

EFFECT OF BRAINSTORMING TECHNIQUE AND SENIOR SECONDARY SCHOOLS STUDENTS' ACADEMIC PERFORM IN ECONOMICS IN CALABAR MUNICIPALITY OF CROSS RIVER STATE, NIGERIA

By

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Abstract

The need to improve teaching and learning of Economic necessitated this research to determine the effectiveness of Brainstorming Technique on Academic Performance of Students in Economics in Secondary Schools in Calabar Municipality, Cross River State. To achieve the purpose of the study, one null hypothesis was formulated and tested at 0.05 level of significance. The survey research design was adopted for the study. A sample of two hundred (200) respondents was randomly selected for the study. The "Effectiveness of Brainstorming Technique Questionnaire" (EBTQ), and "Achievement Test in Economics" (ATE) were used to collect data for the study. The data collected were analyze using Independent t-test statistical analysis. The Findings of the study revealed that brainstorming technique has significant influence on students' academic performance in Economics in Calabar Municipality. Based on the findings of the study, it was recommended among others that: Government and educational stake holders should collaborate to match this technique (brainstorming) to the lesson plan, People with academic qualification should mandatorily go through teacher education courses that will equip them with techniques and pedagogical skills before being allowed to teach, Prospective teachers while undergoing training should be equipped with adequate knowledge and skills on the use of brainstorming technique and the various ways and stages in which it can be used.

Keywords: Education, Brainstorming, Academic Performance, Economics, creativity

INTRODUCTION

Education is the key for positive transformation in the society because of its far reaching effects on growth and development in all sectors of the economy. Education is the tool that helps its recipient to meaningfully help themselves and positively contribute to the growth and welfare of their immediate community (Udoye&Egbule 2020). The world is turning to be a global village, due to the developments in the scientific, economic and social aspect of life as well as communication revolution which results from the knowledge development and globalization. As a response to these developments and challenges it was necessary to prepare a generation that is capable of confronting these challenges through changing the traditional methods of teaching and learning as well as focusing on providing students with the suitable training on different creative thinking styles.

The brain box of any discipline is to apply the right technique, to provide the recipient with the right knowledge, skills and attitude in order to solve his or her societal problems so as to improve sustainability which enhance the development of the Nation. The technique of learning is shifting from the old traditional teacher-centered approach of teaching to a student-centered approach to learning. In the traditional or old teacher-centered method, the emphasis was on the teacher and what they teach, while the student-centered approach emphasizes on the students and the knowledge they acquire. For this reason, the role of the educator according to Spencer and Jordan (1999), shifted from that of didactic teacher to that of a facilitator of learning. The advent of knowledge-based learning ushered in transdisciplinary approaches to learning and the establishment of academic link with industries and the society by breaking down traditional academic disciplines. Based on this, the classroom is no longer a place where the teacher pours knowledge into passive students, who wait like empty vessels to be filled. In the 21st century students are encouraged to be actively involved in

their own process of learning and often time take responsibility of their learning. Brainstorming technique can help students achieve these. The teacher functions more as a facilitator who prompts, coaches, mediate and helps students develop and access their understanding and thereby their learning. One of the teacher's biggest job becomes 'asking good question' thereby spurring both teachers and learner to acknowledge the dynamism of learning just as the world we live in (Segun & Emmanuel 2018).

Brainstorming technique is one of the most effective techniques in provoking creativity, innovation and solving problem in the educational, economic, industrial, commercial and political fields. Brainstorming technique was introduced by Alex Osborn, an American advertisement company manager in 1938 as a result of his inconvenience of traditional business meetings.

Brainstorming is one of the most popular idea generation technique that involves teaching with creative problem solving method to help students tackle problems they encounter in life regardless of its nature. Brainstorming is the process of generating new ideas and solutions through intensive freewheeling group discussion. Al-khatib (2012) stated that it involves the use of the brain to engage in active problem solving and the brainstorming session aims to develop creative solutions to problems. Al-khatib posited that brainstorming includes the breaching up of old ideas, making new connections, enlarging the limits of knowledge and the onset of wonderful ideas. Hoing (2001) defined brainstorming as the multiple thinking that includes the breaking up of old ideas, making new connections, enlarging the limits of knowledge and the onset of wonderful ideas. With regards to creative problem solving it is based on the cognitive theory that adopts the concept of the cognitive structure. It is the mental process of a solution to a problem. It is a special form of problem solving in which the solutions are independently created rather than learned with assistance. Problem solving always involves creativity (Qattami, 2010). Rabi (2017) noted that creativity is the ability to solve

problems, fashion products, define new question in a domain, or in a way that is usually considered noble, but ultimately become accepted in a particular cultural setting. Some researchers such as Gardner, Richard, Angel & Ann (1999) argues that Brainstorming is a frame of styles designed to help and enhance problem understanding, then generating new and different solutions and accessing those solutions using the creative skills. Brainstorming means the use of the brain to establish active problem solving, and the brainstorming session aims to develop creative solutions to problem (Jarwan, 2005).

Affirmatively, Rowan, (2004), defined brainstorming as a group or 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.

The subject Economics means different thing to different people. Adam Smith (1776) saw Economics as “An enquiry into the nature and causes of wealth of nations.” To him Economics is all about the making of wealth. Adam Smith was the first person to put a work together on Economics by writing a *treatise*, “Wealth of Nations” He is popularly regarded as the father of Economics. Similarly, Backhouse and Steven (2009) looked at Economics as the science that treats phenomenon from the stand point of price. This definition stressed the importance of exchange and seeks to explain that Economics deals with things that have a price value, which implies that for any goods or service to be of any Economic importance, it must have a price attached to it. However, the most generally acceptable definition of Economics is the one put forward by Robbins (1932), he defined Economics as “The science which studies human behavior as a relationship between ends and scarce means which have alternative uses”

In the context of this work, Economics is a programme of study that equips an individual with the requisite knowledge, skills, attitude and characteristics that will prepare them as financial

managers, Economic planners and business operators, and at the same time be readily equipped with the competencies required for employment. According to Ejiro-Oghene and Bamiteko (2018), academic performance is the outcome of education, the extent to which a student, teacher or institution has achieved their educational goals. There are many factors influencing students' performance. Good academic performance is a quest for most teachers and a primary goal of most educational researchers in Nigerian colleges and institutions. Williams (2015) identified some of the factors: technique and method used in teaching the subject, teacher teaching the subject, utilization of instructional materials for teaching the subject, competence of teacher's teaching the subject, teacher's level of education, teacher's area of specialization and teacher's years of experience.

Besides, it has equally been linked to the kind of attitude and professional disposition of the teachers teaching the course to the students who are the recipient of the skills and knowledge of the course in Economics. The quality and performance of students have always been a focus of concern in education, and teachers' education research (Darling-Hammond, 2000; Ingersoll, 2001; Chan 2003; Okpala&Ellis, 2005). Chan (2005) believes that the quality of teaching is not governed by the qualification, knowledge and skills competences of teachers alone but also their instructional technique, enthusiasm, knowledge of subject matter, teacher moral and commitment to teaching. This study sees teacher's factor as functionality that decide students' academic performance. Moving on, Brainstorming provides an opportunity for the Economics teachers to pose a problem and ask students to suggest as many solutions as possible in a brief period. Learners cannot be prepared for present and future endeavors through pouring information to them through the traditional teaching methods that depend on the teacher for their development and changes in their behavior in the first place. However, this must be done through guiding students towards achieving knowledge and understanding in relationship with critical thinking and creativity since we live in the era of openness

between communities requiring us to employ information and investing it in solving problem in the environment leading to the development of the ability as well as developing innovation and creativity (Qutoshi 2014).

These is what boards the mind of the researcher to find out the extent at which brainstorming technique influence students' academic performance in Economics. Brainstorming is simple and also effective when used as a strategy for teaching Economics especially because it activates the students' background knowledge and captures introduction of new concepts and their interest as well. While the students are learning the teacher can determine whether they possess enough background knowledge to move ahead with the lesson or not. (Rowan, 2004). On the other hand, creative thinking is known as the compound mental activity aiming to direct a strong desire to look for solutions or reaching original solution that were not known before (Jarwan, 2008). As earlier mentioned, brainstorming technique was introduced by Alex Osborn, an American advertisement company manager in 1938 as a result of his inconvenience of traditional business meetings, the idea was originally made popular by him in 1953. He claims that individuals working alone to come up with ideas are less efficient than when the idea is generated through Brainstorming. Though the assertion may be questionable in modern days, through research it is used to refer to all group ideation session.

Going further, Fidel and Trilling, (2010) enumerate on the current system of university education, the 21st century skills as broad set of knowledge, skills, work habits, and character traits that are believed to be of critical importance to successes in today's world, particularly in collegiate programmes and contemporary careers and workplace. This challenge has result in the higher education sectors acting reactively to adapt to this movement, following situational pressure as well as scientific and sociocultural development. However, with regard to these challenges, the academic

situation looked in to brainstorming technique as a panacea for promoting creativity and innovation needed to fill these gaps. In the same vein, Fidel and Trilling (2010) enumerate on the current systems of university education that the skills requirement which define this generation and the characteristics traits are expected to be critical and significant in today's knowledge as a prerequisite for collegiate programmes contemporary workplaces and careers. With this vein in mind, the quest to successfully prepare students with the skills and capacity for 21st century citizenship, global awareness, innovation, creativity, collaborative problem-solving and self-directed learning is paramount.

In the words of Onyemaechi (2019) no meaningful learning or transfer of what has been learned will take place if such learning occurs in a situation devoid of relevant technique and activities as well as concrete experiences. Finally, result, observation, research and educational leaders have found out that the old or traditional methods of learning that have evolved in the last century have failed us, and is insufficient in achieving these objectives. In the light of this, while the outer world was transforming, considerable advancement has been made in the sciences, forcing educators to brainstorm and reconsider how this approach to learning, instruction, and the environments are created to foster education. This technique (brainstorming) will in every ramification help students spread their wings and explore new depths of their own studies.

STATEMENT OF THE PROBLEM

As the society is transiting from industrial economy to knowledge economy, there is high need of brainstorming technique to be used in instructional delivery especially in a subject like Economics. Brainstorming technique is a major driver of this knowledge economy, productivity and economic growth. Brainstorming technique is highly essential in academic sustainability and survival. Despite the abundant opportunities in Economics in the field of finance, marketing, office, salesmanship,

accounting, information communication and technology, an appreciable number of economists and educationists still lives in abject poverty and hence unable to contribute meaningfully to sustainability development of the nation. Furthermore, the role of the teacher had evolved and developed to be a facilitator and trainer, this requires him to use teaching method such as brainstorming and other techniques that can develop creative thinking skill among Economics student to salvage the mishap of unemployment and poverty ravaging the society today. This is because Economics teachers seldom use brainstorming technique in teaching Economics in order to overcome the numerous challenges that emanate from poor living condition, and I am worried. Brainstorming is absolutely necessary. It is however imperative to think out solutions to the problems and implement such decisions successfully (Nwagbguru and Enege 2018). Again, the major reason why students industrial work experience scheme and entrepreneurship education were introduced into education curriculum was to promote self-reliance through enhancement of creativity for sustainable development; but these objectives are not being achieved today in the State as evidenced in a lot of education graduates still looking for white collar jobs or doing menial jobs despite numerous opportunities available in education. In addition to helping in problem solving, brainstorming can assist education students identify problems even when others have failed to do so. It is therefore critical that this study is undertaken to stem poverty emanating from unemployment and promote students' creativity skills in Economics among students in Calabar Municipality Cross River State in order to enhance self-reliance for sustainable development. Also, based on the experiences and result from Economics teachers over the years, student's academic performance in Economics has been consistently poor only small proportion successfully complete and pass examination with good grade. Poor academic performance of students in Economics has been an issue of concern to teachers, students, moderators and stakeholders of Economics subjects, as term

result sheets often times indicate poor performance. Due to the importance of the concept (Brainstorming) the study aims to examine its effectiveness on students' academic performance.

RESEARCH QUESTIONS

The research question that guided the study was:

1. To what extent does individual brainstorming approach influence academic performance in economics?
2. How does group brainstorming approach influence academic performance in economics?

STATEMENT OF HYPOTHESES

The following research questions were formulated to guide the study

1. There is no significant influence of individual brainstorming approach on students' academic performance in economics.
2. Group discussion method of brainstorming does not significantly influence on students' academic performance in economics.

METHODOLOGY

The study adopted a survey design. The survey research design was considered for this study because it involves the collection of data to accurately and objectively describe existing phenomena, and therefore very useful for opinion studies, which is what this study wants to do. Ndiyo (2010) noted that survey design is usually geared towards determining the nature of a situation by collecting a large and small sample from the population in order to make inferences and valid generalization and there is no control or manipulation of variables as in experimental design. Isanghedigi (2012) collaborated this when he described survey research as a design which is specifically designed to systematically collect data about a group of individuals, who have same characteristics through the use of written or oral data collection instruments; interview, questionnaire, telephone, mails and the

internet, concerning particular responses on facts, opinion attitude etc. The sample size was 128 respondents drawn from 5 secondary schools out of 16 public secondary schools in the study area. In selecting the sample schools, simple random sampling technique was adopted in the selection of students and teachers for this research. The main instruments used for data collection was a questionnaire designed by the researcher titled “Influence of Group Discussion Questionnaire” (IGDQ), and “Achievement Test in Economics” (ATE). The questionnaire has two sections (section A and B), section “A” sought information on respondents’ personal data such as name of school, sex, marital status, educational qualification, and teaching experience. Section B, was a twenty (20) items questionnaire. The items were designed based on four points Likert’s, scale format, such as strongly Agree (SA) 4 points, Agreed (A) 3 points, Disagreed (D) 2 points, Strongly Disagreed (SD) 1 point, for positive items the reverse was the case for the negative items. Achievement Test in Economic (ATE) with 20 multiple choice questions. They were required to choose the correct option from A to D. the question was set from senior secondary school syllabus in Economics. The researcher administered copies of the instrument to the respondent with the help of two research assistants. Data collected were analyzed using descriptive (mean and standard deviation) and inferential statistical analysis (correlated t-test statistics) were employed.

RESULTS AND DISCUSSION

The results of the data collected were discussed hypothesis by hypothesis as presented below.

Hypothesis one;

There is no significant influence of individual brainstorming approach on students’ academic performance in economics. The independent variable in this hypothesis is individual brainstorming while the dependent variable is academic performance in economics. To test this hypothesis, individual brainstorming was categorized in to experimental and control group. And academic performance test where admixture to the respondents. The results is presented in Table 1:

Table 1 Pared sample statistics of individual brainstorming approach on students’ academic performance in economics.

Group	Mean	N	Std. Deviation	Std. Error	df	LS	t	p-value
Pretest score	17.7623	122	5.00752	.45336	121	.05	6.72	.001
Post test scores	1.5000	122	.50206	.04545				

*P<.05

Table 1 revealed that the pretest post test score for respondents on individual brainstorming approach on students’ academic performance in economics. From the results, the p-value was found to be .001 which is less that the chosen alpha of .05.thus the null hypothesis is rejected. This implies that there is a significant influence of the individual brainstorming approach in respect of the pre-test and post test scores on students’ on their academic performance in Economics.

Hypothesis two:

Group discussion method of brainstorming does not significantly influence on students’ academic performance in economics.The independent variable in this hypothesis is group discussion approach of brainstorming while the dependent variable is academic performance in economics. To test this hypothesis, group discussion approach of brainstorming was categorized in to experimental and control group. And academic performance test where admixture to the respondents. The results ispresented in Table 2.

Table 1 Pared sample statistics of individual brainstorming approach on students’ academic performance in economics.

Group	Mean	N	Std. Deviation	Std. Error	df	LS	t	p-value
Pretest score	16.03	122	4.093	.345				
Post test scores	14.08	122	2.011	.324	121	.05	5.093	.000

*P<.05

Table 2 shows that the pretest post test score for respondents on group brainstorming approach on students’ academic performance in economics. From the results, the p-value was found to be .000 which is less that the chosen alpha of .05, hence, the null hypothesis is rejected. This implies that group method of brainstorming with respect to the students pre-test and post test scores has a significant influence on their academic performance in Economics..

Discussion of the Findings

The finding obtained from the analysis of data with respect to the hypothesis in table 1.revealed that individual brainstorming technique significantly influence students’ academic performance in Economics. This finding is in collaboration with the study of Algorishi (2008) who opined that brainstorming as an instructional technique enables students develop their thinking and retention capacity thereby improving their academic performance. Brainstorming is simple and also effective when used as a strategy for teaching Economics especially in the introduction of a new concept. It is effective because it activates the students’ background knowledge and captures

introduction of new concepts and their interest as well. also it was found that group brainstorming approach has a significant influence on the academic performance of the students in Economics. This result is not a surprise to the researcher because when most students are taught in group they easily understand than on individual basis. The finding agree with that by Al-Olimat (2008) studied the effect of brainstorming and discovery strategies in developing creative thinking among eight Grade in science in Jordan. The findings of the study showed that there is an evident effect of brainstorming and discovery in developing creative thinking, which is in line with this study. Moreover, there were significant difference between both strategies in the favor of brainstorming. Finally, Al-Abadi, (2008) conducted a study to explore the effect of an educational programme in developing creative thinking skills among gifted disabled students. The findings of the study showed that there was statistical significant difference in the interaction between the program and the intelligence rate in developing creative thinking skills among those students which is also in line with this study.

Summary and Conclusion

Based on the findings, it was concluded that students' academic performance in Economics was actually influenced by brainstorming technique. The technique used by teacher to deliver his instruction makes the most significant relative contribution to the determination of students' academic performance in Economics subject in secondary schools in Calabar Municipality, Cross River State. Also, the need for Economics teachers at the secondary school level to vary the technique (brainstorming) cannot be overemphasized, as a lot still need to be done in order to improve the effectiveness of Economics teachers in employing brainstorming technique in the study area. This would create positive disposition of students to Economics as Entrepreneurship Education rather than being seen as academic education. It was also concluded that the technique used in

teaching Economics subject should be creative, innovative, collaborative, problem-solving, self-directing and not only helps to build students' interest which in turns would lead to attainment of high score marks.

RECOMMENDATIONS

The researcher advanced the following recommendations based on the findings and result of the study.

1. Government and educational stake holders should collaborate to match this technique (brainstorming) to the lesson plan.
2. People with academic qualification should mandatorily go through teacher education courses that will equip them with techniques and pedagogical skills before allowed to teach.
3. Prospective teachers while undergoing training should be equipped with adequate knowledge and skills on the use of brainstorming technique and the various ways and stages in which it can be used.

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