

DIFFERENTIAL ACADEMIC ACHIEVEMENT OF THE PHYSICALLY AND NON-PHYSICALLY CHALLENGED STUDENTS BASED ON ALLOTTED TIME FOR TASK COMPLETION

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Abstract

This study technically looked into the differential academic achievement of the physically and non-physically challenged students based on allotted time for task completion. The study adopted a quas-experimental research design. Thirty physically challenged students and fifty non-physically challenged students from fourteen secondary schools in Okpe local government Area of Delta State, were used for the study. One research question and one null hypothesis which was tested at 0.05 alpha level guided the study. The instruments used for data collections were English Language Achievement test (ELAT), mathematics Achievement test (MAT), and basic Science Achievement test (Bsat). The mean (X) and standard deviations (SD) were used to answer the research question while ANOVA was used to test the hypothesis. The result of the findings after the analysis indicated that the physically challenged students on motor skill disability, can equally have high academic achievement like the non-physically challenged students if special attention is given to them on an allotted time for teaching and learning and for task completion such as test and examination. Based on this, some recommendations were given such as: separate testing time or extra time be given to the physically challenged students by WACE, NECO, and NABTEB during their examinations.

Introduction

The 21st century society routes the educational growth of the individual through school. In school, the individual learns and through his learning he achieves personal growth, development and adjustment in the complex societies. Also in school according to Abang (2007), various forms and characteristics of individuals come to learn and to grow. Meanwhile, each of the individuals come to the school with his own nature, his abilities, and the ability to cope with learning task. Some learners are able to learn and make adjustment with ease, while other learners encounter varying degrees of difficulties with related attendant behavior output. These ones with varying degrees of difficulties in learning can be termed challenged or handicapped learners either physically or invisible challenges.

In many developing countries and underdeveloped countries like Nigeria and in Okpe local Government area of Delta State children who are physically challenged are considered incapable of learning, no matter what their disability is. Often, a disabled child is considered a distraction to other students and simply sent home from the school. The belief is that such children cannot learn and therefore should not be put through the stress of learning in a school. Another belief towards them, is that they are incest and have no divine favour and their misfortune is an evidence of bad blood, hence they should not be seen in the public. Where there is cultural bias against women education in general, physical challenges will further reduce expectations for disabled females in particular to have access to what funds families and schools are willing to spend on academic and vocational training.

To compound this challenge, is the notion that those whose disabilities are found on the limbs (dexterity) may not be able to catch up in the classroom during the teaching and learning process in an allotted time for task completion. And as a result, there will be low academic achievement for the physically challenged children wasted resources on the part of the parents and wasted efforts on the part of the school. To this end, the physically challenged are abandoned or carelessly handled in the school environment. Although there are really challenges that children who are handicapped may face in the process of teaching and learning in the classroom, especially, when time is allotted for the teaching and learning and when a task is to be completed as well. Education for Persons with Special Education Needs Act (2004) sees it merely “as a restriction in the capacity of the person to participate in and benefit from education on account of an enduring physical health or any other condition which results in a person learning differently from a person without that condition” (George, 2004, p. 65). The public law 94-142 (1975), the Education for all handicapped children act, was passed, mandating a free and appropriate education for all children with disabilities and extending many rights to parents of such children (George, 2004).

Gary and Oliver (1995) listed various handicapping conditions of problems of children for the purpose of placement in some types of special education programme. These are:
Orthopedic impairment, visual impairment, auditory impairment speech or language impairment, learning disabilities, behavior disorders and mental retardation.

A broad classification of learning problems of handicapped children can be grouped as followed, according to Abang (2004).

Dyslexia	Difficulties with reading, difficulty in comprehending written language
Dysgraphia	Difficulties in writing to make sense
Dyscalculia	Difficulties in understanding calculations of mathematics concepts
Dyspraxia	Difficulties with fine motor skills

Learning Challenges of Dyspraxia

This type of physical challenges is on bones and association of muscles and joints disorder. It is on this area, that the research study was based. The categories of children with this type of challenges are those found with withered upper arms and lower arms, kyphosis (hunchback) and the cripple. The difficulties in this area is with fine motor skills, hence some of these children depend on aids and appliances for mobility, others find it difficult to handle certain items like biro, pencil, metal rule and books firmly, hence they may depend on others for assistance in these areas in order to accomplish a task.

According to Abang (2004), three areas are involved in motor disabilities. They are gross motor, fine motor and visual motor:

- Gross motor problems are those found in the use of large groups of muscles in the legs, trunk and arms (cripple).
- Fine motor disabilities involve having difficulty coordinating the small muscles as in the use of fingers or toes. Children with this learning problem find it difficult to have a normal grip of the pencil, biro, chalk, or any other object to write or draw. Such a child tends to have handwriting which is awful, messy with odd positioning, spacing and shaping of letters. This may lead to slowness in writing amidst frustrating efforts to improve.
- On the other hand, visual motor disability, deals with perceptual difficulty on what the child perceives and what the brain interprets. If what the brain receives is misperceived information, and if the information is wrongly processed and recorded the muscle that acts on the eye and the hand coordination may be misinformed. A child with visual motor problem, will not be able to easily comprehend what is seen and get muscle linked up fast enough to keep pace with others. Such a child will hardly ever complete class work.

In a conventional classroom environment, where teaching and learning take place, both the physically challenged students and the non-physically challenged students are expected to carry out learning activities at the same time allotted for the teacher to teach, give classroom assignment and to have equal academic achievement irrespective of their challenges. Those with problem of dexterity, involving the motor skills struggle to catch up, but when they are not able to meet up, and no consideration from their teachers, help from fellow students who are non- physically challenged, lack of interest for learning and discouragement may set in, which can also affect academic achievement. Also in the classroom, Abang (2004) opined that in areas of assignments and testing, such a child cannot function like non physically disabled children. Other learning problems in the classroom environment for physically challenged students, neglect by school teachers, restricted courses of study, discrimination from various school activities, negative notions resulting in abandonment and longer time in problem solving, writing/drawing and taking examination.

And it is expected, that all should perform equally despite their challenges. Science courses are sometimes ruled out of the scope of acquisition by the physically challenged students. The question is, does physical challenge guarantee poor academic achievement for students having motor skill disabilities? If special consideration is extended to the physically challenged, can they perform equally like their counterparts who are non-physically challenged? It is based on this, that this study was set out to experiment on the allotted timing for teaching and learning, and for task completion of both the physically and non physically challenged students on their academic achievement.

Statement of the Problem

Physically challenged students and non-physically challenged students are always grouped together in the classroom to learn and achieve equally academically despite their challenges under an allotted time for teaching and task completion. This study was therefore aimed at finding out differential academic achievement of the physically challenged students and non-physically challenged students on the allotted time for teaching and learning and for task completion such as testing in the classroom and examination.

Research Question

What is the effect of time allocation on the academic achievement in Maths, English and basic sciences of physically and non-physically challenges students?

Hypothesis

The null hypothesis that was tested at 0.05 alpha level on this study was.

There is no significant difference in the academic achievement of the physically and non physically challenged students on an allotted time for teaching and learning and for task completion in Mathematics, English language and basic Science.

Method

This study adopted quasi-experimental, using pretest-post-test control group design. This design was appropriate for the study because it determined the effect of timing on teaching and learning and on a task completion for the physically challenged students and non physically challenged children, in Mathematics, English language and basic Science. The population of the study comprised 2000 students from fifteen secondary schools in Okpe local government area of Delta State. Meanwhile, the sample size was made up of 30 students with fine motor skills disabilities and 50 non-physical challenged students. All the students were selected by purposive or judgmental sampling. Instruments for data collection were English Language Achievement Test (ELAT) mathematics Achievement Test (MAT) and basic Science achievement Test (BSAT). The Kuder Richardson formula 20 was used to establish the reliability and psychometric characteristics of the instruments ranging from 0.86, 0.65 and 0.66 respectively.

For the purpose of experimentation, the students were grouped into two, the experimental group and the control group.

Students with physical challenges were assigned the experimental with timing in view, while the non physically challenged students were assigned the control group also with timing in view.

Treatment Procedure I

First, students in the experimental group and those in the control group were centralized in one of the selected schools in Mereje, OLGA, where they were instructed in mathematics, English language and basic Science by the various subject specialists within a period of one hour thirty minutes each (1 hr 30mins). Blackboard summary was made through “Notes coping”, and all the students were told to copy the “Notes” into their exercise books under an allotted time of 3 minutes. A score of 100% marks was assigned to the students who finished up within 1 minute, 50% marks within 2 minutes, 25% marks within 3 minutes and 12.5% after 3 minutes. The result of the pretest was tabulated below.

Table 1: Analysis of percentages, mean and standard deviation of task accomplishment and academic achievement of physically challenged and non physically challenged students learning in same classroom environment in allotted time of 3 minutes.

		Allotted time	No of respondents	%	Total marks awarded
Control Group	Non physically challenged	1 minute	30	100	3000
		2 minutes	15	50	750
		3 minutes	5	25	125
	Total		50		2875
	%				77.5
	SD				4.02
	Experimental Group	Physically challenged	1 minute	-	-
		2 minutes	-	-	-
		3 minutes	3	-	-
		4 minutes	10	25	120
		5 minutes	17	10	170
Total			30		365
%					122
SD				0.8	

Table 1 presented percentages, mean and standard deviation of the control group of 50 Non physically challenged and the experimental group of 30 physically

challenged adolescents, learning in the same classroom at the same time with a task to be accomplished thirty of the non physically challenged students accomplished the task within 1 minute and they scored 100% each, 15 accomplished the task within 2 minutes and they were scored 50% while 5 accomplished the task in 3 minutes and they were score 25% each. The average marks for the non physically challenged students is 77.5% with a standard deviation of 4.05 marks.

On the other hand, none of the physically challenged students was able to accomplish the task for the first 2 minutes. 3 of them accomplished the task in the first 3 minutes, 10 in minutes and 17 in 5 minutes. They were scored 25%, 12% and 10% respectively. The means (\bar{x}) scored of the physically challenged students was 12.2% with a standard deviation of 0.8.

Treatment Procedure II

A simple test made up of 25 objective items and 5 theories to answer 3, was given to both the physically and non physically challenged students in another space of time (2 days after the class work) based on the instruments of measurement. Again an allotted time of 1 hour was give to the students to solve all the items. The result is tabulated below.

Table II: Analysis of academic achievement of students with physical and non physical challenges on the same allotted time of testing under 1 hour

Control group	Category of respondent	No. of respondent			Academic achievement			
	Non physically challenged				Mathematics	English	Basic science	
Experimental group		50	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
			66.9	8.2	69.2	8.3	7.4	8.6
	Physically challenged	30	37.5	6.1	43.4	6.6	41.4	6.4

The table above showed that in Mathematics, English and basic science, the mean scores and standard deviation for the control group (non physically challenged students) is 66.9 (8.2), 69.2 (8.3) 74.2 (8.6) respectively. While experimental group (the physically challenged adolescents) is 37.5 (6.1), 41.4 (6.4) respectively.

The table indicated that the non physically challenged students had higher means scores and standard deviation in mathematics, English and basic Science, than their physically changed students, on an equal allotted time of testing.

Table III: Analysis of ANOVA on the academic achievement of experimental and the control group on the same allotted time for testing under 1 hour.

Sources of variation	Sum of squares	df	Mean squares	f-cal	f-cri	Level	remark
Between groups	207.25	2	103.63	5.13	4.78	0.05	Rejected
Within groups	1572.73	78	20.16				
Total	1779.98						

From table III, the F-calculated is greater than F-critical hence we reject the null hypothesis. Therefore there is a significant difference in the academic achievement of the physically challenged students and non physically challenged students when placed in the same classroom environment using same allotted time to assess them, by testing.

Separate timing for the Experimental Group (Post Test)

The same test made up of 25 objectives items and 5 theories to answer 3 was given only to the experimental groups, the physically challenged students after a day interval. Their allotted time was 2 ½ hours. Below is the result of the test

Table IV: Academic achievement of the experimental group (Physically challenged student only) in an allotted time of testing under 2 ½ hours

Category of respondent	No of respondent	Academic achievement					
		Mathematics	English	Basic science			
	30	X	SD	X	SD	X	SD
Physically challenged		72.2	8.5	80.0	8.9	60.9	7.8

The table above showed that the mean score and standard deviation of the physically challenged students in Mathematics, English and Basic Science is 72.2 (8.5) 80.0 (8.9) and 60.9 (7.8) respectively.

Table V: Analysis of Variance on the Academic achievement of only the physically challenged students in English, Mathematics and basic science when there is variation in time (more time given to the physically challenged).

Sources of variation	Sum of squares	df	Mean squares	f-cal	f-cri	Level of sign	remark
Between groups	204.75	2	102.38	2.81	4.78		Accept Ho
Within groups	2846	78	36.49				
Total	3,050.75						

From table V, F-calculated is less than F-critical, therefore we accept the hypothesis. This means that there is no significant difference in academic achievement of the physically challenged students when more time is given to them in English, Mathematics and Basic Science.

Discussion of Results

It has almost become a belief that a physical disability in any form is also academic disabilities for pupils or students who are admitted into schools to learn. This may be so, if special consideration and attention is not given to them during the process of teaching, learning assimilation and testing under an allotted time. This is why the findings in this experiment showed high academic achievement of the physically challenged students when special attention and extra time is given to them. This finding corroborated the previous findings by Abang (2004) who technically posed a question to address this issue: "how does the school environment respond to or contend with these undesirable, unwanted thus unaccepted conditions that weigh down some learners and makes it impossible for them to respond as adequately as others to the teaching-learning process?" In providing the answer thus, Abang (2004) concluded that Nigeria has gone beyond the stage where the classroom teacher merely sees a child who learns differently as foolish, block head, idiot and unteachable. Instead, when a child cannot learn fast, when he cannot copy notes as fast as others, when his grades are going down, he should be properly examined and treated specially He/she should not be given stigma, and left to rot and out of the system, this is because, they equally can achieve high academically, like their counterparts who are not physically challenged, when special attention and consideration is given to them.

This is also in line with the declaration of child's Human Rights" in Nigeria (2007) where there is right to handicapped children to special measures of protection and attention required of their physical and mental needs".

Recommendations

The following recommendations are hereby given:

1. Physically challenged students should be encouraged to read all courses as they desire like their counterparts that have no challenges.
2. Special consideration in terms of teaching, assimilation and testing should be extended to them with extra time and if possible tested separately.
3. Teachers should show more concern to them in view of their challenges when assigning class works and activities
4. Teachers can also motivate them through verbal praise which reinforces positively.
5. The government can and should provide schools specially meant for them with their own special instructors.
6. Finally, and most importantly, examining bodies such as West African Examination Council (WAEC), National Examination Council (NECO) and national Body for Technical Examination Board (NABTEB) should have

separate testing time or duration for the physically challenged students, different from their non physically challenged counterparts.

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