

## **BRAINSTORMING AND INDIVIDUALISED LEARNING STRATEGIES ON ACADEMIC PERFORMANCE OF CHILDREN WITH LEARNING DISABILITIES IN SOCIAL STUDIES IN TANGA DISTRICT, TANZANIA**

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### **Abstract**

This study examine effect of Brainstorming and Individualised learning strategies on academic performance of children with learning disabilities in social studies in Tanga district, Tanzania To achieve this broad objective, two research questions were developed and answered while two research hypotheses were formulated and tested. Quasi-experimental design, precisely, the post-test only, non-equivalent group, quasi-experimental design was used to carry out this study. The population of the study constitutes all the pupils in primary three with learning disabilities in public primary schools in Tanga district, Tanzania. Simple random sampling technique was used to select 100 primary 2 pupils with learning disabilities. The instrument for data collection was Social Studies Performance Test (SSPT) which was face validated by three experts, two from Special Education Department and one was given to a lecturer Measurement and Evaluation. To determine the reliability of the instrument, test retest method was used and a reliability coefficient of 0.76 was obtained using PPMC. Data for the study was collected with the help of Co-researchers. Data collected was analyzed using mean and standard deviation to answer the research questions, raised in the study. While t-test was used to analyze the null hypotheses at 0.05 level of significance. Presentation and analysis of data were made by the use of tables. The result revealed that pupils with learning disabilities who were exposed to Brainstorming and Individualised learning strategies achieved more than those who were not exposed to it. Also, there exist significant difference in the academic performance of children with learning disabilities taught using Brainstorming and Individualised learning strategy and lecture method in Tanga district, Tanzania It was recommended among others that curriculum planners should incorporate the usage of Brainstorming and individualised instructional strategies as part of approved methods of teaching in lower primary schools.

**Keywords:** brainstorming, individualized, learning strategy, learning disabilities

### **Introduction**

Learning disability is a disorder that can cause significant problems to the one who suffers from it both at school and in life generally. The United Nations Educational Department, (2006) defined the term learning disability to mean “a disorder in one or more of the basic psychological

processes involved in understanding or in using language – spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. However, as an operational definition of the term “learning disability” for the purpose of this study, the researchers see the term as – a consistent low achievement of scores by an individual either in examinations, tests or classroom academic activities without obvious physical reasons for the low achievement.

Learning disability is classified to include several areas of functioning in which a person has difficulty learning in a typical manner, usually caused by known and unknown factor or factors (Gordon, Paul, Margaret and Malcolm 2010). The unknown factor is the disorder that affects the brain’s ability to receive and process information. This disorder can make it problematic for a person to learn as quickly as someone who is not affected by a learning disability. There are many types of learning disabilities, most students with learning disabilities, about 70% - 80% have deficits in reading (Reaser, Prevatt, Pet-Scher and Proctor, 2017). The term “Developmental dyslexia” is often used as a synonym for reading disability; however, many researchers assert that there are different types of reading disabilities, of which dyslexia is one. A reading disability can affect any part of the reading process, including difficulty with accurate or fluent word recognition, or both, word decoding, reading rate, prosody (oral reading with expression), and reading comprehension. (Gallego, Grace, and Elba, 2016).

Another type of disorder identified among students with learning disabilities is the “disorder of written expression”; which is synonymously called “dysgraphia. The term “dysgraphia has been used as an over arching term for all disorders of written expression. Others such as the international Dyslexia Association use the term “dysgraphia” to refer to difficulties with

handwriting. However, if the handwriting is due to an impairment in motor co-ordination, a diagnosis of “Developmental Dyspraxia should be considered. (Reid and Knight, 2016).

Maths disability, sometimes called dyscalculia, can cause such difficulties as learning mathematics concepts (such as quantity, place value and time), difficulty memorizing mathematics facts, difficulty organizing numbers, and understanding how problems are organized on the page. Dyscalculia are often referred to as having poor “number sense” (Skiba; Simmons; Ada; Ritter; Gibb; Rausch; Caadrado and Chung, 2018). While the disorder of speaking and listening (Aphasia) often con-occur currently with learning disabilities including difficulty in memory; social skills and executive functions (such as organizational skills and time management). (Utley; Obiakor and Bakken, 2011). Nonverbal learning disability – this often manifests in motor clumsiness, poor visual – spatial skills, problematic social relationships, difficulty with maths, and poor organizational skill characteristics.

Characteristics of students with learning disabilities as observed by Kavale and Ferness (2016) are; being non-strategic, holding negative self-attributions and processing information in efficiently or incorrectly, other are possessing poor social skill and being unable to generalize or transfer-learning. People with a learning disability have trouble performing specific types of skills or completing tasks if left to figure things out by themselves or if taught in conventional ways.

Brainstorming is a non conventional learning strategy. Brainstorming is defined as a group or an individual creativity method in which attempts are made to determine a definite conclusion for a particular problem by obtaining information in form of a list of ideas that are spontaneously contributed by the members (Al-Mutairi, 2015). It is one of discussion methods which encourage members of the group to generate the largest possible number of diverse and innovative ideas

spontaneously in an open climate and not limited to critical launch ideas that present solutions to the problem and then choose the right ones. It is a group creativity forum for general ideas (Al-Maghrawy, 2012). It is large or small group activities that encourage learners to focus on a topic and obtain information in form of a list of ideas that are spontaneously contributed by the members. It is an excellent strategy to use in the inclusion classroom, to tap into prior knowledge, to give all students a chance to express their ideas, to eliminate fear of failure, to show respect for each other, to try something without fear, to tap into individuality and creativity, and to eliminate the fear of risk taking.

Brainstorming is an activity that stimulates the mind and produces multiple ideas around topics. It is a strategy used to generate a number of ideas to help solve a particular problem. The technique has been around for long and still in use to engage learners in solving a wide range of problems. It is a technique, generally used in an individual or group setting, to quickly generate a large number of ideas about a specific problem or topic (Filgona, Sababa, Filgona and Ndatuwong, 2016). It can help to encourage creative thinking and generate enthusiasm in learners, encourage participation and building on the ideas of others.

Brainstorming strategy if used in teaching and learning could provide Social Studies pupils with ample opportunity to be creative, to generate a large number of ideas by explanation, clarification and persuasion, and could allow the learners to participate in discussions to develop ability to think critically through training and encouragement. When learners brainstorm on a given topic in Social Studies, a wider spectrum of ideas could be attained and the best among these ideas would be used which would give the learners a broader sense of reasoning and the ability to generate a variety of such ideas when confronted with similar or different real life problems.

Individualized learning strategy is a teaching learning method in which the abilities and interest of learners are first considered before the adoption of content, instructional technology and learning pace of the learners. Prem (2012) gave two definitions: first, ‘Individualized instruction strategy refers to those classroom practices of teaching which recognize the uniqueness of each learner and thus provides for adequate tutorial guidance, and other support services suited to bring about a wholesome development in the person (mind, body, and spirit)’. And secondly, ‘Individualized instruction is about using teaching strategies that connect with individual student’s learning strategies. The ultimate goal is to provide a learning environment that will maximize the potential for student’s success.’

Individualized learning strategy according to Olatoye, Aderogba and Aanu (2011) is a learning strategy in which the content, instructional materials, instructional media, and pace of learning are based upon the abilities and interests of each individual learner. Individualised learning yields a huge net benefit by freeing teachers to focus upon the needs and problems of individual students, as the facilitator of learning. Individualized instruction is basically a constructivist’ s approach of learning in which the student is expected to build his or her learning and knowledge. Furthermore, Gibney (2020) emphasised that individualised learning can be approached in several ways such as; programmed instruction, computer assisted instruction, independent study, Learning Activity Package, among others. These approaches have been investigated and found to be effective in enhancing students’ academic achievement (Neboh, 2012). Moreover, Arseneau (2014) reported that individualised learning give students the opportunity to engage actively in the teaching and learning process by engaging in hands-on activities. It helps in meeting differences in individual learning styles and rates. Individualised learning provides the students the opportunity to grow in self-discipline, self-motivation and also

presents occasions for genuine interaction between the teacher and students, which is lacking in the traditional method of teaching. Among the different approaches to Individualised learning, the researcher adopted the Learning Activity Package (LAP) for the purpose of this study.

Individualized learning is not a “One-size-fits-all” approach. Students’ interest, desires and needs are put into consideration. It is a learning instruction that presents the same curriculum to the learners, even though the learning plan and profile of each student differs. One basic notion is that each learner learns at his/her pace through the material before them based on the learner’s learning abilities and needs.

Social studies subject prepare students to identify, understand, and work to solve the challenges facing our diverse nation in an increasingly interdependent world. Education for citizenship should help students acquire and learn to use the skills, knowledge and attitudes that will prepare them to be competent, good and responsible citizens throughout their lives. Good, competent and responsible citizens are informed and thoughtful, participate in their communities, are involved politically, and exhibit moral and civic virtues.

However several factors are known to have negatively impacted on the effective teaching of social studies. These factors are not strange to the entire educational system in Tanzania. Schools in Tanga district, Tanzania may not be an exception to the problems plaguing the entire educational system in Tanzania. These problems include: poor teaching and learning environment, poor welfare packages for teachers, overcrowded classrooms with no sitting facilities, dearth of suitable textbooks, inadequate instructional facilities and inappropriate selection of instructional strategies by teachers. These problems are known to have affected the entire education system as well as students’ learning outcomes generally in Tanzania, and particularly, might have impacted on social studies students’ learning outcomes in schools of

Tanga district, Tanzania. Odundo (2013) stated that lecture, which is currently the predominant teaching approach in Tanzania Primary Schools is inappropriate and ineffective for achieving the objectives of the social studies curriculum. Children's performance has been a source of concern to teachers, parents and all stakeholders in the educational sector, especially as regards to the record of poor performance of students in external examinations. A lot has been said and done to improve teaching and learning of social studies but students continue to perform poorly in both internal and external examinations (Odundo, 2013).

There is the possibility that students' poor performance may be tied to the strategies adopted by social studies teachers in schools. If the teachers lack the pedagogical skills to effectively teach the subject in schools, students' performance in external examinations may be negatively affected. This is because, the quality of education in any society rest on the shoulders of her teachers. Studies have shown that students taught by individualized and brainstorming learning strategy achieved remarkable results than those taught by traditional chalk and talk approach (Al-Shammari, 2015), (Al-qarni, 2011). However these findings are inconclusive because a likely gap in empirical evidence may exist in Tanga district, Tanzania.

This study therefore focuses on finding the effect of learning strategies (brainstorming and individualised) on students learning outcomes in social studies in schools of Tanga district, Tanzania, because, there is that possibility that teachers in schools of Tanga district, Tanzania might shy away from adopting these learning strategies in teaching social studies, probably due to some of the genuine factors earlier discussed, which has in turn affected students' performance. Therefore, the study intends to provide empirical evidence related to the effect of brainstorming and Individualised learning strategies on academic performance of students with learning disabilities in social studies in Primary Schools in Tanga district, Tanzania

### **Statement of the Problem**

In spite of the immense benefits that the inclusion of Social Studies in the school curriculum should offer pupils, the poor handling of the subject in lower primary schools debar pupils from enjoying the benefits. Thus, they perform poorly in the subject and they exhibit negative attitude towards it. This problem has been attributed to the way in which the subject is being taught. Teachers rely mostly on the lecture method of imparting knowledge while the manner of presentation is supposed to be activity-based for pupils at this level. Previous studies conducted to address this similar problem focused more on primary school pupils giving less attention to students with learning disabilities especially in Tanga district, Tanzania

Brainstorming and Individualised learning strategies are some of the learner-centered strategies that can be used to address the problem. However, previous studies conducted with these two strategies in Social Studies do not focused on students with learning disabilities while others focused on other subjects like English language, Geography and History. Also, Previous studies conducted to address this similar problem focused more on junior secondary school students giving less attention to lower primary classes especially in Tanga district, Tanzania This study therefore, investigated effect of Brainstorming and Individualised learning strategies on academic performance of children with learning disabilities in social studies in Tanga district, Tanzania

### **Purpose of the Study**

The purpose of this study is to find the effect of Brainstorming and Individualised learning strategies on academic performance of children with learning disabilities in social studies in Tanga district, Tanzania Specifically, the objectives of this study were to investigate the:



1. Academic performance of children with learning disabilities in social studies taught using Brainstorming learning strategy and lecture method in Tanga district, Tanzania
2. Academic performance of children with learning disabilities in social studies taught using Individualised learning strategy and lecture method in Tanga district, Tanzania

### **Research Questions**

The following research questions guided the study.

1. What is the mean score of children with learning disabilities taught using Brainstorming learning strategy and lecture method in Tanga district, Tanzania
2. What is the mean score of children with learning disabilities taught using Individualised learning strategy and lecture method in Tanga district, Tanzania

### **Research Hypothesis**

The following hypotheses were formulated.

1. There is no significant difference in the academic performance of children with learning disabilities taught using Brainstorming learning strategy and lecture method in Tanga district, Tanzania
2. There is no significant difference in the academic performance of children with learning disabilities taught using Individualised learning strategy and lecture method in Tanga district, Tanzania

### **Significance of the Study**

The findings will be practically helpful to students, classroom teachers and curriculum planners. The study will be of importance to students with learning disabilities at the primary school level, if the findings are put into practice. It will generate better understanding of the subject and see Social Studies as a subject that one can pass without struggle. This will enhance in students the development positive self-concept on the subject, as well as preparing them for meaningful learning through active practical participation.

Furthermore, the findings will assist and expose classroom teachers on the need to use different methods of teaching, the provision of teaching materials with appropriate reinforcement to students with learning disabilities in their classes in other to make them learn through practical involvement in the teaching/learning process. Moreover, the result of this study would make clear to teachers that being a passive listeners in a class-situation kills interest and enthusiasm and thus hinders meaningful learning. In effect, teachers of Social Studies would see reasons to adopt the student-centered learning strategy for effective teaching/learning of Social Studies to aid achievement of students with learning disabilities in schools.

Furthermore, this study would provide important information to curriculum planners of educational institutions in preparing social studies curriculum suitable for students with learning disabilities. Furthermore, the findings would advocate for the incorporation reflective teaching strategy into the curriculum for pre-service and in-service training of teachers for a vast improvement in teacher effectiveness in the classroom towards students with learning disabilities in Social Studies.

### **Method**

The study use quasi-experimental design, precisely, the post-test only, non-equivalent group, quasi-experimental design. This involved experimental and control groups. This was because, the

manipulations and control of variables to establish cause and effect relationship which the study deserves was only attainable by this design. The research area was Tanga district, Tanzania. The target population of the study constitutes all the pupils in primary three with learning disabilities in public primary schools in Tanga district, Tanzania. A sample size of 100 primary two pupils with learning disabilities pupils would be purposively selected from ten selected primary schools was used for the study. Purposive sampling technique was employed because the study was on children with learning disabilities. These are pupils with consistent low achievement of scores either in examinations, tests or classroom academic activities without obvious physical reasons for the low achievement. The ten schools were randomly assigned into experimental group and control group. This consisted of five schools in the experimental group and five schools in the control group. Social Studies Performance Test (SSPT) was self- designed by the researcher to measure pupil's performance in Social Studies. The instrument was also used to determine the pupil's retention ability in Social Studies. SSPT has two sections – sections A and B. section A contains pupil's demographic information which are gender, class and age. The section B has 10 items. The instrument adopted the objective question format which means that options lettered A to D was provided for each question. Each of the items was awarded 10 marks to make a total of 100 marks. SSPT was given to lecturers in Special Education Department and Measurement and Evaluation of the Open University of Tanzania for face validity. They went through it with respect to adequacy, structure, language and relevance of the instrument. The corrections made by all the experts were effected and the final copy was produce. To test for reliability of the instrument, the trial test for determining the coefficient of reliability of the SSPT was carried out using test re-test reliability techniques. 20 copies of the SSPT were administered on 20 pupils in a local government area not involved in this study. After two week, the SSPT was re-

administered to the same sample. The scores of the pre-test and post-test were correlated. The reliability coefficient of SSPT was found to be 0.76 using Pearson product moment correlation. The researcher visited the schools; solicited the co-operation of the school authorities as to build in the study into their school's activities. The researcher explained the purpose and benefits derivable from the study to the Head Teachers of the selected schools. The test was administered to those students who were identified as pupils with learning disabilities by the class teachers. The identification criteria was pupils with a consistent low achievement of scores either in examinations, tests or classroom academic activities without obvious physical reasons for the low achievement. This was gotten from the pupils academic record. The test was administered both to the experimental and the control groups as post-test. This was done after the four weeks of treatment programme for the experimental groups. The researcher monitored the exercise and then collected the entire answer scripts, scored and generated data that was subjected to statistical analysis. Data collected for the study were analyzed as follows, mean and standard deviation was used to answer the research questions, raised in the study. While t-test was used to analyze the null hypotheses at 0.05 level of significance.

## **Results**

### **Research Question 1**

What is the mean score of children with learning disabilities taught using Brainstorming learning strategy and lecture method in Tanga district, Tanzania?

Table 1: descriptive statistics of the academic performance of students in brainstorming learning strategy and lecture method.

<b>Groups</b>		<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Brainstorming strategy</b>	<b>learning</b>	24	43.04	21.57
<b>Lecture method</b>		52	17.44	10.69

Table 1 above shows that pupils with learning disabilities exposed to Brainstorming learning strategy had mean score was 43.04 and a standard deviation of 21.57. The pupils with learning disabilities in the control group had mean score of 17.44 with a standard deviation of 10.69. This suggests that the pupils with learning disabilities who were exposed to Brainstorming learning strategy achieved more than those who were not exposed to it.

## **Research Question 2**

What is the mean score of children with learning disabilities taught using Individualised learning strategy and lecture method in Tanga district, Tanzania?

Table 2: descriptive statistics of the academic performance of students in individualised learning strategy and lecture method.

<b>Groups</b>		<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Individualized strategy</b>	<b>learning</b>	24	53.48	7.19
<b>Lecture method</b>		52	17.44	10.69

Table 2 above shows that pupils with learning disabilities exposed to individualised learning strategy had mean score was 53.48 and a standard deviation of 7.19. The pupils with learning disabilities in the control group had mean score of 17.44 with a standard deviation of 10.69. This suggests that the pupils with learning disabilities who were exposed to individualised learning strategy achieved more than those who were not exposed to it.

## **Research Hypothesis 1**

There is no significant difference in the academic performance of children with learning disabilities taught using Brainstorming learning strategy and lecture method in Tanga district, Tanzania

Table 3: t-test analysis of the academic performance of students in Brainstorming group and lecture group

Groups	N	Mean	Standard Deviation	t-cal	t-crit.	Df	Level of sig.	Decision
	24	43.04	21.57					
	52	17.44	10.69	9.82	1.96	74	.05	rejected

For hypothesis one, table 3 indicated that t-cal is 9.82 while t-crit. is 1.96. Since the t-cal. value is greater than t-crit. value, the null hypothesis was rejected. Therefore, the conclusion was that there is significant difference in the academic performance of children with learning disabilities taught using Brainstorming learning strategy and lecture method in Tanga district, Tanzania

## Research Hypothesis 2

There is no significant difference in the academic performance of children with learning disabilities taught using Individualised learning strategy and lecture method in Tanga district, Tanzania

Table 3: t-test analysis of the academic performance of students in Brainstorming group and lecture group

Groups	N	Mean	Standard Deviation	t-cal	t-crit.	Df	Level of sig.	Decision
	24	43.04	21.57					
	52	17.44	10.69	6.47	1.96	74	.05	rejected

For hypothesis 2, table 4 showed that t – cal is 6.47 and t-crit. is 1.96. Since the t-cal. value is greater than t-crit. value, the null hypothesis was rejected. This shows that statistically there is

significant difference in the academic performance of children with learning disabilities taught using Individualised learning strategy and lecture method in Tanga district, Tanzania Hypothesis 2 which stated that There is no significant difference in the academic performance of children with learning disabilities taught using Individualised learning strategy and lecture method in Tanga district, Tanzania was therefore rejected. This revealed that individualized learning strategy has a significant effect on the students' academic performance.

### **Discussion of Findings**

The result obtained in this study showed that there is significant effect of brainstorming learning strategy on primary school pupils' academic performance in Social Studies. Also, pupils in experimental group had higher mean value than their counterpart in control group. This could be that brainstorming learning strategy has potential of affect the pupils' learning of Social Studies. This finding provide evidence to the result of Al-Salamat (2014) who revealed that there is significant difference in the mean score of students in Geography in favour of brainstorming group.

The result of the study indicates that individualsied learning strategy has a significant effect on pupils' academic performance in Social Studies. Pupils who were taught Social Studies using individualized learning strategy achieved significantly higher than those taught without using the strategy. The finding of this study is in line with the findings of some earlier studies on the positive effect of different learning strategies with respect to pupils' academic performance in Social Studies. The study conducted by Eze (2015) provide credence for the present study. The studies showed that there is a significant difference in the mathematics achievement of pupils in the treatment group that used self-instruction strategies than in the achievement of pupils in the

control group. The enhancement in pupils' achievement in Social Studies could be due to the pupils' understanding of the individualized learning strategy. This could be so in that the pupils spent some time and adequate practice to learn the strategy and by the time the strategy was learnt, the pupils easily applied the process. The strategy could also have assisted the pupils to be focused and to organize the learning task in a logical manner. Zimmerman (2011) noted that when students are explicitly taught self-regulatory strategies and are also given ample opportunity to practice the strategy, there is the tendency that the academic achievement of the students will improve. Corroborating this, Eze (2015) noted that exposing pupils to the use of self-instruction strategies leads to superior achievement of those exposed to the strategy. The finding of this study suggests that individualised strategy help pupils to actively be in-charge of the learning process and to monitor the progress in learning exercise. As pupils are deeply involved in active learning, pupils are able to learn the processes involved in solving social problems.

### **Conclusion**

Research studies have shown that primary school pupils' academic performance have been consistently poor including learners with disabilities, despite all efforts being made by teachers to improve their intellectual skill and growth. These observed poor academic performance have been attributed to among other things, the use of teaching methods/strategies which are not student-centred and activity-based by the chemistry teachers. Meanwhile, this study found that the Brainstorming strategy and individualized strategy were more effective than the Lecture method in enhancing students' academic performance. Therefore, this study lends empirical support to the fact that students' academic performance could be greatly improved when the



teachers expose them to innovative, student-centred and activity-based teaching methods/strategies such as the Brainstorming Strategy and Individualised Strategy.

### **Recommendations**

1. Social Studies teachers in primary schools should expose their pupils to Brainstorming and Individualised strategies in order to improve their performance in Social Studies.
2. The teachers should also be trained on the effectiveness usage of Brainstorming and Individualised instructional strategies through seminars, workshops, and conferences to create awareness and techniques required in implementing it.
3. Teachers should adopt the use of Brainstorming and individualised instructional strategies in the teaching of Social Studies and indeed across other subject areas in order to better prepare the pupils for further challenges.
4. Furthermore, curriculum planners should incorporate the usage of Brainstorming and individualised instructional strategies as part of approved methods of teaching in lower primary schools.
5. In faculty/school and colleges of education, pre-service teachers should be thoroughly trained in the effective usage of Brainstorming and Individualised strategies so that they will be grounded and found it easy to use when they get to the field.

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