct and guide the study:

1. Find out the relationship between cognitive styles (Field dependent) and academic performance.
2. Find out the relationship between cognitive styles (Field independent) and academic performance.

2.2. Questions

The writers formulated the following research questions to guide and direct the study.

1. Does a relationship exist between cognitive styles (Field dependent) and academic performance?
2. Does a relationship exist between cognitive styles (Field independent) and academic performance?

2.3. Hypothesis

The null hypotheses for the study were:

1. There is no significant relationship between Field dependent cognitive styles and academic performance of primary school pupils with Aphasia in Sokoto state.
2. There is no significant relationship between Field independent cognitive styles and academic performance of primary school pupils with Aphasia in Sokoto state.

3. THEORETICAL FRAMEWORK

Witkin's field dependent-independent cognitive styles theory of cognitive styles and Dual Stream theoretical model of vision processing (Aphasia) are taken as the theoretical framework of this paper.

3.1. Field Dependence–Independence Theory of Cognitive Style (Witkins)

Witkins proposed the dependence–independence theory as a measure of cognitive styles in the 1950s and 1960s. Witkin's (1974) has shown that a person whose ways and manner of perceiving information are dominated by the surrounding environment and field is said to be leaning toward a field-dependent cognitive style, while those that go beyond the surrounding environment by exploring other sources of information are termed as field independence learners. Witkin (1974) maintained that the surrounding environment within which the individual finds himself/herself influences the way he/she perceives information, and uses intellectual ability and personality.

Field-dependent learners always wait for teachers to tell them what to do, like interacting with other people, and are socially oriented. They perceive information and the world in a holistic manner and consider externally defined goals as a guide towards solving their problems. Field independent learners perceive and understand the information in an analytic pattern. They prefer study habits and strategies that are independent and always isolate themselves. Aphasic individuals due to their disability and language disorder are found to have field-dependent cognitive styles, but the researchers want to find out if there are exceptional cases where Aphasic children can have field-independent cognitive styles.

3.2. Dual Stream Theoretical Model of Vision Processing (Aphasia)

Hickok and Poeppel (2007) proposed the theoretical model of vision processing to explain the cortical organization of language. Speech processing is being viewed as any word or statement analyzed, synthesized, and processed involving an aurally preserved word. Speech perceptions denote one's ability to absorb, store

and understand information or task while speech recognition is the ability to transform uttered words and acoustic signals into a representation that can be understood and accessed by mental faculties and lexicons. Vision processing is of two types, namely a ventral stream and a dorsal stream. A ventral stream dominates the inferior temporal areas of the brain and is responsible for object identity. Speech signals for comprehension and understanding, parallel processing of information, and mapping sound into meaning are done by the ventral stream (Donna, John & Argye, 2014).

A dorsal stream is found in the parietal area of the brain and it processes object location in the environment. The main function of the dorsal stream is to integrate visual input and motor response in one place as well as facilitate reaching and holding objects and other things in visual space (Hickock, 2009). Damage to the dorsal temporal and frontal lube of the brain leads to a deficit in speech processing which consequently leads to aphasia.

4. RESEARCH METHODOLOGY

This study made use of a correlational research design to find out the effect of cognitive styles on academic performance. The population used for this study covered all primary school children in Sokoto State. There are 2,008 primary schools in Sokoto State across the 23 Local Government Areas, with a population of 685,755 pupils (Males; 430,888 and Females; 254,867) (Sokoto state Universal Basic Education Board, 2019).

The sample for this study was drawn using multi-stage sampling and using four (4) stages. Firstly, the primary schools in the state were divided into three Educational zones using stratified sampling techniques (Sokoto North Educational zone, Sokoto East Educational zone, and Sokoto South Educational zone). Sokoto North Educational zone has 7 Local Government Education Authorities (LGEAs), Sokoto East Educational zone has 8 LGEAs, while Sokoto South Educational zone has 8 LGEAs, making a total of (23) Twenty Three Local Education Authorities.

The study used a purposive sampling technique in selecting three Local Education Authorities so as to make sure that all local governments that are close and far away from the Sokoto metropolis were selected for the study. Sokoto North Senatorial District (Wurno, Gwadabawa and Goronyo,) Sokoto East Senatorial District (Sokoto North, Sokoto South and Kware Local Governments) and Sokoto South Senatorial District (Bodinga, Tureta and Dange shuni Local Governments) were selected. The sampling technique that was employed to choose seven (7) primary schools from each local education authority was simple random sampling, arriving at 63 primary schools. A total of 69 pupils representing 0.74 percent of 9.369 primary four pupils in the 63 primary schools were screened and found to have aphasia.

Finally, the researchers delimited the study to primary four pupils; out of a total population of primary (4) four pupils (9,369) and 69 pupils were screened using Language Screening Test to identify aphasic children. However, the sampling technique used to handpick children with symptoms of aphasia was purposive and later on they were subjected to screening using Language Screening Test.

4.1. Instrumentation

The instruments used for data collection are described below;

1. Language screening test (LAST) to screen and identify aphasic pupils (Adapted version of the instrument) developed by Flamand-Roze (Flamand-Roze et al., 2011).
2. Group Embedded Figures Test to identify field dependence/independence cognitive styles (Adapted version of the instrument) (Witkins, Oltman & Rasin, 1971).
3. Academic Performance Test for aphasic children in Sokoto state to measure academic performance in English and Mathematics (Researchers' designed instrument)

The original validities of the instruments used (standardized) were found by the originators of the instruments, while the validity of the self-designed instrument was found using experts' assessment and corrections at Usmanu Danfodiyo University, Sokoto, Nigeria. The test-retest method of testing reliability was used to find how reliable the instruments were. The original reliabilities of the instruments were found by the developers of the instruments.

4.2. Language screening test (Aphasia)

A language screening test was developed by Flamand-Roze et al, in the year (2011) to screen individuals with learning disabilities, especially aphasic individuals. This is a bedside screening test used in emergency situations and it is fast and simple. The test is being adapted for this test to screen Aphasic children. The test consists of 15 items subtests for screening comprehension and expression. Ten seconds were given to children to answer one question at a time and the answer was scored either 1 (correct) or 0 (wrong). The highest points were fifteen points. Two subscales found in the instrument were the expressive index which consisted of items related to the naming of things, repetition of words or statements, and automatic speech with the highest point of eight and the receptive index was the second part that consisted of items related to recognition of picture and attending to instruction that was verbal. The highest point was seven. Any mark less than ten (10) showed the presence of Aphasia and vice versa.

Validity of Language Screening Test - Language Screening Test (LAST) was validated by comparing (LAST A and LAST B) equivalent forms of the instrument to test and measure their internal validity, while the Language Screening Test was compared with Boston Diagnostic Aphasia examination scale and inter-rater reliability to examine the external validity of the test. After applying the test on Fifty-four chronic aphasic patients, it showed that the two different versions were equivalent while, after applying the test on acute patients, the finding showed no restriction between items as shown by PPMC co-efficient less than 0.8. Parallel analysis showed internal consistency of the fifteen points items when compared with a Cronbach of 0.88 (Flamand-Roze et al., 2011).

The reliability of the **Language Screening Test (LAST)** was also found by comparing Last A and B, after pooling the two versions of the test for analysis and it showed no floor effect. There was no reduction between the items after subjecting them to PPMC and a correlation coefficient realized was <0.8, (Salehi et al., 2016). The researchers re-established the reliability of the Language screening test. The pupils were first screened using a language screening test to find out whether they were aphasic or not. A language screening test is a bedside aphasia screening test which can be used by students and people that are not working in the health sector. The pupils were screened in the two schools and finally, 3 pupils were found to be aphasic at Gagi primary school, while 4 pupils were found in Tafida Aminu primary school Sokoto. The remaining pupils displayed characteristics of those suffering from autism, stuttering, or stammering. A language screening test (LAST) was administered on the pupils and re-administered after an interval of two weeks to ascertain the level of its reliability. The two administrations yielded a spearman correlation coefficient index of 0.71.

4.3. Group Embedded Figures Test (Cognitive styles)

Group Embedded Figures Test was developed by Witkins et al. (1971) to measure field dependence/independence cognitive styles (Normand & Rostampour, 2014). This test was adapted for this study. The test consists of three sections, section one contains two complex figures for practice, while sections two and three contained nine (9) complex figures each, making a total of eighteen complex (18) figures. Students were given GEFT booklet requiring on the front page information such as the name, age and sex of the respondents, responses in the test were graded right (1 mark) or wrong (0 mark) (Kalgo, 1993).

In this study, the following scoring was used to classify the children: The scores on GEFT may range from 0 to 18 (Field dependent to Field Independent). Those students/pupils who scored above twelve (12) out of eighteen (18) were taken to be field independent while those who scored eleven (11) and less were adjudged field-dependent students/pupils (Khatib,2011). Group embedded figure test is a paper and pencil test where subjects are required to trace a simple figures in the first page (8 figures A-H) in a complex figure which are in the same size, proportion and direction, two minutes is allowed for practice and time allowed for tracing figure is 20 minutes.

The Group Embedded Figure Test (GEFT) was used on class 6 students comprising of nine boys and thirteen girls. The children were screened using a frame test and portable Rod on the spot and after an interval of two weeks; the two instruments were reapplied on the GEFT long term coefficient of stability of 0.80 and 0.71 respectively. Consequently, the instruments were found to have construct and concurrent validity of 0.60 and 0.00 respectively for the six boys and the thirteen girls respectively (Lis & Power, 1979).

However, when finding out the reliability of GEFT, some scholars like Weirsman, in Ramlah and Jantan (2014), maintained that, the Cronbach Alpha for GEFT was 0.88. Witkin et al., (1971) reported a reliability

estimate of 0.82 obtained using Spearman correlation and reliability co-efficient of 0.83. Data generated from a pilot study with fifty-five (55) Junior Secondary School (3) - JSS 3 - students of Community High School Amorka, In Enugu State, Nigeria, yielded reliability co-efficient of 0.80 on GEFT (Ndukaihu, 2010). The instrument was pilot tested using test retest method of establishing reliability in two schools of the study area. A correlation coefficient of 0.77 was realized.

4.4. Academic Performance Test for Aphasic Children in Sokoto State

This is a researcher's designed test consisting of twenty five English questions and twenty five mathematics tests derived from primary four (4) curriculums. Primary four pupils were selected for the study because at that level, the pupils were assumed to start having the skills of reading and writing and English and Mathematics were selected because they were compulsory subjects. In scoring the instrument, two (2) marks were awarded to each question correctly answered (English language: 2x25=50 marks) and (mathematics: 2x25=50 marks), making a total of hundred marks. Academic performance test for aphasic children was found to have content validity. It was validated by experts and scholars. The research items were carefully chosen from primary four curriculum and effort was made to make the test to have content representativeness and content coverage. It was given to the school teachers of the two schools to ensure that the test items were within the curriculum and ability of the learners and finally the test items were given to the supervisors who scrutinized, evaluated and corrected the test to make it have content representativeness.

In order to find the appropriateness of the instrument in answering the research question, the corrections were incorporated and harmonized based on experts' observations and modifications and the final copy was produced. The items in the instrument were found to be sequentially arranged, logically arranged, and covered the content of English language and mathematics curriculum of primary four to six pupils. The test was finally adjudged to have content validity.

Academic Performance Test for Aphasic Children consists of two sections namely; English and Mathematics. The test was administered on the aphasic children on two occasions using test-retest method of establishing reliability. The instruments were administered on pupils at Gagi Model primary school Sokoto and Tafida Aminu primary school Mabera. The instruments were re-administered after an interval of two weeks to re-establish their reliabilities. The screened and selected students for the pilot study were drawn from two primary schools in Sokoto Metropolis. The researchers used a sample of primary 3 pupils from Gagi Primary school and 4 pupils from Tafida Aminu Primary School that have characteristics of aphasia. These pupils were handpicked by the teachers taking into cognizance the characteristics of aphasia. The overall correlation coefficient of the academic performance test was 0.80.

The data for this study was collected on the spot using two research assistants. The two research assistants were trained on the use of the instrument as well as its scoring before moving to the field, in order to ease the difficulties of collating and analyzing the data. The instruments were administered on the subjects and the data collected on the spot. The researchers got assistance of one teacher from the schools visited to collect data. They helped in controlling the pupils and directing the attention of the pupils towards the testers. The data was analyzed using tables and percentages as well as inferential statistics. Descriptive statistic was used to make preliminary analysis of the data while, research hypotheses were analyzed using Pearson correlation.

5. DATA ANALYSIS

This part of the paper deals with presentation and analysis of data collected from 63 primary schools across Sokoto state. Three local governments from each educational zone were selected (Sokoto North, East and South educational zones) and seven schools from each local government authority were selected and visited for the study. A total of 69 pupils were screened to have aphasia out of a total of 9,360 primary four (4) pupils representing 0.74 % from 63 primary school across (9) nine local government areas of the state. The cognitive styles of pupils with Aphasia is hereby presented in table 1.

Table 1: Cognitive Styles of Pupils with Aphasia

Cognitive styles	No	Mean	Standard deviation	Percentages
Field dependent	64	4.95	1.713	92.8
Field independent	5	12.40	.548	7.2

Source: Field Survey 2019

Data in table 1 indicate that sixty four (64) of the tested pupils were found to have field dependent cognitive styles with mean of 4.95 and standard deviation of 1.713. Field dependent pupils represented 92.8 % of the tested pupils for the study. In addition, five (5) pupils representing 7.2% with mean and standard deviation of 12.40 and 0.548 respectively were found to have field independent cognitive styles.

Table 2: Academic Performance Test for Pupils with Aphasia

No	Variable	Mean	Standard deviation
69	Academic Performance	56.343	101.59
69	English Language	27.045	48.763
69	Mathematics	29.298	52.827

Source: Field Survey 2019

Academic performance test for pupils with aphasia consisted of two sections, English and Mathematics. Each section consisted of 25 questions and 2 marks were awarded to each of the questions, making a total of 100 marks. The test was administered on the 69 pupils and the test had a mean and standard deviation of 50.43 and 6.897 respectively. The study generated two (2) hypotheses. The hypotheses were tested using Pearson correlation to find out the relationships between the variables under study.

The following hypotheses were therefore presented and analyzed.
H01: There is no significant relationship between Field dependent cognitive style and academic performance of primary school children with Aphasia in Sokoto state.
This hypothesis was tested by subjecting the scores for Field dependent cognitive style (FD) and academic performance scores to Pearson's correlation analysis as shown in table 3.

Table 3: Relationship between Field Dependent (FD) and Academic Performance of primary school children with Aphasia

Variables	N (students)	Mean	Std. Deviation	r-Cal	*p*-Value	Decision
Field Dependent	64	4.95	1.713	.516	.037	Rejected
Academic Performance	64	50.42	7.102			

The result of the analyses above revealed that, Field dependent cognitive style and academic performance had positive, strong and significant relationships, Pearson's r = .516 at 0.05 level of significance with p value of .037, showed a positive and significant relationship between Field Dependent cognitive style and academic performance because the p-value was found to be less than the .05 level of significance. The hypothesis was therefore rejected.

H02: There is no significant relationship between Field independent cognitive style (FID) and academic performance of primary school children with Aphasia in Sokoto state.
Hypothesis two was tested after comparing and subjecting the scores of cognitive style (field independent) (FID) and academic performance to PPMC analysis. The result is shown in table 4.

Table 4: Relationship between Field Independent (FID) and Academic Performance of primary school children with Aphasia

Variables	N (students)	Mean	Std. Deviation	r-cal	*p*-Value	Decision
Field Independent	5	12.400	0.5477	-.195	.753	Accepted
Academic Performance	5	51.200	3.2710			

Data from table 4 reveal that Field independent cognitive styles and academic performance had weak and negative correlation which was not significant. Pearson correlation = -0.195 at 0.05 level of significance with a p value of .753 showed insignificant relationship between cognitive style (Field Independent) and academic performance. This is due to the fact that p-value was found to be above the 0.05 significance level. The hypotheses were accepted based on the analyses.

5.1. Summary of findings

Findings of the study revealed that, there existed:

1. Strong, positive and significant relationship between cognitive styles (Field dependent) and academic performance.
2. Weak, negative and insignificant relationship between cognitive Styles (Field independent) and academic performance.

6. DISCUSSION OF FINDINGS

Aphasia is a communication disorder and impairment of comprehension, processing or production of language either in written or spoken forms due to damage to the part of the brain called cerebral hemisphere (Karanagh et al., 2010). The children identified with aphasia were found to have inability to comprehend language and speech well, speak spontaneously, name objects, imitate tongues, sounds and words and have persistent repetition of one syllabus, word or phrase. Findings from the first hypothesis reveal that there was positive and strong relationship between cognitive styles (field dependent) and academic outcomes and performance. Children with aphasia identified, despite their inability to use information immediately, difficulty in understanding receptive and expressive language, and inability to solve problems on time. But they were intellectually like normal individuals when it comes to writing test or examination and global thinking styles that enable them to excel academically. Sixty four out of sixty nine aphasic children identified have field dependent cognitive styles.

Chao (2000) conducted a study on students with learning disabilities: field versus field independence cognitive styles. The instrument used for data collection and measurement of cognitive styles was Group Embedded Figure test, administered on a total of sixty students, thirty with and thirty without learning disability. Findings of the research showed that students with learning difficulties or in other words with disabilities were found to have field dependent cognitive styles more than individuals without learning difficulties/disabilities. Guyer and Friedman, in Hammed (2011), concluded that boys with a two year difficulties in reading comprehension (aphasic included) displayed no evidence of deficiency and difficulties in short term verbal memory and consequently they were found to be more field dependent. Keogh and Donlon , in Restegar (2016) found that males with learning disorder were both field dependent and impulsive. The two finding affirm the findings of this study

Contrary to the present finding is the work of Cohen, Berent and Silverman (1973) who used the rod and frame test in a unique way with 36 adult women being treated for depression. Rod and frame test measured nonverbal, visuo-spatial functioning. The women who exhibited extreme field dependence had a right hemispheric deficit. The findings showed that high field dependent students were inferior to low field dependent students on a word task but not on the visual form task (Hameed, 2011).

The second hypothesis stated that: there exist no relationship between cognitive styles (field independent) and academic outcomes. The finding showed insignificant relationship due to the small number of aphasic

children with field independent cognitive styles and the mark obtained which is a little lower than that of field dependent children. These children can use their intuition to solve problem. They are impersonal, analytical and focus their attention on tasks as well as take a short time to finish task given to them.

Based on the result of academic performance test, aphasic learners performed better in mathematics than English language. The score for mathematics was 52.8% while, that of English language was 48%. Field independent aphasic learners were found to experience introspection, pessimism and egocentrism. They were found to have delayed return to emotional baseline and social disorganization.

Many studies were conducted which corroborate the findings of this study. For instance, Keogh and Donlon, in Rastegar (2016) conducted a study on male with series of behavioral and learning disorder. The result indicated that, male with learning disorder were more field independent and impulsive. Another study conducted by Kay in, Hameed (2011) on developmental motor therapy programme : effect on children with minimal brain destruction or learning disabilities is contrary to the findings of this study and it revealed that, the children were grouped into control and experimental groups.

There were sixty five subjects in the study, 32 and 33 in control group. Embedded figure test, marching familiar figure test and Reitan Indian Neuropsy Chorological test were some of the instruments used. The result indicated that perceptive-motor therapy leads to higher levels of cognitive functioning; experimental group showed significant gain in field independence, but not in self-image. There are many studies conducted by researchers which contradict the findings of this study. Kirk in, Idika (2017) showed that field independence has significant correlation with academic achievement.

7. CONTRIBUTION OF THE STUDY

Based on the findings of the study, many revelations have emerged which contribute greatly to knowledge. Children with Aphasia were found to be capable of answering written and objective questions easily like the normal individuals. Most of the aphasic learners screened and tested were found to be having field dependent cognitive styles which accounted for 92% of the learners. Also the level of their interaction, social orientation and interest to learning was low compared to their normal peers and they had tendencies to always isolate themselves.

Aphasic learners were found to prefer well arranged, silent, calm environment and structured learning environment that was appealing to the senses and their level of anxiety, emotional maturity and control was found to be low. They were found to experience introspection, pessimism and ego-centrism with reflective and field dependent cognitive styles.

8. IMPLICATIONS OF THE STUDY

The main implication of the study is that self instructional approach, individualistic and multi-sensory approach should be used when imparting knowledge to aphasic learners to enable them explore their hidden talents, overcome their learning obstacles and uncover their retention abilities to improve their language, realistic adjustment and placement of priorities when perceiving and processing information.

Proper channel of communication, ego-involved task and motor skills should be emphasized by teachers to enable aphasic learners develop attention control, self confidence, self motivation and self evaluation to improve their perceptual organization, working memory and intellectual abilities. Proper method of screening should always be used to identify pupils with aphasia at early stage and use appropriate methods of teaching to handle them in a conventional classroom setting.

9. RECOMMENDATIONS

The study recommends that teachers should be motivated and enlightened enough to identify students with aphasia in their classes. Teachers should be motivated in workshops to teach aphasic learners whose mode of perceiving and processing knowledge involves using sequential abilities to break up organized perceptual field (Field independent cognitive styles), to analyze things critically and articulate their experience using step by step approach, methodologically and in an ordered, realistic and concrete manner to enable them improve their academic performance.

10. CONCLUSION

The study concludes that aphasic children have language and communication disorder which affect their expressive and receptive language abilities, repetition of phrases and words. Most individuals screened to be aphasic were field dependent while very few aphasic children were having field independent cognitive styles. The preferred ways and habitual mode of perceiving and processing information among the aphasic learners were field dependent cognitive styles which were tied to their immediate environment, while few of them preferred field independent cognitive styles. Finally, it was found that field dependent aphasic learners performed better academically than field independent aphasic learners.

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