

Relationship between the Responses of Biology and English Teachers on Extrinsic motivational factors Provision for Teachers and Students' Academic Achievement in Adamawa State.

A.E. Orisakwe % Dr. K. U. Orisakwe, Dept. of Surveying and Geoinformatics, Modibbo Adama University of Technology, Yola.

Dr. O.R. Ugwuadu, Dept. of Science Education, Modibbo Adama University of Technology, Yola
and

G. N. Kalu – EKE, Dept. Of English and literary studies, University of Nigeria, Nsukka.

Abstract

This study investigated the relationship between the responses of Biology and English teachers on extrinsic motivational factors provision to teachers and students' academic achievement in Adamawa State. The design of the study was survey research design. Two research questions and two null hypotheses tested at 0.05 level of significance guided the study. The sample of the study comprised 64 Biology and English teachers and 182 Biology and English students' selected by stratified random sampling technique from the five educational zones of the State. Data were collected with Relationship Between Teachers' Extrinsic motivation Questionnaire (RBTEMQ) and Biology and English Achievement Tests (BAT and EAT). The RBTEMQ was constructed by the researchers on five point scale while BAT and EAT were multiple choice objective tests. The RBTEMQ was face validated while BAT and EAT were both face and content validated. The reliability coefficient of RBTEMQ was estimated with Cronbach alpha method which gave an internal consistency reliability coefficient of 0.74; that of BAT and EAT were estimated with Kuder – Richardson formula 20 which gave internal consistency reliability coefficients of 0.75 and 0.76 respectively. Data were analyzed with mean and standard deviation to answer the research questions while Pearson Product Moment Correlation method was used to test the hypotheses. Results revealed that the provision of extrinsic motivational factors to Adamawa State teachers was low but there is significant relationship between the responses of Biology and English teachers on the provision of extrinsic motivational factors for teachers and students' academic achievement. It was recommended among others that Adamawa State government should provide adequate extrinsic motivational factors for teachers.

Key words: Relationship, extrinsic motivation factors for teachers, students' academic achievement .

1.0 Introduction

Motivation is a general term that applies to entire class of drives, desires, needs, wishes and other related factors that enable people to behave the way they do in certain situations. For administrators to motivate their staff is clearly to say that the administrators do things like giving prizes, encouragements which satisfy the wishes and desires of their subordinates. This is because an organization may have a large volume of functions to carry out with people or through people, so in order to achieve the objectives of the establishment motivational techniques are used to arouse workers' interests. The use of motivation as a strategy for accomplishing tasks helps workers to feel happy and work harder.

Motivation is defined as the state of the individual at which his interest is stimulated to achieve an objective, controlled, energized and sustained till the objective is achieved (Nkwocha, 1998). Harmer (2001) defined motivation as a kind of internal drive which pushes someone to do things in order to achieve something.

There are two types of motivation namely: intrinsic and extrinsic motivation. Intrinsic motivation is a process of arousal and satisfaction in which the reward comes from carrying out an activity rather than from the result of an activity (Bestwick, 2002). Some examples are: emotional and personal satisfaction of the job itself like a person who goes to school because he derives personal satisfaction from acquiring knowledge, has intrinsic motivation to learn, enjoying praises for doing an activity well e.g. passing an examination with high grades, etc.

Extrinsic motivation is the performance of an activity in order to succeed in getting separate outcomes, like physical rewards (Bestwick, 2002). Some examples are: status, job security, etc (Uyanga, 1995). While intrinsic motivation is internally derived, extrinsic motivation is external in nature; but both of them work hand in hand for the achievement of a goal.

A popular administrative scientist, Frederick Herzberg and his associates (1959) propounded a two – factor or dual factor theory of motivation called hygiene and motivator theory. The theory postulates that motivators produce satisfaction while hygiene produces dissatisfaction. Job satisfaction and dissatisfaction are not opposites rather they are separate and distinct dimensions of employee’s job attitude towards work. Individual dissatisfaction or lack of motivation at work is a function of a set of job conditions which are job context in nature; they are hygiene factors which when absent cause dissatisfaction and when present they act as motivators or satisfiers. Some examples of hygiene factors according to Herzberg (1959) are: salary/pay, company policy and administration, job security and working conditions, supervision, internal relations with peers, supervisors and subordinates, status etc, while motivator factors are recognition needs, professional advancement, achievement, responsibility and other components of self actualization.

The hygiene or extrinsic motivators were chosen for this study because they are more accepted by staff in that their presence in an organization create job satisfaction (Uyanga, 1995). These external or extrinsic motivators like adequate salary, allowances or encourage staff to put in their best which may enhance students’ academic achievement.

Students’ academic achievement is represented by the scores or grades students obtain in examinations. Orisakwe (2010) found out that the extrinsic motivational factors presented to teachers were perceived important and they enhanced students’ academic achievement and also that; there is significant relationship between teachers’ perceived extrinsic motivational factors and students’ academic achievement. Ossai (1995) found out that Nigerian teachers are generally poorly motivated. Nwagwu (1998) reported that the needed incentives of teachers include adequate salary, good working conditions, societal recognition, among others. Adamawa State Students have been performing poorly in external examinations, Adamawa State Statistics Result (2008), Nwagwu (1998) reported that poor level of motivation is a major factor contributing to low commitment of teachers at work which also affected students’ academic achievement. Ejiofor (1991) reported that inadequate infrastructural facilities and general poor conditions of service like poor salary influence job satisfaction of workers. The problem of this study is: what would be the relationship between the responses of Biology and English teachers on extrinsic motivational provision to teachers and students’ academic achievement? Biology and English teachers were used for this study because they form a good representative of the entire teachers since almost all students take their subjects as core subjects (FGN, 2004).

2.0 Significance of the Study

The result of this study would provide useful information to Adamawa State government and other governments for development of education. Information from the two groups of teachers can be generalized because they form the major groups of teachers in teaching – learning process. If there is relationship between extrinsic motivational provision and students’ academic achievement, it can be seen as opinion of most teachers on the issue. Therefore Adamawa State government, educational administrators, policy makers, society, teachers and other stake holders in education will see the result as a vital information for educational planning and administration. If there is no relationship between the two variables, it is also a communication to them all.

2.1 Purpose of the Study

The general purpose of this study was to investigate the relationship between the responses of Biology and English teachers on extrinsic motivational provision to teachers and students’ academic achievement. The specific purposes of the study were to determine:

1. The extent extrinsic motivational factors are provided for teachers in Adamawa State.
2. The extent to which extrinsic motivational factors provision to teachers enhance students’ academic achievement.

2.2 Research Questions

The following research questions were posed and answered to guide the study.

1. What is the extent to which extrinsic motivational factors are provided for Adamawa State teachers as responded to by Biology and English teachers?
2. What is the extent to which extrinsic motivational factors provision to teachers enhance students’ academic achievement as responded to by Biology and English teachers?

2.3 Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance to guide the study.

Ho₁: There is no significant relationship between the responses of Biology teachers on extrinsic motivational factor provision to teachers and students' academic achievement.

Ho₂: There is no significant relationship between English teachers' responses on extrinsic motivational factors provision to teachers and students' academic achievement.

This study is delimited to the following extrinsic motivational factors, like: general working conditions such as: salary, promotion, fringe benefits (housing, health, loans), workshop, in service and conferences sponsorship, facilities for teaching and learning. These factors are central for general working conditions needed by the generality of teachers for self, family and work. This study is also delimited to Biology and English teachers and Biology and English students in Senior Secondary two (SS II) class in Adamawa State.

2.4 Research Method

The research design adopted for this study was the survey research design. Survey designs are concerned with describing events as they are without any manipulations of what is being observed (Ali, 1996). It is also a design in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be a representative of the entire group (Nwana, 2005; Nworgu, 2006). In this study opinion survey was used to collect data from people's opinion with the use of questionnaire.

The population of the study consisted of all Biology and English teachers, all SS II Biology and English students in all the five educational zones of Adamawa State. The five educational zones are: Ganye, Gombi, Mubi, Numan and Yola. There is a total of 310 Biology teachers and 321 English teachers and a total of 870 SS II Biology and 946 English students (Table 1). SS II students were used for the study because they are not in the certificate class that may not be interested in the study due to nearness of their final examination; secondly the topic for the achievement tests fall under the SS II curriculum.

The breakdown of the population of the study is as follows (Table I).

Table 1: Population of the Study

S/N	Educational Zones	Biology Teachers	English teachers	SS II Biology student	SS II English Students	Total Teachers	Total Students
1.	Ganye	60	58	170	186	118	356
2.	Gombi	71	75	220	250	146	470
3.	Mubi	60	67	158	180	127	338
4.	Numan	64	66	166	170	130	336
5.	Yola	55	60	156	160	115	316
	Total	310	326	870	946	636	1816

Table I shows the population of Biology teachers, English teachers, Biology students and English students used for the study (Adamawa State Post – Primary Management Board, Office of Statistics, 2010).

Ten percent (10%) sampling parameter was used to select samples from the population. According to Nwana (2005) if the population is large and up to thousands the percentage sample from the population should be a minimum of ten percent (10%). The population of teachers and students used for the study was 2452 (636+1816). Using the parameter, the sample of the study comprised 64 teachers made up of 31 Biology and 33 English teachers and 182 students comprising 87 Biology and 95 English students selected by stratified random sampling technique. Simple random sampling technique by ballot was then used to select samples from each zone.

Three instruments for data collection were used for the study. The first one was the Relationship between Teachers' extrinsic motivation questionnaires (RBTEMQ). The draft questionnaire consisted of 30 items divided into two sections A and B; each section consisting of 15 items. Section A was concerned about the extent extrinsic motivational factors were provided for teachers in Adamawa State. Section B dwelt on whether extrinsic motivational factors provision can enhance students' academic achievement. The two sections were responded to by Biology and English teachers.

The two other instruments were Biology Achievement Test (BAT) and English Achievement Test (EAT) with 36 multiple choice objective tests (18 questions for each test). The test items were drawn from the

current SS II Syllabus of the West African Examinations Council (WAEC) (2012) in Biology and English language.

The RBTEMQ was constructed on five point scale namely: very high (VH) 5, High (H)4, moderate (M) 3, Low (L) 2, and very Low (VL) 1 for positive statements. The scale was reversed in items with negative statements. The multiple – choice objective test items were constructed with four options A,B,C and D for testees to choose the correct answer from the alternatives. All the instruments were constructed by the researchers.

The instruments were subjected to face and content validation. The RBTEMQ was subjected to face validation while the BAT and EAT were presented for face and content validation. The validators were experts in educational management, Biology education and English language from Modibbo Adama University of Technology, Yola. For face validation, the experts were requested to assess the items for clarity and appropriateness of expression, relevance to the objective of the study and correctness of the answers. The validators were also requested to make suggestions and amendments where necessary. Five items were dropped from the questionnaire because the items were ambiguous and a total of 20 good items, 10 items from each section remained. For BAT and EAT only one item was deleted from each, leaving a total of 34 items from both of them after face validation. The deleted items were out of syllabus.

For content validation, BAT and EAT, were given to the same experts that did face validation. The validated table of specification used in constructing the tests and suggestions from the validators ensured content validity of the instruments. The table of specification contained adequate sampling of the content taught such that appropriate number of questions were drawn to reflect various levels of Bloom's taxonomy of educational objectives in the cognitive domain. The 34 items that remained after face validation were trial – tested on 30 students at Government Day Secondary School, Dubeli, Yola. The school was not used for the actual study. The scores from the trial – testing was used to compute item analysis. The item difficulty and discrimination indices were calculated for each item using 27% cut – off from upper and lower class of testees that scored the items correct (Ugodulunwa and Ugwuanyi, 1999). Items were selected based on the following criteria:

- (a) An item difficulty index between 0.28 and 0.82
- (b) An item discrimination index between +0.22 and above. After the analysis, 30 items were selected, 15 items from each test while two items each were discarded because they did not meet that cut – off points stated. The 15 items of each of BAT and EAT were used for the study.

The reliability coefficient of BAT and EAT were determined with Kuder – Richardson formula 20 (K – R 20) method. The K – R 20 method helped to estimate the internal consistency of the items. The researchers administered the 15 BAT and 15 EAT items on 30 students. The data obtained were used to calculate the internal consistency of the items which gave 0.75 for BAT and 0.76 for EAT respectively. The reliability of RBTEMQ was obtained using the Cronbach alpha method which gave a coefficient of internal consistency 0.74 using the SPSS computer software for its calculation.

The researchers administered the RBTEMQ on the 64 teachers and BAT and EAT on the 182 students. The researchers employed the services of five research assistants. The researchers coordinated the exercise with a time table. The administration and collection of the instruments took five days. The BAT and EAT were awarded one mark for correctly answered question making 15 marks for each test.

Data were analyzed using mean and standard derivation to answer the research questions while Pearson Product Moment Correlation was used to test the hypotheses. The cut – off points used to take decision on items were as follows: 3.50 and above was taken as high extent, 3.40 – 3.49 moderate and 1.00 – 3.39 low extent. For hypotheses, if r – calculated was higher than r – critical, the hypotheses was not accepted and if r – calculated was lower than r – critical, the hypothesis was accepted.

Results

Research Question I: What is the extent to which extrinsic motivational factors are provided for Adamawa State teachers as responded to by Biology and English teachers?

Table 2: Mean and standard deviation of the extent to which extrinsic motivational factors are provided for Adamawa State teachers as responded to by Biology and English teachers.

S/N	Extrinsic Motivational factors	Biology Teachers $\frac{n = 87}{\bar{x}}$	English teachers $\frac{n = 95}{\bar{x}}$	Biology Teachers SD	English teachers SD	Grand mean	Remarks
1.	Payment of adequate salary to teachers by the government	2.70	2.66	0.42	0.48	2.68	Low extent
2.	Payment of salary as at when due	2.40	2.39	0.32	0.32	2.40	Low extent
3.	Periatic upward review of salary to meet changing needs	2.10	2.24	0.30	0.30	2.17	Low extent
4.	Teachers being promoted as at when due	2.05	2.10	0.29	0.30	2.08	Low extent
5.	Housing loan given to teachers to build their own houses	1.98	1.82	0.26	0.24	1.90	Low extent
6.	Free medical care for teachers and their families	1.82	1.74	0.24	0.21	1.78	Low extent
7.	Sponsoring teachers for in service training, workshop and conferences	2.06	2.08	0.29	0.33	2.07	Low extent
8.	Provision of well equipped library for teaching and learning	2.48	2.46	0.79	0.73	2.47	Low extent
9.	Provision of well equipped laboratories and workshops for teachers and learning	2.40	2.38	0.69	0.71	2.39	Low extent
10.	Improved conditions of service for teachers	1.96	1.81	0.27	0.26	1.89	Low extent
	Total Grand Mean	2.43	2.41	0.39	0.49	2.42	Low extent

2.5 Result in Table 2 reveals that the extent to which extrinsic motivational factors are provided for Adamawa State teachers is of low extent. The grand mean of Biology teachers is 2.43, that of English teachers is 2.41 while overall grand mean is 2.42 all indicating low extent.

Research Question 2: What is the extent to which extrinsic motivational factors provision to teachers enhance students' academic achievement?

Table 3: Mean and standard deviation of the extent to which extrinsic motivational factors provision to teachers enhance students' academic achievement as responded to by Biology and English teachers.

S/N	Extrinsic Motivational factors	Biology Teachers n = 87 \bar{x}	English teachers n = 95 \bar{x}	Biology Teachers SD	English teachers SD	Grand mean	Remarks
1.	Payment of adequate salary to teachers will enhance students academic achievement	4.52	4.50	0.72	0.70	4.51	High extent
2.	Payment of salary as at when due will enhance students academic achievement	4.52	4.36	0.72	0.64	4.31	High extent
3.	Periodic upward review of teachers' salaries enhance students' academic achievement	4.36	4.29	0.69	0.66	4.33	High extent
4.	Promotion of teachers will enhance students' academic achievement	4.21	4.25	0.61	0.62	4.23	High extent
5.	Giving housing loans to teachers will enhance students academic achievement	3.69	3.60	0.54	0.50	3.65	High extent
6.	Giving free medical care to teachers and their families will enhance students' academic achievement	4.21	4.32	0.61	0.64	4.27	High extent
7.	Sponsoring teachers for in service training, workshops and conferences will enhance students' academic achievement	4.12	4.08	0.59	0.58	4.10	High extent
8.	Provision of well equipped library will enhance students academic achievement	4.22	4.19	0.61	0.59	4.21	High extent
9.	Provision of well equipped laboratory will enhance students' academic achievement	4.33	4.20	0.67	0.60	4.25	High extent
10.	Improved conditions of service for teachers will enhance students' academic achievement	4.53	4.08	0.72	0.58	4.31	High extent
	Total grand mean	4.26	4.19	0.65	0.61	4.22	High extent

Result in Table 3 indicates that all the extrinsic motivational factors presented enhance students' academic achievement to a high extent (grand mean = 4.22)

2.6 Hypotheses:

Ho₁: There is no significant relationship between the responses of Biology teachers on extrinsic motivational provision to teachers and students' academic achievement.

Table 4: Pearson Product Moment Correlation analysis of relationship between the responses of Biology teachers and students' academic achievement.

Item	N	\bar{X}	DF	r-Crit	r-Cal	Remarks
Biology teachers' extrinsic motivational responses	31	4.24	116	0.195	0.61	Ho₁ rejected
Students' academic Achievement	87	8.62				

Data in Table 4 show that H_{o1} is rejected because there is significant relationship between the responses of Biology teachers on extrinsic motivational factors provision for teachers and students' academic achievement because r – calculated is greater than r – critical at 0.05 level of significance.

H_{o2} : There is no significant relationship between the responses of English teachers on extrinsic motivational factors provision for teachers and students' academic achievement.

Table 5: Pearson Product Moment Correlation analysis of relationship between the responses of English teachers on extrinsic motivational factors provision for teachers and students' academic achievement.

Item	N	\bar{X}	DF	r-Crit	r-Cal	Remarks
English teachers' extrinsic motivational responses	33	4.18	126	0.195	0.58	H_{o2} rejected
Students' academic Achievement	95	7.68				

Data in Table 5 reveals that there is significant relationship between the responses of English teachers on extrinsic motivational factors provision for teachers and students' academic achievement because r – calculated is greater than r – critical at 0.05 level of significance. H_{o2} is therefore rejected.

2.7 Findings from the Study

The following findings resulted from the study:

1. The provision of extrinsic motivational factors for teachers in Adamawa State as responded by Biology and English teachers is of low extent (Table 2).
2. All the extrinsic motivational factors presented on Table 3 enhanced students' academic achievement
3. There is significant relationship between the responses of Biology and English teachers on extrinsic motivational factors provision for teachers and students' academic achievement (Tables 4 and 5).

2.8 Discussion of Findings:

The result of this study revealed that the provision of extrinsic motivational factors for Adamawa State teachers as responded to by Biology and English teachers is of low extent (Table 2). This finding agrees with that of Ossai (1995) that Nigerian teachers are generally poorly motivated and the finding of Nwagwu (1998) that poor level of motivation is a major factor contributing to low student academic achievement. The result of the study also revealed that all the extrinsic motivational factors presented on Table 3 enhanced students' academic achievement. This findings agrees with Orisakwe (2010) that extrinsic motivational factors presented to teachers were perceived important and they enhanced students' academic achievement. The finding of the study also showed that there is significant relationship between the responses of Biology and English teachers on extrinsic motivational factors for teachers and students' academic achievement. The findings is in line with Orisakwe (2010) that there is significant relationship between teachers' perceived extrinsic motivational factors and students' academic achievement.

The implication of the results of this study is that Adamawa State government should provide extrinsic motivational factors for her teachers since provision of extrinsic motivational factors are lacking but they enhance students' academic achievement. In addition the provision of extrinsic motivational factors for teachers and students' academic achievement are significantly related. The poor state of provision of extrinsic motivational factors for teachers may be a contributing factor to poor performance of Adamawa State students in almost all the subjects in external examinations (Adamawa State statistical result, 2008). In specific terms the teachers should be provided with adequate salary, good working condition, societal recognition, housing loans among others as found out by Nwagwu (1998) and also in this study. There should be a re – thinking by the State government for providing adequate extrinsic motivational factors for teachers since the provision of the incentives increases productivity in the educational sector.

2.9 Conclusion

The provision of extrinsic motivational factors for teachers has proved significant in enhancing students' academic achievement. Since there is positive relationship between extrinsic motivational factors provision and students' academic achievement, it means that Adamawa State government and other stakeholders in education should provide the incentives for teachers to enhance productivity. There should be provision of good salary, good working conditions and other benefits that are lacking (Table 2) in order to boost the morale of teachers at work to enhance students' academic achievement.

3.0 Recommendations:

The following recommendations resulted from the findings of this study.

1. Adamawa State government should provide adequate extrinsic motivational factors for her teachers.
2. Good salary, general good working conditions and, enough facilities for teaching and learning, should be provided for teachers to boost the morale of teachers in order to enhance students' academic achievement.

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