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Synergic Effect of Motivation and Interest on Achievement of Undergraduate Students of Umar Suleiman College of Education, Gashua

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Abstract

The dwindling performance of students at both internal and external examinations calls for concern among stakeholders in the education enterprise. Numerous studies have been conducted regarding the implications for educational pedagogies. However, redirection of effort towards behavioural management (classroom climate and internal control system) during interaction in the classroom is sin qua non to academic excellence in our schools. The need for educationists in the country to sit-up and think on how to turn around enterprise cannot be overemphasized. A teacher is the pivot on which instructional process revolves the teacher has to glow for his students to shine. A teacher should have a turn grip of his discipline and perhaps more importantly be able to analyse and interpret the needs, desires, and aspirations of the nation as well the community where he lives. Adaralagbe says that a teacher must be a leader, innovator and enlightened parent. As parents, teachers must motivate their students and consider their personal interest in the delivery of instruction through the following ways (i) creation of a learning condition and provision of appropriate learning materials that will bring about enthusiasm in his students. (ii) Creating a student – centred instructional strategy that gives students options with regard to what is learnt, (iii) Allow students to participate actively in knowledge creation while the teacher serves as guidance and facilitator to ensure congruence between knowledge created and public view of the knowledge.

Keywords: Academic excellence, behavioural management, student motivation, student-centred instruction, teacher's role.

INTRODUCTION

The teacher must interact with students positively in behaviour management and internal class control to ensure the production of excellence in academic achievement that can meat international standard. This cannot be achieved without cross fertilization and acquisition of internationalized standard education practices that can guarantee success in our educational enterprise. According to wasagu (2007) the achievement of world class standard will be impossible without a critical mass of teachers within the profession who has seen it firsthand what is done in other countries and apply that knowledge back in the classroom. It is trite to say cross fertilization of ideas through conferences across the gob is prerequisite. The study investigated the combined effect of motivation and interest of students on their academic achievement seventy served as sample for this research. Group A consisted of forty students randomly assigned while Group B consisted of another thirty subjects that served as a control group.

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Group A (experimental group) was allowed to select their area of interest from environmental problems itemized for students. The necessary enabling environment was provided for learning the environmental problem directly through field work. Each student was directed to develop a lesson note which was used for interaction purpose in the course of studies in six weeks.

Group B (control group) was exposed to traditional lecture method for six weeks covering the same topics. At the end of the treatment environment studies interest inventory (ESII) was administered to both groups. Environmental studies achievement test (ESAT) was also administered to both groups. The experimental group outperformed the control group, according to data analysis using the student t-test statistical method. Among the suggestions are fostering motivation and taking into account students' interests in our teaching methods.

THEORETICAL FRAMEWORK

The study's theoretical foundation comes from B.F. Skinner's (1904–1990) operant conditioning theory and classical conditioning by Ivan Pavlov (1849 – 1936). B.F Skinner taught pigeons to play table tennis through reinforcing positively by providing the bird with some seed to eat if it knocks its head against the ball. According to Skinner, general undecided knock need not be extinguished through negative reinforcement, the positive reinforcement of knocking the ball towards a target leads to this behaviour appearing more often until it becomes no longer necessary to reward the knocking of the ball. This has become part of the bird's repertoire of skills.

Skinner takes a strong line and argued that all social cognitive and affective behaviours of human beings is brought about this way. But the positive reinforcement does not have to be extrinsic always as with the bird seed. For human beings can be self-rewarding [1,2]. Gains to personal self-esteem can be very positively rewarding for humans. The locus of reward is then internal and not external. According to Mukherjee, revised edition (2002) there are times when individuals feel some sort of urge and are compelled to behave in certain way, and the individuals attribute these impulses and drives to motivation. The dictionary meaning of "motive" is that it is an affective cognitive factor which operates in determining the direction of individuals behaviour towards an end or goal consciously apprehended or unconsciousness for example, motivated to seek food, wealth, social relations, prominence and prestige in job or profession, academic achievement and so on.

According to Akinade (2012) every learner need form of motivation or the other. Theories of motivation were propounded by Brunner and Bandura, McDougall, Hull, Okafor, Thorndike, Gagne, Guthrie and Wetson. The gestalt psychologists also include Kurt Lewin, Wertheimer max, Kafka, Wolfgang Kohler and Piaget (the intellectual development psychologists. They all agree that:

1. Motivation facilitates application and effectiveness of moderate reinforcement which is needed by learners.
2. Motivation directs and regulates individual behaviour which can become purposeful and persistent.
3. A motivated condition of behavior increases adequacy and efficiency.
4. Motivation could serve as prompts or stimulus generalization.
5. Motivation gives individuals insight as to "why" if an individual behaviour.
6. Motivation helps to energise, initiate or sustain an act. Hence the researcher wishes to investigate the effect of demonstration and intrinsic motivation on achievement and interest of biology students of different scientific literacy level in Colleges of Education, Northeast Nigeria.

Statement of the Problem

Poor academic achievement in biology stems from many factors ranging from lack of instructional materials, inadequacy of qualified teachers, inappropriate teaching methods, lack of interest on the part of students which results in lackadaisical attitude towards the study of biology [3]. According to Nwago, a significant portion of the intended learning goals in biology are not met in our senior secondary schools (SSS) due to a shortage of instructional materials and ineffective use of those that are available. According to the chief examiner's reports, biology candidates' SSCE performance has been steadily declining [4].

Ezego reported that the poor performance of students in West African Examination Council has belinked to teachers poor methods that teachers prefer to use the traditional lecture / expository method instead of the innovative activity based, students – centred methods that engage students in hand-on and mind-on activities during the learning process. Only 649,156 candidates, or 38.8% of those who took the exam, received credit in five subjects or more, with biology accounting for 3881 percent of candidates who received credit, according to the Ovansa WAEC results for the May/June 2012 senior secondary school certificate examination [5].

According to the Nation Newspaper of 26th January 2010, a public-school teacher Emmanuel Sunday observed that the reasons for poor performances of students in public examination is substantially due to the students pastimes non which include watching films, play footballs and attending parties rather than studying their books. This is an example of a person who lacks interest in and motivation for studying the relevant subject.

Uchechukwu (2013) also posited that the poor performances of students in sciences (biology inclusive) in WASSCE and other external examinations like NECO in the country was due to shallow knowledge of the subject matter, disregard for rubrics and incorrect interpretation of questions by students [6]. This brings to fore the issue of scientific literacy level among biology students. The role played by scientific literacy level of biology students in their academic achievement cannot be emphasized The Federal Ministry of Education (1990) has as one of its objectives, the production of highly motivated, knowledgeable and effective students who can understand, and appreciate biological process acquire skills, abilities and competencies that will equip to live in an environment and contribute meaningful to the society [7].

If this aim is to be achieved, an innovative strategy must be used by teachers in the teaching of biology in our secondary schools and tertiary institutions.

Nwachukwu JN. and Nwosu AA. in 2007 observed that the major reasons for the prevalent poor performance among students have been attributed to teachers persistence in adhering to traditional method of teaching in Nigeria [8, 9]. The persistent low academic achievement of NCE Biology students in the course BIO213 “Man and the Environment” which is an NCE II course according to NCCE syllabus inform the need for this study as shown in Table 1. Also, as a coordinator of environmental conservation club in umar Suleiman college of education over the years I found that students develop deep attachment to transplanted seedlings is part of the fieldwork requirement of the course. This they display through commitment to watering their plants and addition of manure. They show personal relationships with their plants. The joy they display when their plants survive is quite beyond the desire for higher grades in the course. Even after graduation some personal visit to their

Table 1. Percentage of failure and percentage of pass in Bio 213.

Year	% Failure	% Pass
2006	60	40
2007	75	25
2008	70	30
2009	60	40
2010	65	35
2011	60	40
2012	70	30
2013	60	40

Source: Head of Biology Office (2013).

plants whenever they in the college. This shows that there is joy beyond external reward which can be intrinsic motivation. Hence the desire to investigate the effect of demonstration and intrinsic motivation on achievement and interest of biology students of different scientific literacy levels in colleges of education, Northeast, Nigeria.

It is in view of observed myriads of problems that the researcher wishes to study the effect of demonstration and intrinsic motivation on the achievement and interests of biology students of different scientific literacy levels in Colleges of Education Northeast, Nigeria. This is with a view of enhancing meaningful learning and teaching of biology to improve students achievement.

Objectives of the Research

The objectives of this research include:

- Determination of the synergic effect of motivation and interest on Achievement of Biology Students in Umar Suleiman College of Education.

Research Question

What is the synergic effect of motivation and interest on achievement of biology students of Umar Suleiman College of Education, Gashua?

Research Hypothesis

- H_{o1}*:* There is no significance difference in the mean scores of Group A (Experimental Group) and Group B (Control group).
- H_{o2}*:* Motivation and interest of student are not required to ensure excellence in academic achievement

METHODOLOGY

The study investigated the synergic effect of motivation and interest of biology students on academic achievement in environmental studies.

A quasi-experimental research design and simple survey were used for this study involving seventy subjects drawn from the two hundred and fifty biology students of NCE II intact class of Umar Suleiman College of Education Gashua. Forty students were randomly assigned to Group A (Experimental group) while another thirty were assigned randomly to Group B (Control group). Group A was exposed to fieldwork based on their interest in area of environmental problems.

The teacher's direction and encouragement inspired them to learn. The six-week study focused on erosion, pollution, and desertification.

Group B was taught to learn in the classroom without cognisance of their interest area through the traditional lecture method for six weeks covering the same topics of pollution desertification and erosion. Environmental studies achievement test (ESAT) was validated by experts from science education department of Ahmadu Bello University and had a reliability of 0.89 using coefficient alpha was administered to both groups after treatment, one hundred and eighty-four science teachers responded to question on the importance of motivating and considering interest of students in educational practices to ensure excellence in academic achievement. Data collected were analysed using students t-test statistics tool and chi-squares.

RESULTS

Research question one sought to find out the synergic effect of motivation and interest on students achievement in environmental studies. Table 2 results show a substantial difference between the subjects' mean scores in Group A (motivated and interest-considered) and Group B (control group), which received instruction using the conventional lecture style.

Table 2. Comparison of mean scores students in experimental group and students in control group.

Group	N	X	∂	Se	Df	T	P	Remark
Experimental group	40	63	0.70	0.40	68	3.0	0.02	S*
Control group	30	45	0.90	0.2				

Significant at P = 0.05 level.

Table 3. Motivation and interest of students are required to ensure excellence in academic achievement.

Items	Observed frequency	Experimental frequency	Fo-fe/fe	df	X^2	P-value
Strongly agree	46	46	0	3.0	2.24	7.81
Agree	54	46	1.39			
Disagree	44	46	0.08			
Strongly disagree	40	46	0.78			

Table 2 reveals a significant different between mean scores of the experimental group exposed to motivation and their interest considered n choice of topic and those in the control group exposed to traditional lecture method only. The experimental (Group A) had a mean score of 63 while the control (Group B) had a mean score of 45. This shows a means difference of 18. Compared to the control group, the experimental group outperformed it. This may have resulted from the experimental group's cooperation and freedom of decision.

Additionally, Table 2 shows a significant difference (df=68, t=3, p=0.02) between Group B (control) and Group A (experimental), who were exclusively exposed to the lecture approach. At p = 0.05 Due to a significant difference between group B (control) and group A (experimental), hypothesis I is rejected.

The hypothesis is kept at an alpha level of 0.05 and a degree of freedom of three since the estimated X2 value of 2.24 is less than the p-value. The p-value is 7.81 as shown in Table 3. This suggests that maintaining great academic accomplishment in our schools depends critically on students' drive and interest working together.

DISCUSSION

Table 1 demonstrates that the experimental group and control group differed significantly from one another. The experimental (Group A) was given the liberty of selecting area of interest in environmental problems and was expose to through motivation in the field (as outdoor laboratory) interacted freely with the teaching materials. They also constructed meaning through development of personal lesson notes that edited and used as study material under the guidance and facilitation of the teacher. They performed better than the control group that was taught the same topics through teacher-centred traditional lecture method. The control group scored 45, while the experimental group scored an average of 63.

The outcome of this study is at variance with and earlier result obtained by Loric K. Baranek in 2012 which showed that motivation (particularly extrinsic) which is so common in school have a negative effect on learning and undermines intrinsic motivation. The result also disagrees with Fastinger and Carlsmith, 1959, Lepper Greene and Nisbett, 2010 who maintained that motivation particularly extrinsic (rewards) leads to less learning more errors, less creative work of and little desire to return motivating [10].

The result is in agreement with the findings of Okpala (1989) Okafor (1990) and Beka (2014) who opined that experimental method was positive effect on students over all achievement and when their interest is considered in the choice of courses they comprehend more [11–13].

Hypothesis 2 also confirmed positively the need for motivation and interest of students to be considered in education practices to ensure excellence in academic achievement in our schools.

RECOMMENDATIONS

Based on the outcome of this investigation, the researcher wishes to pt forward the following recommendations.

1. Teachers should be encouraged to stress educational practices that are designed to motivate their students.
2. Educational planners, particularly curriculum designers should realise the vital role of motivation and interest of students in a academic achievement and inculcate it in the design of curriculum.
3. Stakeholders in educational enterprises (Federal Government, State Government and organised private sector) should organise and sponsor conferences on the theme "effect of motivation and interest on academic achievement of students".
4. Classroom teachers should be encouraged to take the interest and motivation of students in the planning of their lesson.
5. Fund should be made available to teachers for field trips and materials that would be used in education practices that motivate students.

CONCLUSION

Based on this finding the need to consider students interest in choice of courses or area of study is paramount and should be considered in order to bring about meaningful learning. It is also important based on the outcome of this investigation to motivate particular the young learners should be extrinsically motivated while also considering their interest in the area of study to improve the achievement of pupils and enhance the development of country through science, technology, and mathematics education.

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