

EFFECTS OF PRIOR KNOWLEDGE OF BEHAVIOURAL OBJECTIVES AND STUDY QUESTIONS ON ACADEMIC PERFORMANCE AND RETENTION OF SENIOR SECONDARY SCHOOL STUDENTS

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Abstract

This study sought to determine the effects of students' prior knowledge of behavioural objectives and study questions on their academic performance and retention. The study is a quasi-experimental design using 3 x 2 factorial matrix. The population of the study is 1860 SS2 students who offer Government in the eight state secondary schools in the area. The study was conducted at Government secondary school Owerri municipal council using two intact classes of 45 students each, giving a sample size of 90 students. Related literature was reviewed on three broad areas. Six research questions and six null hypotheses were formulated. The instruments used was the Government Achievement Test (GAT) and Government Retention Test (GRT). Mean and standard deviation were used to analyze the research questions while analysis of covariance was used to test the hypotheses formulated at 5% confidence level. The results revealed that: providing students with a combination of behavioural objectives and study questions based on the topic to be taught led to better understanding of the topic and also enhanced performance and high retention. Providing students with prior knowledge of behavioural objectives and study questions irrespective of their personality variables led to enhanced performance and high retention. The implications of the findings for educational practice are that: teachers should make behavioural objectives and study questions available to students in written form and not only in lesson notes. Equally, the teachers should encourage students to read through the objectives and study questions before teaching commences. The study recommends that: teachers should employ prior knowledge of behavioural objectives and prior knowledge of study questions to enhance their teaching. Teacher education programme packages should include training in the use of prior knowledge of behavioural objectives and study questions.

KEYWORDS: Effects, Prior Knowledge, Behavioural Objectives, Study Questions, Academic Performance, Secondary Education.

Introduction

Behavioural objectives are statements of purpose on intent which inter alia provide hints to the expected learning outcomes. They serve as guide to both the teacher and learners as regards the content development and evaluation of the lesson. Usually behavioural objectives are stated in specific, measurable, quantifiable overt terms of the learners, Obilo (2014). Thus, they are never ambiguously or vaguely stated. This is to facilitate and ease quick comprehension or mastery of learning and thus attainment of objectives on the part of the learners. According to Mager (2005:15) “an objective is an intent communicated by a statement of what the learner is to be like when he has successfully completed a learning experience”. The definition suggests that there is a pattern of behaviour expected of the learner by the end of the lesson. The learner is to demonstrate behaviour that will indicate that learning has taken place. Mkpa (1981), Hartly and Davis (1996), Mager (2005), and Kibler, Cegala, Miles and Baker (2006), have suggested that the use of instructional objectives to guide instruction clearly specify to students what is to be learned and how to demonstrate learning.

Classroom practices show that some factors influence the extent to which students attain the stipulated lesson behavioural objectives. Some of these factors have to do with the teachers, students personality variables like type A and type B. The type A (the extroverts) are proactive and anxious group, the type B (the introverts) are the patient and enduring group, Friedman (2006); Friedman & Rosenman (2010) and Obilo (2014). Other factors include: the socio-economic status of the parents, resources for teaching and learning and instructional strategies adopted by the teacher as well as students’ initial comprehension of the necessary and relevant study questions. In that regard relevant resources, appropriate methodology, overt behavioural objectives as well as continuous and consistent lesson evaluation collectively aid the learners to learn with ease and sustained interest.

One of the important aims of an educational enterprise is to find ways of minimizing wastage in order to make the use of educational resources more effective and productive. Research findings in education tend to indicate that the instructional strategy adopted by the teacher can influence the cognitive and affective outcomes of the students (Mkpa, 1981; 1984). These instructional strategies may include adequate set induction couched in initial knowledge of behavioural objectives and study questions. Bloom (1956) hypothesized that instruction can be organized in such a way that all students in a class can achieve at a high level, that which is now accomplished only by the best students. The acceptance of Bloom’s assumption that almost all students can learn to a high level, psychologically stimulates students as well as teachers to search for ways which are likely to promote the learning of all and not just some students. Thus, feasible and practical instructional strategies that could improve cognitive and affective outcome in the Government studies classrooms need to be sought.

In Nigerian secondary schools, Government is one of the senior secondary school subjects. It is offered as an elective subject according to the Federal Republic of Nigeria (FRN: 2004). It is also examined by the West African Examination Council and the National Examination Council. As pointed out by Obeta (2009), Obilo (2017) and Uyanwa (2006), the study of Government has gained tremendous prominence in Nigerian Secondary schools over the

years. This according to them is due to the currency and society related nature of the topics and concepts taught in Government. They pointed out that students of Government see what they are taught in the immediate environment. They see and participate in such exercises like elections and the judicial processes while the language of the mass media in contemporary times has been largely one of Government. The Joint Admissions and Matriculation Board also listed Government as one of the qualifying subjects for admission into the post secondary schools in Nigeria (JAMB, 2010). It is thus, of great concern that the great desire shown by students in the study of Government does not meet with commensurate output results. In both internal and external examinations, students results in Government have tended to be poor, Obilo (2014).

Against the background that Government teachers follow the instructional procedures that run through statement of lesson objectives to lesson evaluation, it has become necessary to verify the efficacy of some of the provisions of the established teaching methods. One of such teaching principles is that every lesson must have stated expected behavioural objectives. One area that has been of interest to some researchers for a long time is the area of using behavioural objectives to improve students' academic performance. Also, Study Questions are questions that a teacher distributes or presents to the students prior to the lesson. They make the student to be aware of the type of questions to expect by the end of the lesson. Study questions prepare the students for the achievement and retention tests ahead. Mkpa (1985) saw study questions as questions that prepare and equip students ahead of the lesson. He also said it enhances learning and achievement and aids retention.

Behavioural Objectives

Behavioural objectives have been described as statements that describe what students will be able to do after completing a prescribed unit of instruction (Kibler, Cegala, Miles and Baker 2006). Mager (2005:28) and Obilo (2019) stated that "an objective is an intent communicated by a statement of what the learner is expected to be like when he has completed a learning experience" An objective is therefore a description of a pattern of behaviour that learners are expected to be able to demonstrate. Hartley and Davis (1996), Nwanaga (2008) and Akinyemi (2013) are of the view that behavioural objectives are best viewed as an attempt to improve both the quality and effectiveness of teaching. It is argued that by setting out what the student is expected to achieve, results can be brought more in line with expectation. Definitions and explanations of behavioural objectives have been offered by many other writers (Popham, 1984; Gronlund, 2008; Balogun, 2007; and Ogunbayo, 1988, Aniasha and Umoren 2013, Ifamuyiwa 2011, Obilo 2014). In general, they view behavioural objectives as statements of what the learner will be doing when he completes a prescribed learning activity. Put in another way, behavioural objectives refer to what the learner should be able to do when he completes a particular learning encounter.

A meaningfully stated objective is one that succeeds in communicating to the reader the writer's instructional intent. It is meaningful to the extent it conveys to others a picture identical to the one the writer has in mind. An objective that communicates best will be one that describes the terminal behaviour of the learner well enough to preclude misinterpretation. A statement of objective is useful to the extent that it specifies what the learner must be able to do or perform when he is demonstrating his mastery of the objective. One can only determine the state of the learners' intellect or skill by observing some aspects of his

behaviours or performance. This behaviour or performance may be verbal or non-verbal. He may be asked to respond to questions practically, verbally or in writing to demonstrate his ability to perform a certain skill or to solve certain kinds of problems.

Uses of Objectives in Education

Many educators among whom are Hartley and Davis (1996); Obilo (2014) supported that behavioural objectives can help learning. They argued that behavioural objectives provide students with a clear goal that can be used to organize learning activities, permit students to study more effectively and reduce the time wasted on irrelevance as well as provide a benchmark against which they objectively evaluate their own progress. Kibler, Cegela, Miles and Baker (2006) gave a detailed write up on the important place of behavioural objectives to students and to teachers. They stated that when behavioural objectives are given directly to students, the exact behaviour desired and the condition under which the behaviours are to be exhibited are specified. By being given instructional objectives, students do not have to guess what is expected of them in the learning setting, Obilo (2019). Learners spend their time acquiring behaviours specified by the teacher rather than attempting to infer what the teacher expects of them. Ogunbayo (1988:62) and Nwanaga (2008) stated that “students learn better and retain more when the instructional objectives of the teacher are clearly stated using behavioural terms”. They concluded that behavioural objectives enable the students to perceive progress as they move towards the specified goals.

Questions and Questioning

Questioning skill is an act of good teaching. Questions help teachers to ascertain the effectiveness of their teaching and also find out whether the stated objectives are achieved. It also helps the students to find out whether they are in tune with teaching. It also helps the teacher to evaluate the stated learners’ performance activities. According to Fisher, (2007:92) and Iwu and Ifegbo (2011:116) “questioning is the key technique in most teaching”. It can be used for many purposes. It is hard for a teacher to succeed unless he is a skillful questioner. Among the various uses of questions listed by Obilo (2014) are:- To evaluate the extent learning has occurred ; to motivate pupils to learn; to develop the ability to think; to help students organize materials and to establish rapport with students.

If the role of questions includes the above among others, it follows that there is the need to actually study the effect of questioning on academic performance, because the achievement of students is dependent on a combination of many activities. For a child to be expected to perform well, he must be motivated to learn, he must be able to organize material learnt and he must of course be able to remember the important points he has learnt. Questions indicate to students what they are to do and how they are to do it. They also added that when questions are at an appropriate level of difficulty for the students, they become very effective instructional cues for helping learners improve their learning and retention of materials. It is often used to break the monotony in the classroom.

Retention and Forgetting

As we encounter stimulus situations of all kinds, messages are received, evaluated, integrated and stored and other messages are sent out to the various organs of response. Why is it that the human brain cannot recall all the information sensitized to it? Why is it that some things are remembered more easily than the others? Is forgetting a special learning disability or

general cognitive phenomenon? In these and other similar questions, teachers have formed their opinions and attitudes based on subjective judgments and unverified assertions.

Bartlett (2002), emphasized the importance of motor or operating elements at all levels of the memory. But before the Bartlettian psychology, authorities like Freud and Bergon used to theorize that memory were a mere accumulation in the unconsciousness where it is forgotten or remained to be evoked. This suggested that the human memory is a reservoir of ideas from where information can be drawn from time to time. This impression held for a very long time and was perhaps unchallenged until Penfield (2003) explained the reactivation of memories by electrical stimulation of the temporal lobes which suggested a certain level of conservation. Memory is the term that is used to indicate the storage of learning. Penfield (2003) represents it as:

$$M = ALR = TAL - ALL \text{ where}$$

M = Memory
 ALR = Amount of Learning Retained
 TAL = Total amount of learning
 ALL = Amount of learning lost

This represents memory as total amount of learning minus amount of learning forgotten. The issues of retention and forgetting have tended to arouse curiosity in the study of short and long term memories.

Short and Long Term Memories

Writing in *A Neuroscience Primer, the Brain*, Thompson (2005) itemized the memory processes according to the time they take: very short memory, which lasts about 100 milliseconds, short term memory which is of a few seconds duration; working memory which stores recent experiences and long term memory which houses verbal material that has been rehearsed and motor skills that have been practiced. He reported after an experiment on short term memory that an average human memory can retain 7-2 digit items; this gives a minimum of 5 and a maximum of 9 items. It is therefore inferred that memory that cannot hold more than five items is classified as short term memory. Similar experiments by Penfield (2003) using the number of digit typology limits the short term memory to only five items.

Long term memory can retain information and retrieve it from a remote period to currency. According to Floyd (2008) and Gopsil (2009), since learning must persist over a reasonable period of time, it is a major problem for teachers to seek to understand the mechanism that operates in the process of transfer of information from short term to long term memories and how to facilitate this transfer.

Factors that Cause Forgetting

Some educational psychologists have observed that whereas similarity in meaning causes forgetting in long term memory, similarity in sound causes forgetting in short term memory. Clifford (2000) discovers that the more similar the activity interpolated between learning and recalling is to the original learning, the less the amount of the original learning that will be recalled. According to him, learning may be more thorough but the verbalism recall of the initial learning would be distorted.

It was Thorndike (2002) who proposed that forgetting is caused by disuse. In his law of exercise, he contended that the connection between stimulus and response is strengthened as

a result of greater practice. This suggests that one tends to remember learning which is rehearsed from time to time. Several other studies have pointed to the disuse theory for possible explanation on forgetting. Taylor reported after an experiment that the scores of zoology students tested immediately after lessons were higher than several months later, Floyd (2008).

Davis and Sinha (2000) found that older memory may have the greater probability of being retained. According to them older memories interact with newer ones and produce bonds from unconnected events. Some scholars, therefore speculate that time may not necessarily account for forgetting. It may be necessary to examine what happens between learning and recalling. It may be that the quality and quantity of recall depend on what the learner does while having the experience and the type of experiences that follow.

Emperical Studies on Behavioural Objectives

Mkpa (1981) researched on *the effect of behavioural objectives on achievement and retention in history*. The purpose of this investigation was to assess the effect of behavioural objectives on class achievement and retention in history.

Four hypotheses were formulated to guide this study. A total of six intact classes comprising 241 students participated. Three classes each were randomly assigned to the experimental and control groups. The findings demonstrate that when learners are aware of the behavioural objectives of their lessons prior to instruction, the material learned are not easily forgotten.

Nzewi (1990) researched on the effects of prior knowledge of behavioural objectives and study questions on achievement in Biology. The purpose of this investigation was to determine the effects of prior knowledge of behavioural objectives and pre-exposure to study questions on achievement in Biology.

The study revealed that: Providing students with a combination of behavioural objectives and study questions on topics they were taught in biology led to enhanced understanding of that topic and hence better performance; Giving students study questions and behavioural objectives will lead to great motivation to study; The students did not differ significantly in their attitude to biology by their being exposed to study questions and behavioural objectives. Okeke and Okadigbo (2012) researched on the effect of behavioural objectives and remediation on students' achievement in mathematics: A panacea for developing curriculum on climate change. The purpose of the study was to determine the effect of behavioral objectives and Remediation on students' achievement in mathematics. The study adopted a quasi-experimental pretest-posttest research design. Three research questions and three hypotheses guided the work. One hundred and five (105) senior secondary one (SSI) students from three purposively selected senior secondary schools were used for the study. This study went further to reveal that gender is not a significant factor in achievement of students in mathematics when taught with behavioral objectives and Remediation as advance organizer. Akinyemi (2013) researched on the use of pre-instructional strategies in the acquisition and retention of prose materials. The purpose of the study was to determine whether the use of pre-instructional activities such as an advance organizers, instructional objectives, introductions and overviews has effect on the acquisition and retention of prose materials. Sixty undergraduates enrolled in an educational technology course were randomly assigned to three experimental groups and one control groups. A 2x4 factorial design was used and the

analysis of various results showed no statistically significant results between the groups. Significant interaction effects were found between groups and test sessions on constructed response items. The study has shown that pre-instructional strategies in teaching, led to better acquisition and higher retention of prose materials.

Aniashi and Umoren (2013) researched on enhancing students' retention of learnt materials by prior presentation of behavioural objectives. This study aimed at investigating the effect of prior presentation of behavioural objectives of a lesson on students' retention of learnt materials. A quasi experimental pretest – posttest – control group design was used for the study. A total of four groups ('comprising 208 senior secondary one SS1 – students) from four different schools were taught for 6 weeks. Results indicated a significant enhancement in retention of learnt materials.

Salman, Yahaya, Yusuf, Ahmed and Ayinla (2012) researched on the effects of behavioural objectives – based instructional strategy on senior school students' academic performance in mathematics in Omu-Aran, Nigeria. The target population for the study comprised Senior Secondary Two (SS 11) students in Omu-Aran town. Purposive sampling technique was employed to select 179 students for the study. A quasi-experimental, non-randomized, non-equivalent, pre-test, post-test control group involving a 2 x 3 factorial design was employed as research design. Findings from the study showed that the experimental group significantly performed better in Mathematics Academic Performance Test than the control group.

Ifamuyinwa (2011) researched on the effect of behavioural objectives on students' achievement in senior secondary school mathematics instructions when used as advance organizers. In this study, behavioural objectives were used as advance organizers to teach some senior secondary school year two (SSS 2) mathematics topics. The study adopted a pretest, posttest control group quasi experimental design. Ninety SSS 2 students from two purposively selected senior secondary schools were used. Results revealed that the use of behavioural objectives as advance organizers is an effective strategy for teaching and learning mathematics. The strategy is also capable of improving students' mastery of content at the comprehension level than at the knowledge level of cognition.

Akande (2013) researched on effect of the physics teachers' use of behavioural objectives on senior secondary students' achievement in physics. The study aimed to ascertain the effect of the physics teachers' use of behavioural objectives on senior secondary students' achievement in physics. A quasi-experimental pre-test, post-test, non-randomize, non-equivalent, control group design involving a 2 x 3 factorial matrix was used for the study. The instructional strategy is at two levels (experimental and the control group); while the scoring level is at three levels (high, medium and low). A sample of 120 SS2 physics students from all the SS2 physics students in Ilorin was used. The findings from the study revealed that the experimental group had significant enhancement performance in physics than the control group.

Nwanaga (2008) researched on the effects of prior knowledge of behavioural objectives and study questions on academic achievements of students in integrated science. Quasi experimental using pretest, posttest control group design. Four research questions and seven null hypotheses were formulated. Junior secondary class two students (JSII) were used for the

study. Four intact classes of JSII integrated science were used. These students in their intact classes were each assigned to one of the three experimental groups and a control group and were separately taught using the respective conditions. The study reveal that presenting students with prior knowledge of behavioural objectives and prior knowledge of study questions on topics they were taught in integrated science led to enhanced understanding of the topic and hence better academic achievement.

Ukwuoma (2001) researched on the effects of end of lesson evaluation exercises on achievement and retention among students. The purpose of the study is to ascertain the effects of students' end of lesson evaluation exercises on achievement and retention in social studies. The study is a two group quasi-experimental design. Four research questions and four hypotheses were formulated to guide the study. The experimental group (48) while the control was also (48) students. The findings indicated that there is significant effect on achievement and retention among students of social studies.

Research on Study Questions

Study questions are typed questions that a teacher distributes to his/her learners prior to the instruction. This is to facilitate and enhance learning, retention and performance. Some researchers see study questions as inserted questions.

There have been some research works done on the effects of study questions on learning. Some of these studies have focused on the effect of different types of questions on achievement (Nzewi 1990, Mkpa 1985 and Mager 2005). Others concentrated on the effect of position of questions on learning. Mkpa, (1985) carried out a study whose purpose was to find out whether two types of review questions inserted at strategic points within students reading material would facilitate the learning and retention of the material. This revealed that the experimental group working with the inserted questions performed significantly better than the control group working without review questions in both achievement and retention tests. Furthermore, the group working with higher order questions performed significantly better than the group working with lower order questions. From the above study, review questions have a facilitative effect on learning. It is true that these effects are observable in the above cases using written texts, and with the study questions also written.

Hartley and Davis, (1996) and Akinyemi (2013) were more interested in a general range of pre-instructional strategies that included pretest, behavioural objective, overviews and advance organizers. The studies reviewed by them indicated that, under certain conditions, completing a pretest sometimes enhance subsequent posttest performance. In two of the studies, experimental subjects scored higher than control subjects on posttest question they had seen previously but not higher than control subjects on questions they had not seen previously. They examined both the explanation put forward for pretest effects and also what appeared to be the major variable concerned. Some of these being the argument that a pretest reduced a student's tension and thus his motivation to learn.

Watts and Anderson, (2000) were interested in finding the effect of three types of inserted questions on learning from prose. Three hundred high school students answered inserted questions after reading a 450-word passage explaining a psychological principle. The question involved identifying an example of the principle or the name of the psychologist associated

with the principle. Subjects who received study questions that required them to apply the principle to new examples performed significantly better on the posttest than all other subject, including subjects who received otherwise identical questions that repeated examples described in the text. From the above findings, it is argued that inserted application questions induced the students to process the text more thoroughly. Watts and Anderson concluded that application questions as contrasted to questions that repeated examples or questions on names of significant people yield the greatest general facilitative effect on learning by prompting students to inspect and comprehend the text more thoroughly.

Statement of the Problem

Different ways materials are introduced determine the level of learning and motivation. Sound strategies are needed for effective teaching and learning. The problem stems from the fact that poor strategies are still in use in Nigeria secondary schools in the teaching of Government.

The statement of behavioural objectives in a teacher's note of lesson has become widely acceptable as an art of good lesson planning. Most times, these objectives are framed to aid effective teaching from the teacher and to help the learners know what to be expected at the end of instruction. Most qualified and experienced teachers use the stated behavioural objectives for measuring the success and effectiveness of their lessons usually by stating the behavioural objectives in affective, that is, observable behaviour and providing some evaluation questions to each of the expected objectives. Mkpa (1984:63) observed that "it is through the instrumentality of individual school subjects that national aims can be achieved because each subject contributes something towards the attainment of national goals". For school subjects to help in achieving the national goals, they must be taught with effective strategies of instruction. The extent to which this is done is still worrisome.

Due to the established relationship between retention and performance of students, it has become necessary to investigate the effects of students' prior knowledge of instructional objectives on their retention as well. Consequently, the problem of this study centres on finding out the effects of students prior knowledge of behavioural objectives and study questions on their academic performance in Government, post learning performance and retention.

Purpose of the Study

The general purpose of the study is to determine the effects of prior knowledge of behavioural objectives and study questions on academic performance and retention of senior secondary school students in Government.

Specifically, the study intends:

- To determine the effect of prior knowledge of behavioural objectives on students academic performance in Government.
- To determine the effect of pre-exposure to study questions on students academic performance in Government.
- To determine the effects of prior knowledge of behavioural objectives and pre-exposure to study questions on students academic performance in Government.

- To find out the effects of prior knowledge of behavioural objectives and pre-exposure to study questions on academic performance in Government for students of type A and B personality groups.
- To ascertain the effects of prior knowledge of behavioural objectives and pre-exposure to study questions on academic performance in Government.
- To find out the effect on retention by prior knowledge of behavioural objectives and study questions on the part of the students after a four-week interval.

Method

The study is a quasi-experimental design using a 3x2 factorial matrix carried out in Owerri Municipal Council of Imo State. The population of the study consisted of 1860 SS2 students who offered Government from the Eight State secondary schools in Owerri municipal Council of Imo State. Purposive sampling was used to select Government College Owerri. Two intact classes were used at Government Secondary School Owerri for both the experimental group, who were taught using both the conventional method and prior knowledge of behavioral objectives and study question and the control group that were taught using the conventional teaching method only. Each intact class was made up of 45 students giving a simple size of 90 students. The instruments used for the study were Government Achievement Test (GAT) and the Government Retention Test (GRT) that were developed by the researchers and validated by experts in Education/Government, Measurement and Evaluation and Curriculum Studies from Alvan Ikoku Federal College of Education and Imo State University Owerri which resulted to pruning down initial hundred items to seventy Five items in terms of grammatical errors, target area coverage and excepted methods of text construction.

A test re-test was used and a reliability co-efficient of 0.96 was established using the Parson's Product Moment Correlation. The six weeks treatment was done with the help of a trained research assistant. The notes were drawn for each of the fifteen lessons that cover one unit in the SS2 Government Syllabus. The study involved Pre-treatment phase, Treatment phase and Post treatment phase. By the end of the six weeks, all students were given tests and tests marked and scores computed for the purpose of this research.

Mean and standard deviation was used to analyze the research questions while analysis of covariance was used to test the hypotheses formulated at 5% confidence level.

Order of the Experiment

Week	Steps	Treatment activities	Group A Control group	Group B Experimental group
1	1	The status of citizenship	1	1
	2	Difference between the status of a citizen and an alien	1	1
	3	How citizenship is acquired	1	1
2	4	Concept and origin of rights in Nigeria	1	1
	5	Rights freedom of life, movement and association	1	1
	6	Rights to freedom of religion, expression and slavery	1	1
3	7	Independence of the judiciary	1	1
	8	Meaning, types of duties and obligation	1	1
	9	Concepts of constitution and constitutionalism	1	1
4	10	Sources of articles of a national constitution	1	1
	11	Types of constitution	1	1
	12	Merits and demerits of unitary, federal and confederal constitutions	1	1
5	13	Meaning and characteristics of the rule of law	1	1
	14	The operation of the rule of law	1	1
	15	Limitations of the rule of law	1	1
6	16	Revision and administration of the achievement and retention tests	1	1
		Total	16	16

Results

Research Question 1

Is there any difference between the mean academic performance of students who had prior knowledge of behavioural objectives and prior knowledge of study questions in Government lessons at pre-test?

Table 1: Mean scores of the experimental groups at pre-test

Groups	Mean	SD	Mean difference
Behavioural objectives	28.53	2.29	0.00
Study question	28.53	2.92	

Table1 shows that the mean scores of students who had prior knowledge of behavioural objectives and prior knowledge of study questions at pre-test are 28.53 and 28.53 respectively. The table equally shows that the mean difference is 0.00. It then implies that there is no difference in mean scores of experimental groups at pre-test.

Research Question 2

Is there any difference between the mean academic performance of students who had prior knowledge of behavioural objectives and those who did not in Government lessons?

The experimental group received prior knowledge of lesson behavioural objectives before the commencement of teaching, while the control group did not. The mean scores of the post test of the control and experimental groups are presented on table 2

Table 2: Mean of test scores of the control and the experimental groups

Groups	Mean	Mean difference
Treatment group	62.43	22.83
Control	52.41	

Table 2, shows the mean scores of the participants of the study in the post test assessments. The table indicates that the mean score for the experimental group is 62.43 while that of the control group is 52.41. Since the mean score of 62.43 obtained by the experimental group is more than the mean score of 52.41 of the control group, it implies that prior knowledge of lesson behavioural objectives before the commencement of teaching was effective

3 Research Question 3

Is there any difference between the mean academic performance of students who had prior knowledge of study questions and those who did not in Government lessons?

The experimental group received prior knowledge of study questions before the commencement of teaching, while the control group did not. The mean of post test scores of the control and experimental groups are presented on the table that follows.

Table 3: Mean of post test scores of the experimental and control groups

Groups	Mean	Mean difference
Treatment group	59.2	28.43
Control	42.41	

Table 3 shows the mean response scores of the participants of the study in the post test assessments. The table indicates that the mean score for the experimental group is 59. 2 while that of the control group is 42.41. Since the mean score of 59. 2 obtained by the experimental group is more than the mean score of 42.41 of the control group, it implies that prior knowledge of study questions before the commencement of teaching was effective.

Research Question 4

Is there any difference between the mean retention of students who had prior knowledge of behavioural objectives and those who did not in Government lessons?

The post test retention test was conducted on the students after four weeks of the termination of teaching. The mean scores of both the experimental and control groups are presented on the table that follows.

Table 4: Mean of retention scores of participants in the control and experimental groups

Groups	Mean	Mean difference
Experimental group	49.6	21.32
Control	31.7	

Table 4 shows the mean retention scores of the participants in the study in the post test assessments conducted after four weeks. The table indicates that the mean score for the experimental group is 49.6 while that of the control group is 31.7. Since the mean score of 49.6 obtained by the experimental group is more than the mean score of 31.7 of the control group, it implies that prior knowledge of lesson behavioural objectives before the commencement of teaching was effective in helping students' retention in Government.

Research Question 5

Is there any difference between the mean academic performance of type 'A' and type 'B' groups who had prior knowledge of behavioural objectives in Government lessons?

The experimental group was separated into types A and B. The mean scores of the post test scores of the groups are presented on table 5.

Table 5: Mean of test scores of type A and type B participants in the experimental

Groups	Type	Mean	Mean difference
Behavioural Objectives	Type A	61.82	5.27
	Type B	63.04	

Table 5, shows the mean response scores of the types A and B participants of the study in the post test assessments. The table indicates that the mean score for the A group is 61.82 while that of the B type group is 63.04. Since the mean score of 63.04 obtained by the type B group is more than the mean score of 61.82 of the type A group, it implies that prior knowledge of lesson behavioural objectives before the commencement of teaching has a mild effect on the type A and type B of students in their academic performance in Government.

Research Question 6

Is there any difference between the mean performance of students who had prior knowledge of study questions in Government lessons after a-four-week interval?

The post test retention test was conducted on the students after four weeks of termination of teaching. The mean scores of both the experimental and control groups are presented on the table that follows.

Table 6: Mean of retention scores of participants in the control and experimental groups after four-week interval

Groups	Mean	Mean difference
Experimental group	49.6	29.79
Control	31.7	

Table 6, shows that differences exist in the mean scores of students who had prior knowledge of behavioural objectives and prior knowledge of study questions after a –four-week interval. The table equally shows that the mean score for the experimental group is 49.6 and the control 31.7. It then implies that prior knowledge of study questions before the commencement of teaching was effective in helping students' retention in Government.

Hypothesis 1

There is no significant difference in academic performance between the students who had prior knowledge of behavioural objectives and prior knowledge of study questions in Government lessons at pre-test.

Table7: 2-way ANCOVA for the effects of prior knowledge of behavioural objectives and prior knowledge of study questions at pre-test

Source of variation	Sum of squares	DF	Mean squares	Prob	F- Calculated	F- Critical
Corrected model	13612.24	1	4537.41			
Intercept	1956.80	2	1956.80			
Covariate (Pretest)	0.48	1	0.48	0.898	0.017	3.95
Groups	13607.73	2	13607.73			
Total	207280.00	90				

Table 7, shows that the F- calculated (0.017) is less than F- critical (3.95) and the level of significance (0.05) is less than prob (0.898). This result accepts the null hypothesis that there is no significant difference in the post performance achievement between the students who had prior knowledge of behavioural objectives and prior knowledge of study questions in Government lessons at pre-test.

Hypothesis 2

There is no significant difference in the post performance achievement between the students who had prior knowledge of behavioural objectives and those who did not in Government lessons.

Table 8: 2-way ANCOVA for the effects of prior knowledge of behavioural objectives at the post-test

Source of variation	Sum squares	DF	Mean squares	F- calculated	F- critical
Control treatment	14.94	1	14.013997	1.27	0.2682
Error Total	6705.853	2	3352.926608	303.20	<.0001
	353.88226	87	11.058521		
	7145.0388	90			

Table 8: Illustrates the analysis of covariance (ANCOVA) for effects of prior knowledge of behavioural objectives on the participants in the control group and those in the experimental group. The experimental, group together with the control group give a total of two (2) groups under study. From the ANCOVA result, the F-calculated for treatment effects is 303.20 with a significant F-critical of<0.00001, which is less than 0.05. Thus, the ANCOVA test is significant

at 0.05. The null hypothesis is therefore rejected while the alternative hypothesis is accepted at 5% confidence level. Consequently, it is concluded that there is a significant difference between the students who had prior knowledge of behavioural objectives and those who did not have prior knowledge of behavioural objectives in Government lessons.

Hypothesis 3

There is no significant difference in the post performance achievement between the students who had prior knowledge of study questions and those who did not in Government lessons

Table 9: 2-way ANCOVA for the effects of prior knowledge of study questions at the post-test

Source of variation	Sum squares	DF	Mean squares	F-calculated	F-critical
Control treatment	14.94 6705.853	1	14.013997	1.24	0.2682
Error Total	353.88226	2	3352.926608	266.14	<.0001
	7145.0388	87	11.058521		
		90			

Table 9, shows the analysis of covariance (ANCOVA) for effects of prior knowledge of study questions on the participants in the control group and those in the experimental group. From the ANCOVA result, the F-calculated for treatment effects is 266.14 with a significant F-critical of <0.00001, which is less than 0.05. Thus, the ANCOVA test is significant at 0.05. The null hypothesis is therefore rejected while the alternative hypothesis is accepted at 5% confidence level. Consequently, it is concluded that there is a significant difference between the students who had prior knowledge of study questions and those who did not have prior knowledge of study questions in Government lessons.

Hypothesis 4

There is no significant difference in the post performance retention between the students who had prior knowledge of behavioural objectives and those who did not in Government lessons.

Table10: 2-way ANCOVA for the effects of prior knowledge of behavioural objectives on post performance retention.

Source of variation	Sum squares	DF	Mean squares	F-calculated	F-critical
Control treatment	14.94 6705.853	1	14.013997	1.21	0.2682
Error Total	353.88226	2	3352.926608	301.12	<.0001
	7145.0388	87	11.058521		
		90			

Table10; Illustrates the analysis of covariance (ANCOVA) for effects of prior knowledge of behavioural objectives on the participants in the control group and those in the experimental group. From the ANCOVA result, the F-calculated for treatment effects is 301.12 with a significant F-critical of <0.00001, which is less than 0.05. Thus, the ANCOVA test is significant at 0.05. The null hypothesis is therefore rejected while the alternative hypothesis is accepted at 5% confidence level. Consequently, it is concluded that there is a significant difference in

the post performance retention between the students who had prior knowledge of behavioural objectives and those who did not have prior knowledge of behavioural objectives in Government lessons.

Hypothesis 5

There is no significant difference in the post performance achievement between the groups A and B students who had prior knowledge of behavioural objectives and those who did not in Government lessons.

Table11: 2-way ANCOVA for the effects of prior knowledge of behavioural objectives at the post-test on groups A and B students

Source of variation	Sum squares	DF	Mean squares	F-calculated	F-critical
TYPE A	610.43	1	610.43	1.27	0.282
TYPE B	670.83	2	1340	33.20	<.0001
ERROR	353.82	40	8.64		
Total	1635.08	44			

Table11 shows the analysis of covariance (ANCOVA) for effects of prior knowledge of behavioural objectives on the participants in the A group and those in the B group. From the ANCOVA result, the F-calculated for treatment effects is 33.20 with a significant F-critical of <0.00001, which is less than 0.05. Thus, the ANCOVA test is significant at 0.05. The null hypothesis is therefore rejected while the alternative hypothesis is accepted at 5% level of significance. Consequently, it is concluded that there is a significant difference in retention between the group A students who had prior knowledge of behavioural objectives and group B students who had prior knowledge of behavioural objectives in Government lessons.

Hypothesis 6

There is no significant difference in the post performance achievement between the students who had prior knowledge of study questions and those who did not in Government lessons after a four week interval.

Table 12: 2-way ANCOVA for the effects of prior knowledge of study questions at the post-test after a four week interval

Source of variation	Sum Squares	DF	Mean Square	F- calculated	F-critical
Post test follow up error	5.72	1	5.72	7.02	0.1703
	7.26	2	3.63	3.67	0.1305
	23.57	87	2.61		
Total	36.55	90			

Table12, shows the analysis of covariance (ANCOVA) for effects of prior knowledge of study questions on the participants in the control group and those in the experimental group. The experimental groups together with the control group give a total of two (2) groups under study. From the ANCOVA result, the F-calculated for treatment effects is 7.02 with a significant F-critical of <0.1703, which is less than 0.05. Thus, the ANCOVA test is significant at 0.05. The null hypothesis is therefore rejected while the alternative hypothesis is accepted at 5% confidence level . Consequently, it is concluded that there is a significant difference

between the students who had prior knowledge of study questions and those who did not have prior knowledge of study questions in Government lessons after a four week interval.

Discussion

1 Effects of prior knowledge of behavioural objectives and prior knowledge of study questions on performance at pre-test.

The data obtained from testing research question 1 (table1) revealed that there were no differences in the mean performance of students who had prior knowledge of behavioural objectives and prior knowledge of study questions at pre-test. This is evidenced in their mean scores as indicated in table1. As regards the hypothesis 1 (table 7), the F-calculated is (0.017) while the F- critical is (3.95). This result accepts the null hypothesis that there is no significant difference in performance between the students who had prior knowledge of behavioural objectives and prior knowledge of study questions in Government lessons at pre-test. This is so because all the students have been learning under same condition and with same method. The difference can only exist during and after the therapy.

2 Effects of prior knowledge of behavioural objectives on performance

The data obtained from testing this research question 2 (table 2) and hypothesis 2 (table 8) reveal that prior knowledge of behavioral objectives before the commencement of teaching was effective as seen in the different mean scores of the two groups, the experimental and the control groups.

For research question 2, the experimental group who were taught with both lecture method and prior knowledge of lesson behavioral objectives had the high mean of 62. 43 indicating their high performance while the control group who were taught using the lecture method only had a mean of 52. 41, indicating their low performance.

As it concerns hypothesis 2, the data revealed that the F-calculated for treatment effect is 303.20 with a significant F-critical of <0.00001, which is less than 0.05. This indicates that the ANCOVA test is significant at 0.05. The null hypothesis is therefore rejected while the alternative hypothesis is accepted at 0.05 level of significance. There is a significant difference between the students who had prior knowledge of behavioural objectives and those who did not have prior knowledge of behavioural objectives in Government lessons. The students who were exposed to prior knowledge of behavioural objectives before the teaching, performed better than those who were not exposed to prior knowledge of behavioural objectives before the teaching. These findings are in agreement with the findings made by earlier researchers on this same issues in subject areas like History (Mkpa 1981), Biology (Nzewi, 1990), Social studies (Ukwuoma 2001) Integrated science (Nwanaga, 2008), Akinyemi (2013).

These researchers have concluded from their investigations that providing students with behavioural objectives prior to instructions makes for enhanced performance. Melton, (2008) in the results of his investigation concluded that students receiving instruction with a prior knowledge of learning outcomes did achieve significantly higher on immediate and delayed post test measures of performance. This increase in performance of these students that were exposed to prior knowledge of behavioural objectives before the commencement of teaching could be attributed to the ability of objectives to provide some organization to the subject

matter. This is because Salman, Yahaya, Yusuf, Ahmed and Ayinla (2012) believed that objectives could provide some organization to the subject matter.

They also suggested that objectives may serve a management function by enabling the student to better organize his/her time and learning experiences in accordance with the goals of his subjects. Such self management may help the student to avoid playing truant and the resulting cramming session which often precedes examination.

3 Effect of prior knowledge of study questions on achievement

The data obtained from testing research question 3 (table 3) and hypothesis 3 (table 9) reveal that prior knowledge of study questions before the commencement of teaching was effective. For research question 3, this is seen in the different mean scores of both the experimental and the control group. The experimental group had a high mean of 59.2 indicating the high performance while the control group had a mean score of 42.41 indicating their low performance. This is in agreement with earlier researchers on the effect of prior knowledge of study questions. (Watts and Anderson 2000, Nzewi, 1990 and Mkpa 1988). These researchers agreed after their investigations, that presenting study questions to the students before commencement of instruction had facilitative effect on learning and finally led to enhanced performance.

From the data analyzed in table 8, the F- calculated for treatment effect is 266.14 with a significant F-critical of <0.00001 , which is less than 0.05. This reveals that the ANCOVA test is significant at 0.05. The null hypothesis is, therefore, rejected while the alternative hypothesis is accepted at 5% level of significance. It, then, implies that there is a significant difference between the students who had prior knowledge of study questions and those who did not have prior knowledge of study questions in Government lessons. The students who were exposed to the knowledge of study questions before the teaching performed better than those who were not thus exposed to prior knowledge of study questions before the teaching. The findings are in agreement with what has been found out by earlier researchers. Watts and Anderson (2000) found out that students' who were exposed to written prose with inserted application questions performed significantly better than students who were not exposed to written prose with inserted application questions. They attributed this to the fact that inserted application questions yielded the greatest general facilitative effects on learning by prompting students to inspect and comprehend the text more thoroughly.

This present study relates positively to the findings of Hartley and Davis (1996). The explanation they offered for the group which had seen questions before instruction was that pre-test directed the students' attention to remedy deficiencies during subsequent instruction/teaching. The final conclusion they made was that pre-tests increased Students' awareness of what is expected of them. Pre-test also helped the students to organize related materials and thus made materials easier for students to comprehend and remember. Pre – test in the above context had earlier been likened to study questions and it is confidently assumed that both play the same role, hence the enhancement of performance of students who had been exposed to study questions.

Studies that also found study questions to have facilitative effect on learning include Mkpa, (1985), Nzewi, (1990) and Ukwuoma, (2001). They found pre – questions facilitative of specific

learning but inhibits learning of material to which the subject was not directed. Ukwuoma (2001) concluded that pre – question tended to narrow the range of attention by providing the students with a criteria for acceptable behaviour. The above argument suggests that the whole idea of teaching and the teacher's job is to direct students' attention to what they should know. If pre – questions and study questions succeeded in doing that, then the aim of the teacher is achieved.

4 Effects of prior knowledge of behavioural objectives on students' retention

The data in table 4 reveal that prior knowledge of lesson behavioural objectives before the commencement of teaching was effective in helping students' retention in Government. The post test retention test which was conducted on the students after four weeks of the termination of teaching on both the experimental and the control groups were found to be effective. As regards research question 4, this is evidenced in their mean scores. The experimental group had 53.6 as their mean score while the control group had 36.4 as their own mean score, indicating a facilitative effect of prior knowledge of lesson behavioural objectives on students' retention in Government.

As it concerns hypothesis 4, (table 10), contains the data collected and analyzed to test this hypothesis. The F-calculated for treatment effect is 301.12 with a significant F-critical of <0.00001 , which is less than 0.05. The ANCOVA test is significant at 0.05. The null hypothesis is therefore, rejected while the alternative hypothesis is accepted at 5% level of significance. It then means that there is a significant difference in the post performance retention between the students who had prior knowledge of behavioural objectives and those who did not have prior knowledge of behavioural objectives in Government lessons.

The data from the table (10) shows that the students exposed to behavioural objectives prior to the lesson retained significantly higher than those not exposed to prior knowledge of behavioural objectives. It shows that the use of behavioural objectives led to high retention in students of Government. This finding is in agreement with the findings of Mkpa (1981) Nzewi (1990) and Ukwuoma (2001). They concluded that presenting prior knowledge of behavioural objectives to students prior to the teaching led to high retention. The evidences from this study show that students who were exposed to behavioural objectives before the teaching retained better than those who were not exposed to behavioural objectives.

5 Effects of prior knowledge of behavioural objectives on the performance of type A and type B students

Data in table 5, reveal that prior knowledge of lesson behavioral objectives before the commencement of teaching has a mild effect on the type A and type B groups of students in their performance in Government. For research question 5, this is evidenced in their mean scores; type A has 61.82 while type B has 63.04. This is because both type A students and type B students were exposed to prior knowledge of lesson behavioural objectives prior to the lesson.

Their mean scores also reveal that both the Experimental (type A) and the Control (type B) can also achieve high when taught under the same condition and with the same method or strategy.

Table 11, contains the data collected and analyzed to test hypothesis 5. For hypothesis 5, the F- calculated for treatment effect is 33.20 with a significant F-critical of <0.00001 , which is less than 0.05. The ANCOVA test is significant at 0.05. The null hypothesis is rejected while the alternative hypothesis is accepted at 5% level of significance. It then means that there is a significant difference between the types A and B students who had prior knowledge of behavioural objectives and those who did not have prior knowledge of behavioural objectives in Government lessons.

The data from table (11) shows that the students exposed to behavioural objectives prior to the lesson irrespective of their type performed significantly better than those not exposed to prior knowledge of behavioural objectives. It shows that the use of behavioural objectives led to improved performance in students of all types. This finding is in agreement with the findings of Nzewi (1990) and Nwanaga (2008). They concluded that both students of low, medium and high ability groups performed significantly well due to the exposure to behavioural objectives before the teaching. The evidence from this study suggested that types A and B students benefited from the use of behavioural objectives.

6 Effects of prior knowledge of study questions on performance after a-four-week interval

Data in table 6 reveal that prior knowledge of study questions before the commencement of teaching was effective in helping students' performance in the post test retention test conducted on the students' after four weeks of the termination of teaching on both the groups. For research question 6, the experimental group had a mean score of 49.9 while the control group had a mean score of 31.7. It is obvious that the mean score obtained by the experimental group is more than the mean score obtained by the control group, while for the hypothesis, as indicated in table 12, there is a significant difference between the students who had prior knowledge of study questions and those who did not have prior knowledge of study questions in Government lessons after a four week interval.

This is seen from the ANCOVA results, showing the F- calculated for treatment effect as 7.02 with a significant F-critical of <0.1703 , which is less than 0.05. This implies that the ANCOVA test is significant 0.05, thereby rejecting the null hypothesis, while accepting the alternative hypothesis. This shows that the experimental group who received the therapy, still performed better than the control group who did not receive the therapy after a four week.

Conclusion

In the light of discussion of the findings, the following conclusions are made:

- Prior knowledge of behavioural objectives based on the topic to be taught in Government will lead to better understanding of the topic and enhanced performance and aid retention. This implies that performance and retention was high due to presentation of typed behavioural objectives prior to instruction in Government.
- Prior knowledge of study questions based on the topic to be taught in Government enhances students' performance and retention in a test that will be administered after the teaching. Performance will be high due to the presentation of typed study questions before the commencement of teaching in both the achievement and retention test that will be administered after the teaching.
- Prior knowledge of behavioural objectives and prior knowledge of study questions make students become aware of what is expected of them by the end of the instruction/teaching. This means that the students will be prepared for the type of evaluative

questions that will come up after the instruction since they have prior knowledge of such questions due to the presentation of both behavioural objectives and study questions prior to instruction.

- Irrespective of the students' personality variables, giving them prior knowledge of behavioural objectives and prior knowledge of study questions may lead to enhanced performance and high retention. This suggests that the learners' personality variables are not determinant factor to enhanced performance and retention, as long as these learners are presented with both behavioural objectives and study questions prior to instruction.

Educational Implications of the Study

The use of behavioural objectives and study questions was found to improve learning performance and retention in Government. This implies that teachers should no longer be satisfied with having a statement of behavioural objectives in their lesson notes. They should also give them out in written form to the students prior to their lessons. The teachers should also encourage their students to read through the objectives before commencing the teaching. As the teaching is progressing, the teacher should make emphasis on written objectives handed to the students earlier. It is also evidenced from this study that the use of study questions led to improved learning performance and retention. The implications of these are that the teacher should also provide the study questions in written form and present same to the students as he/she enters the class. The teacher should encourage the learners to read through the study questions handed to them before teaching. The teacher should also emphasize to the study questions as the lesson progresses.

Teachers should, therefore, make use of innovative strategies such as prior knowledge of behavioural objectives and prior knowledge of study questions to create a cordial social climate that may be conducive to academic activities in the classrooms. This may lead to greater learning, greater retention and greater achievement/ performance to the study of Government.

Recommendations

Based on the findings of the study, the following recommendations are made:

- Teachers should employ prior knowledge of behavioural objectives and prior knowledge of study questions in teaching Government. They should not just write them down in their lesson notes but should put them in written form in order to distribute them to the students, once they (teachers) enter the classroom. The teachers should encourage the learners to read through what had been handed over to them before commencement of teaching. Teachers should also draw the attention of the students to written objectives and questions as the lesson progresses.
- Teacher education programme packages should include training in the use of prior knowledge of behavioural objectives and prior knowledge of study questions.
- Teachers should also enhance and update their knowledge by attending conferences, seminars and workshops. They should acquire higher education for this will expose them to more and better strategies of enhancing their teaching and improve performance of students.
- They should vary the strategies employed in their teaching so as to capture the interest of these students for monotony kills interest. Once interest is lost, the student can never learn.

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