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IMPACT OF PRIOR KNOWLEDGE OF BEHAVIOURAL OBJECTIVES ON STUDENTS' ACADEMIC PERFORMANCE IN ENGLISH LANGUAGE IN SENIOR SECONDARY SCHOOLS IN BIU, BORNO STATE, NIGERIA

ABDU MOHAMMED

DEPARTMENT OF EDUCATIONAL FOUNDATIONS, C.O.E WAKA-BIU

Abstract: **This study aimed at investigating the impact of prior knowledge of behavioural objectives of a lesson on students' academic performance in Biu local Government Area Borno state. A quasi experimental pretest – posttest – control group design was used for the study. Four groups (comprising 360 senior secondary two (SS11) students from Biu Community Secondary School in Borno State were taught for 6 weeks of 14 sessions. Three of the groups were prior-presented with objectives on topics in English at different time intervals before each lesson while the control group was taught without prior knowledge of behavioural objectives. Test instrument, Researcher made performance Test (RMPT), comprised of a 35 item multiple choice questions, was administered one week before the teaching session as pretest and 5 weeks after the teaching session as posttest. Data collected was analyzed by Analysis of Covariance (ANCOVA) and Schefe's pairwise comparisons at 0.05 alpha levels. The result showed an initial mean difference (ID) of 3.87 at pretest level for the treatment and the control group and a net mean difference (NMD) of 2.96. The net mean difference showed there was a gain for the treatment group. Also there was no significant gender difference on academic performance of students taught with prior knowledge of behavioural objectives and those taught without it in the (experimental and the control group). Table 4.2 on gender (F3), F=0.202, df(1,359),p-value= 0.653, partial eta square =0.001. Since p=0.6537>0.005, it means there is no significant difference on gender, therefore, Null hypothesis $H_0$2 is accepted. The partial eta square 0.001 shows there is no effect of gender on academic performance in senior secondary schools in Biu local area Borno state.**

Keywords: **behavior objectives, academic performance, and prior knowledge.**

1. INTRODUCTION

A common problem faced by teachers in senior secondary education is that students lack important prior knowledge and skills needed when they enter the more advanced courses in their curriculum. This is not only a challenge for students and teachers, but also an important issue in curriculum design. The essence of teaching and learning is to achieve a certain remarkable change in behaviour of learners and for the teacher to achieve the stated specific objectives of the lesson. This study was focused on examining the impact of the prior-knowledge of behavioural objectives on the academic performances of students in English language in senior secondary schools in , Borno State Nigeria.

Prior knowledge or Base knowledge is identified by (Uche, 1997).and Edinyang (2006) as knowledge available to the learner before a learning task begins, maintaining that it can interfere with later or present learning either retroactively or proactively. As any other, English instruction is a cluster of decisions and activities culled into the teaching-learning

situation a direct effect of prior knowledge facilitating the learning process and leading to better study results; an indirect effect of prior knowledge is optimizing the clarity of study materials; and an indirect effect of prior knowledge, optimizing the use of instructional and learning time.

This study examined the background knowledge of what educators at all levels continually seek in order to advance student learning in the classroom. Since ancient times educators have been interested in pedagogical techniques and ideas about how human beings learn best and ways of increasing performance. They also outlined some steps for successful learning that teachers must follow if students are to learn materials. One of these pedagogical techniques and ideas is setting learning objectives before the commencement of instruction (Fakhri, 2011).

An objective is simply a result or consequence of an action or process. Learning objective is what results from a learning process. They are statements that predict what learners will have gained as a result of learning (Aiken,2000). Some definitions stress that a learning objective is a sort of contract that teachers make with learners that describes what they will be able to do after learning what they could not do before. They must be specific and clear statements of what students are expected to learn and able to demonstrate at the completion of their program of study. (Ramsden, 2003) describe it as the competencies that students should possess upon completion of a course (Marsh,2007; Kennedy, 2007)

Because objectives direct attention to the types of behaviour students should exhibit, sometimes these statements are called "behavioural objectives" or intended learning outcomes". A learning objective answers the question: "What is it that your students should be able to do at the end of the lesson that they could not do before? They usually form the starting point of the lesson plan for effective teaching.

Therefore, there is a need to empirically explore how different types of prior knowledge as specified above impact student performance in a more advanced course, such as English language, and to explore whether the knowledge students gain is retained as their studies proceed. Throughout this study will juxtapose the results obtained with the following question: could prior-knowledge assessment be used as an instructional support tool in language education?

Statement of the Problem:

Dismal outcome of teaching and learning in senior secondary schools in Borno state is dwindling at an alarming rate. The academic performance of students is always decreasing by the day; this can be seen from the low performance of the students at the SSCE levels. The study of prior knowledge of behavioural objectives may have great impact on both the teacher and the students in addressing the issue of low performance. The general decline in achievement of students in social studies manifests in the learners' failure to comprehend the core subject matter or content learned, and in their inability to read and understand questions asked or instructions given during examinations. This situation has contributed greatly to the frustration of teachers, who complain incessantly that their painstaking instructional efforts are not yielding the expected learning results. The students themselves no longer have confidence in their ability to understand, apply and reproduce what they have studied, resulting to cheating at examination as measures to cover up their academic capabilities. Emphasis has been placed previously on the use of instructional materials and effective methods to reverse this trend, but with little or no positive result. It is in the light of this that the researcher investigated if prior knowledge of behavioural objectives has any effect on students' achievement and performance in English language

The huge gap of poor academic performance of students in primary, secondary and tertiary institutions is of great concern to parents, school proprietors, educators and the public in general. The performance of students in senior secondary school (SSS), especially, in English language has remained consistently poor. In fact, a survey of the performance in English language in recent times reveals a discernable decline (Kesimba, 2004). This decline persist in spite of improved instructional materials and strategies used. It is possible, that these various improved instructional materials and methods have failed to achieve the desired results in improved performance in English language.

The general decline in performance of students both male and female in English language manifests in the learners' failure to comprehend the core subject matter or content learned, and in their inability to read and understand questions asked or instructions given during examinations. This situation has contributed greatly to the frustration of teachers, who complain incessantly that their painstaking instructional efforts are not yielding the expected learning results. The students themselves no longer have confidence in their ability to understand, apply and reproduce what they have studied, resulting to cheating at examination as measures to cover up their academic inabilities. Emphasis has been placed previously on the use of instructional materials and effective methods to reverse this trend, but with little or no positive result. It is in the light of this that the researcher investigated if prior knowledge of behavioural objectives has any effect on student's performance in English language.

Objectives of the Study:

The objectives of the study are to:

1. Determine the impacts of prior knowledge of behavioral objectives on academic performance of senior secondary school students in English language

2. Examine any significant differences in level of academic performance of the (control group) in a lesson taught without prior knowledge of the behavioral objectives of the lesson.

3. Determine gender significant difference on academic performance and the impacts of prior-knowledge of behavioral objectives on the learners in the two (the experimental and the control) groups.

Hypotheses:

The study tested the following hypotheses:

H_{01} There is no significant difference in academic performance of senior secondary school learners in the (experimental group) in a lesson taught with a prior-knowledge of the behavioural objectives and those taught without it in the (control group).

H_02 There is no significant gender difference in academic performance of senior secondary learners taught with prior knowledge of behavioural objectives and those taught without it in the (experimental and the control group).

The study will further be beneficial to curriculum planers to enhance modalities of achieving learning objectives in program learning when planning the curriculum.

The study will be important to head teachers who take on the task of overseeing the activities of teachers in their schools for maximizing efforts in achieving the objectives of their lesson in good time. The students will be direct beneficiaries of the study in developing constructive cognitive retentive activity in the classroom if objectives of the lesson are shown to them prior to the commencement of the lesson.

2. CONCEPTUALISATION

The study was based on Piaget's Cognitive Development Swiss theorist Jean Piaget (1896-1980) the theory is often credited with opening the door to studies of modern cognitive development. His multifaceted research in developmental psychology and genetic epistemology (the study of the formation and meaning of knowledge is driven by his curiosity about how knowledge grows and develops in the human mind. His fundamental proposition that the growth of knowledge is a progressive pattern of increasingly sophisticated stages of mental faculty continues to serve as the backbone of cognitive development theory.

The scientific study of teaching is a relatively new development; until the 1950s, little systematic observation and experimentation took place. The research on teaching has been consistent in its implications for academic achievement. The variables that educational psychologists have found to be important in classroom teaching include the time teachers allocate to instruction, the amount of content they cover, the percent of time that students are engaged in learning, the congruence between what is taught and what is tested, and the ability of the teacher to give clear directions, provide feedback, hold students accountable for their behaviour, and create a warm, democratic atmosphere for learning (Fakhri, 2011).

Components of The theory: Constructivism theory is concern with Cognitive Development .The core notion of cognitive development is that children develop skills and abilities in more or less predictable sequences. While not all children develop at the same rate, they do all pass through common phases of cognitive, physical, and social development. At different ages, children think in different ways. Cognitive psychologists study students' perceptions and analyses of the world around them. Children become increasingly capable of handling more complex and abstract ideas. For example, younger children may have difficulty interpreting figurative language. And, over the course of adolescence, students generally can handle more and more sophisticated problem solving. As teachers, we should encourage students to think about and describe the strategies they are using to access knowledge. Understanding cognitive development allows teachers to properly select curriculum and activities and to scaffold instruction so that students are challenged, but not frustrated.

Learners should constantly be challenged with tasks that refer to skills and knowledge just beyond their current level of mastery. This captures their motivation and builds on previous successes to enhance learner confidence (Brownstein 2001). This is in line with Vygotsky's zone of proximal development, which can be described as the distance between the actual developmental level (as determined by independent problem-solving) and the level of potential development (as determined through problem-solving under adult guidance or in collaboration with more capable peers) (Vygotsky 1978).

Vygotsky (1978) further claimed that instruction is good only when it proceeds ahead of development. Then it awakens and rouses to life an entire set of functions in the stage of maturing, which lie in the zone of proximal development. It is in this way that instruction plays an extremely important role in development. To fully engage and challenge the learner, the task and learning environment should reflect the complexity of the environment that the learner should be able to function in at the end of learning. Learners must not only have ownership of the learning or problem-solving process, but of the problem itself

However, the relevance for the adoption of this theory was based on the fact that child's cognitive development builds on prior knowledge. Another theme running through all cognitive development theories is that very little, if any, knowledge is actually written on a "blank slate." New knowledge must be built on prior knowledge for students to achieve understanding. That is, no new idea can be explained for someone unless that person has some starting place for the explanation. As teachers, this concept reminds us to do all we can to build that prior knowledge. Again, we must expose our students to a vast array of experiences and ideas, as they will serve as foundations for more experiences and ideas.

3. MATERIALS AND METHODS

The researcher used Quasi-experimental research design which involve Pretest, Posttest for the purpose of this study to guide in the process; hence there were two groups for the study: the treatment group (those who were exposed to the objectives of the lesson prior to the commencement of the lesson) and the control group (those who were not exposed to the objectives of the lesson at all). According to Ediyang (2012), quasi-experimental design allows for the manipulation of the independent variables) in research. This design was appropriate for this study because the independent variables can be manipulated by the experimenter under controlled conditions and their impact by observing the difference between these groups at the experimental and the control level. The pre-test was given before teaching the students to assess the level of entry behaviour of the treatment and the control groups.

The pre-test, post-test, non-randomize nonequivalent, Control group design involving a 2 x3 factorial was used. The Instructional Strategy was at two levels (experimental and the control groups), while the scoring level at the pre test and post test items. The illustration is given below:

O1 X O2 Experimental group with behavioural objectives presented

O3 O 4 Control group (no presentation ofbehavioural objectives)

Where O1, and O3 were pretest for the two groups and O2 and O4 were posttest for the two groups.

Population and Sample:

The target population of this study consisted of all the SS 2 students in of Borno State, Nigeria. In Borno State there are eighty five(85) Senior Secondary Schools with estimated ss11 students population of eleven thousand three hundred and twenty five (11325) during the 2015/2016 academic session(Teaching Service Board, Borno State 2014).These secondary schools were distributed among the four Education Zones of the state as follows: Biu, 18; Gwoza,26;Maiduguri, 27;Monguno,14. The researcher will use purposive sampling to select Biu Local Government from the four Educational Zones in the State. The study purposively selected one school at random from Biu Local Government Area as a case study.

The choice of SS2 students for the study was based on the fact that they are stable. This is because SS1 students are newly introduced into the senior classes while SS111 students are busy preparing for their senior school certificate examination, so, they were not be suitable to be used for the study and it will not be easy for the researcher to obtain permission from the school authorities to use them.

The samples were randomly selected and assigned to different treatments to avoid interaction that may occur among the groups if two or more groups were located in the same school. To avoid disrupting the school program or arrangement, intact classes were randomly selected and used. A total number of 360 SS 11 students were randomly sampled (The

experimental group has 206 students and control group has 154 students).The sample for the study was randomly selected from the case study area, among senior secondary schools in Borno State Krejcie and Daryle w. Morgan(1970) Determining Sample Size For Research Activities was used to arrive at the sample size for the study

From the sampled school, the researcher assigned a research assistant who as assisted and taught a topicsin English language at two different groups (the control and experimental group groups), at the end of the lessons an academic performance test was administered on the subjects to assess the level of performance of the students base on the experimentation. The outcome of the test was analyzed using the appropriate descriptive statistical tools assign for the study.

Instruments:

Researcher made performance test (RMPT) objective test was the instrument to use for data collection for the study. A qualified English language teacher (research assistance) was involve in the experimentation, the teacher was assigned a topic to teach for a period of 40 minutes on the experimental group (those who were shown the objectives of the lesson prior to its commencement), same topic was repeatedly taught on the control group (those who were not be shown the objectives of the lesson at all).

Procedure for Data Collection:

The procedure used in the collection of data was through a special instrument of test Researcher Made Performance Test (RMPT) thirty five item test was designed and administered on the sample of the study. This include both the treatment and the control group. The research was carried out at Biu Community Senior Secondary School; S.S. two (2) students was sampled for the purpose of the study

There was a six weeks of activities which involved pretest and posttest after 14 teaching sessions in relevant topic in English language:Grammatical structure from the curriculum work scheme of SS11 syllabus; parts of speech: norminalisation, reading comprehension, registers, and vocabulary development before testing was conducted. The test instrument contained 40 multiple choice objective questions which was adopted from WAEC General English language questions from 2013-2016. This was based on the topics that was taught by the teacher (research assistant) in line with the SS11 Scheme of work.

Method of Data Analysis:

The data collected was analyzed using descriptive statistic of mean and inferential statistic of Analysis of Covariate (ANCOVA). The mean was used to test the hypotheses. ANCOVA is a statistical test that removes any initial difference of groups and increases the correctness of data and results of experimental study. Decision rule will be, if the p- value is less than 0.05,then the null hypothesis will be rejected, but if it is greater than the p- value, it will be accepted.

T-test of independent and dependent variable analysis will be used for data analysis. t-test according to Ojiwola (2007) is a statistical tools used for analyzing the difference between experimental treatment and control groups on independent variables base on pre-test, post-test design and under situations where subjects were selected or used as an intact group. It is also used as technique for controlling extraneous variables and contaminations, as well as means of increasing the power of the analysis done using it. Therefore, t-test is the suitable tool for the analysis of the data to be collected. The relevance for the use of analysis of covariance become clear because there are two major variables in the study, first the study will determine the impact of the prior knowledge of the academic performance of the students if they are shown the objectives of the lesson and those who will not be shown the objectives. This call for the test of the significant differences if any justification for the use of t-test: t- test of significant difference is a statistical tool use to determine whether two means, proportions , or correlation coefficients differ significantly from each other . It is also use to determine whether a single mean proportion or correlation coefficient differs significantly from specified population value Ojile,(2010). The t-test will therefore determine whether null hypothesis can be retained if there is no significant difference on impact of academic performance of experimental and control group.

4. DATA ANALYSIS AND RESULTS

Test of hypothesis 1

H_{01} There is no significant difference in academic performance of senior secondary school learners in the (treatment group) in a lesson taught with a prior-knowledge of the behavioural objectives and those taught without it in the (control group).

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Table 4.1: Table of Mean Difference between Treatment and Control Groups on Pretest and Posttest

Group	N	Pretest X(F6)	SD	posttest X(F7)	SD	MD
Treatment	206	25.77	6.424	33.70	5.253	7.93
Control	154	21.90	5.449	26.87	3.947	4.97
Md		3.87		6.83		2.96

Table 4.1 above revealed that the performance of senior secondary school students taught English language with prior knowledge of the behavioural objectives given at the treatment group. The result showed an initial mean difference (ID) of 3.87 at pretest level for the treatment and the control group and a net mean difference (NMD) of 2.96. The net mean difference showed there was a gain for the treatment group.

Therefore

H_{01}

In table 4.2 below on treatment and control group method (F2), F=247.364,df=(1,359) p-value=o.ooo. Since p=0.000<0.05, means there is significant difference between the two groups. Therefore, H_{01} was rejected. Partial eta square of 0.411 shows the effect size in favour of the treatment group was 41%.

Table 4.2: Summary of two ways ANCOVA of students' score on group and gender:

Dependent Variable: F5

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10243.839[a]	4	2560.960	476.893	.000	.843
Intercept	4062.525	1	4062.525	756.509	.000	.681
F4	6090.294	1	6090.294	1134.113	.000	.762
F2	1328.367	1	1328.367	247.364	.000	.411
F3	1.087	1	1.087	.202	.653	.001
F2 * F3	4.198	1	4.198	.782	.377	.002
Error	1906.383	355	5.370			
Total	353168.000	360				
Corrected Total	12150.222	359				

Interpretation of key terms F

F2*F3 Degree of relationship between performance of male and female, **F3**, Gender, **F4** posttest for control group, **F5** independent variable, **F6** pretest for treatment group, **F7** posttest for treatment and control group **F8** dependent variable, F9 pretest for control group

Test of hypothesis 2

H_02 There is no significant gender difference on academic performance of senior secondary students in Biu local government taught English language with prior knowledge of behavioural objectives and those taught without it in the (experimental and the control group). From table above on gender (F3), F=0.202,df(1,359),p-value= 0.653, partial eta square =0.001. Since p=0.6537>0.005, it means there is no significant difference on gender, therefore, Null hypothesisH_02 is accepted. The partial eta square 0.001 shows there is no effect of gender on academic performance.

Summary of findings:

The following findings were made:

1. There was difference in performance of the two groups experimental and control after treatment on effect of prior knowledge of behavioural objectives on academic performance. Hence p=0.000<0.05 it means there is significant difference between the groups, therefore H_{01} was rejected. Partial eta square 0.411, shows the effect size in favour of the treatment group was 41%.
2. On gender and academic performance, in senior secondary schools in Biu local government area Borno State. Findings shows there was no significant difference on male and female performance. Findings shows there was no effect prior knowledge of behavioural objectives on gender and academic performance on the two groups (experimental and control) after treatment.

5. DISCUSSION ON FINDINGS

The influence of prior knowledge on student performance, the objectives of the study were to explore how different types of prior knowledge are related to student academic performance in English language as a core subject. The study started by creating a model of prior knowledge that distinguished between various types of prior knowledge and used test assessment methods to assess effect of accessibility knowledge. Subsequently, the model was tested on forty non-participating students in order to validate its functionality in a variety of English contexts and to gain more insight on the significance of prior knowledge in learning. In addition to confirming most major findings of previous studies on prior knowledge, the present study contributes to the research field by documenting the relationship between different types of prior knowledge and student performance. The studies analysed the effect of different types of prior knowledge components on student performance.

The results of all the studies showed, in general, that prior knowledge that consisted of procedural knowledge was significant related to student achievement in the course. The results of Study showed that procedural knowledge which requires higher-order cognitive skills best predicted the final grades and was also highly related to previous study success. This implies that if the student was able to successfully perform these tasks in previous courses, he/she was more likely to possess these skills at the beginning of the new course as well and, consequently, be more successful.

The study established that there was significant mean difference on the performance of the students of senior secondary schools in Biu, Borno state. This corroborates with Aniashi and Umoren (2007) study which investigated the effect of prior presentation of behavioural objectives of a lesson on students' retention of learnt materials; results indicated a significant enhancement in retention of learnt materials.

In similar studies, Marzano (2007) investigated the effective use of prior knowledge in teaching of Chemistry in secondary schools. He found that students' achievement scores, in classes where clear learning goals were established, presented higher than the achievement scores for students who did not have clearly established goals.This is in agreement with Guat and The's findings in (2002). It is also in harmony with Fakris' (2011) reports that students who were shown objectives before the lesson was presented performed significantly higher than those who were not shown objectives.Similarly, Beskeni and associates (2011) investigated how effective prior knowledge can help in the understanding of difficult chemistry concepts at secondary level teaching. A sample of (557) chemistry students was selected from 6 target zones. The findings have discovered that students' prior knowledge have tremendous implications on teaching and learning.

The findings of the study on hypothesis H01 shows there was significant mean difference on the levels of performance of the students at the two levels of pretest and posttest where initial difference existed on the mean performance of the students at 3.87 and a net mean difference of 2.96 after treatment. The net mean difference shows a gain of 41% partial eta squired. The gain in the performance of the students was as a result of the accessibility to the objectives of the lesson prior to commencement of the teaching/learning session.

$H_0$2 There is no significant gender difference on academic performance of senior secondary students taught with prior knowledge of behavioural objectives and those taught without it in the (experimental and the control group). From table 4.2 above on gender (F3), F=0.202, df(1,359),p-value= 0.653, partial eta square =0.001. Since p=0.6537>0.005, it means there is no significant difference on gender, therefore, Null hypothesis $H_0$2 is accepted. The partial eta square 0.001 shows there is no effect of gender on academic performance in senior secondary schools in Biu local area Borno state.

Contrary to Warrington and Williams (2004) which focus on the gender gap in English language in secondary schools. Their analysis was based on the performance of boys and girls in GCSE examinations in the UK and girls are found to get better grades than boys. This phenomenon is explained by boys' disregard for authority, academic work and formal achievement, differences in students' attitudes to work and their goals and aspirations and girls' increased maturity and more effective learning strategies.

This is in harmony with Kim, Rhoades and Woodard (2003) study which found that students achievement test (SAT) scores have a significant impact on students graduation, although at the individual level gender is a more powerful correlate of graduation than the SAT score. Women are also found to obtain better grades than would be predicted from their SAT scores (Leonard and Jiang, 1999; Hyde and Kling, 2001; Bridgeman and Wendler, 1991; Wainer and Steinberg, 1992). Many researchers claim that a large part of the under-prediction derives from the difference in course taking patterns of male and female college students. Ruling out differential course selection as an explanation for the under-prediction of female grades, Leonard and Jiang (1999) suggest that females have better study skills than the male students.

6. CONCLUSION

In conclusion, the impact of prior knowledge of behavioural objectives on students' academic performance in Biu Borno state was significant Findings of the study on hypothesis H01 shows there was significant mean difference on the levels of performance of the students at the two levels of pretest and posttest where initial difference existed on the mean performance of the students at 3.87 and a net mean difference of 2.96 after treatment. The net mean difference shows a gain of 41% partial eta squired. The gain in the performance of the students was as a result of the accessibility to the objectives of the lesson prior to commencement of the teaching/learning session.

On the other hand, $H_0 2$ shows there is no significant gender difference on academic performance of senior secondary students taught with prior knowledge of behavioural objectives and those taught without it in the (experimental and the control group). From table 4.2 above on gender (F3), F=0.202, df(1,359),p-value= 0.653, partial eta square =0.001. Since p=0.6537>0.005, it means there is no significant difference on gender, therefore, Null hypothesis $H_0 2$ is accepted. The partial eta square 0.001 shows there is no effect of gender on academic performance in senior secondary schools in Biu local area Borno state.

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