

Strategies for Enhancing Human Resources Management in Electrical/Electronics Technology Education in Ebonyi State of Nigeria

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Abstract - This study investigated the strategies for enhancing effective human resources management in electrical/electronics (E/E) technology education in Ebonyi state of Nigeria. Two research questions and two research hypotheses guided the study. The design adopted was descriptive survey. A total population of 28 E/E personnel in the state were used for the study, consisting of E/E educators/management cadre E/E personnel and none academic staff of E/E technology education in the state. Since the population was manageable, no sampling was carried out. Questionnaire was the instrument used for data collection. Mean and standard deviation were used to answer the research questions while t-test statistic was used to test the hypotheses at 0.05 level of significance. Found strategies include: the application of participative management technique, use of only technically competent administrators-not general educators, use of management by objective (MBO) and others. It was then recommended that in each specified strategy, effective remuneration and positive reward system should form the principal strategy for enhancing human resources management in E/E technology education.

Introduction

Horby (2001) defined resources as the supplies of raw materials, natural or artificial availabilities. Resources are those things that can be turned to for help support or consolation in time of need. Resources are also referred to as natural endowment on individuals such as ingenuity, quick wit or initiative (Dale, 2000 and Olaitan 1996). Hence, human resource connotes available men, woman and children with their endowment ingenuity, initiative and creativity. Eneasator and Nduka(1998) enumerated the human resources in a school system to include the teachers, none-teaching or support staff, students, parents, community members, the ministry of education officials, employers of labour and even the school administrator together with other inters groups. Akuma (2008) defined human resources management as the process of accomplishing organizational objectives by acquiring, developing, retaining, properly utilizing human resources and terminating its use in an organization.

Aderounmu and Ehiametalor (1981) asserted that human resources management is also referred to as personal management and often defined as the process of getting qualified personnel to provide instructional services necessary for the achievement of the goals of the school system. Involved roles in human resources management include school needs assessment; selection and recruitment of professionally qualified staff; staff orientation; staff remuneration and motivation; staff promotion; staff development, staff retention; staff transfer; staff evaluation and if need be termination of staff appointment. Human resources management is the most tasking and critical aspect of any organizational management and administration due to the above roles and the associated complexities (Akpan ,1995 and Peretomode 1996).

These complexities are more pronounced in electricity/ electronics (E/E) technology education because of extra technical details and complexities involved. Electricity/Electronics (E/E) technology education is the aspect of

technology and vocational education which deals with the study of the properties and behaviours of elementary charged particles such as electrons and protons, and their applications in science and technology (Shepherd, Morton and Spence, 1979). The E/E option of industrial technology education programme as offered in Nigerian universities combines the aspects of electrical engineering and electronic engineering to produce specialist E/E technical teachers, technologists and educators. Human resources management in this field is much more complex because it involves the management of diverse professional and technical personnel with differing skill levels, competencies industrial work-habits and individual difference. It was on these notes that Akpan (1997) declared that the most difficult and time-consuming job of vocational education administrators is human resources management which border on personnel hiring, promotion, capacity building, remuneration, interaction with trade unions and terminating appointments.

The problem of this study is that this arduous administrative function had been a major set-back to overall administration of technology and vocational education in Nigeria, E/E technology education inclusive. Okoro (2006) maintained that personnel administration or human resources management is so important that the quality of vocational technology education programme depends on the quality of human resources in that institution and on the interaction/inter-relations between members. Unfortunately, this all-important administrative function had been neglected especially in the

field of Electrical/Electronics E/E technology education in Ebonyi state of Nigeria; thereby hindering the achievement of the set objectives. There is therefore urgent need for determining the strategies for enhancing human resources management in Electrical/Electronics technology education programme in Ebonyi state and applying same for the over all technological development of the state and the whole nation-Nigeria. The general purpose of this study is to determine the strategies for enhancing human resources management in Electrical/Electronics E/E technology education in Ebonyi state of Nigeria.

Research Questions:

This study was guided by the following research questions.

1. What are the potent traditional administrative strategies for enhancing human resources management in E/E technology education in Ebonyi state of Nigeria.
2. What are the potent modern administrative strategies for enhancing human resources management in E/E technology education in Ebonyi state of Nigeria.

3. Research Hypotheses

This study was guided by the following research hypotheses tested at 0.05 level of significance.

H_{01} : There will be no statistical significant difference between the mean responses of E/E educators/management cadre E/E personnel and those of non-academic staff of E/E technology education in Ebonyi state on the potent traditional administrative strategies for enhancing human resources management in

E/E technology Education in Ebonyi state of Nigeria.

H₀₂: The mean responses of E/E educators/management cadre E/E personnel and those of none-academic staff of E/E technology education in Ebonyi state on the potent modern administrative strategies for enhancing human resources management in E/E technology education in Ebonyi state of Nigeria will not be significantly different.

Methodology

The research design adopted for this study was descriptive survey within the area of Ebonyi state of Nigeria. A total population of 28 E/E technology education personnel within the state especially in the state university were used for the study. Out of this population 12 were E/E educators/management cadre E/E personnel while 16 were E/E none-academic staff. E/E educators in the population were lectures of the state university who joined with management cadre of E/E personnel in the state colleges and ministries to form the first segment of the population. The management cadre E/E personnel were defined in this study as E/E personnel with master degree or have served up to 10 years with E/E B.sc or B.Sc (ed). The second segment of the population consists of all other E/E personnel starting from the technologists not covered by the above definition. No sampling was carried out because this population was not too large to be covered.

Structured questionnaire was the instrument used for data collection as developed by the researcher using a four-point response scale of: strongly Agree (4), Agree (3), Disagree

(2) and strongly disagree (1). The instrument was face-validated by three experts: two of them from technology and vocational Education (TVE) department while one was from measurement and evaluation department. Test-retest method of reliability establishment was used with Pearson Product Moment, correlation computation yielding 0.86. coefficient of stability. The instrument was administered by hand with the aid of two research assistants. One questionnaire was wrongly completed while two could not be retrieved, yielding 89.29% return.

Mean and standard deviation were used to answer the research questions while students t-test statistic was used to tests the hypotheses at 0.05 level of significance.

Results

The result of the data analysis were presented in tables below in line with the research questions and hypotheses. Each composite table showed the answer to a particular research question together with t-cal for the corresponding hypothesis.

Research Question I

What are the potent traditional administrative strategies for enhancing human resources management in Electrical/Electronics technology education in Ebonyi state of Nigeria.

Research Hypothesis 1

There will be no statistical significant difference between the mean responses of E/E educators/management cadre E/E personnel and those of none-academic staff of E/E technology education in Ebonyi state on the potent traditional administrative strategies for

enhancing human resources management in E/E technology education in Ebonyi state of Nigeria.

The results to the analysis of data pertaining to research question 1 and hypothesis 1 above are all presented in table 1 below:

Table 1
Mean ratings, standard deviation and t-test statistic of responses on the potent Traditional Administrative Strategies for Enhancing human Resources Management in Electrical/Electronics Technology Education in Ebonyi state of Nigeria

S/N	Item Statement	Mean	SD	t-cal	Remarks	
1.	Using single administrator to administer both general education and E/E technology programme had been the old tradition and is still potent now.	1.25	1.02	0.81	DA	NS
2.	Formulating, proposing and gaining acceptance for personnel policies and philosophy are traditional initial strategies for enhancing human resources management which are still potent.	3.42	1.26	1.37	AG	NS
3.	The traditional strategy of advising and guiding government/management on the implementation of personnel policies and strategies by the school administrator is still potent now.	2.82	1.01	1.22	AG	NS
4.	Selecting and recruitment of suitably qualified staff for every position is a traditional strategy still very potent in enhancing human resources management in E/E technology education programme.	2.92	1.33	0.88	AG	NS
5.	Effective orientation and induction of new staff is a traditional or conventional administrative strategy for enhancing human resources management which is still potent today.	3.11	0.90	1.12	AG	NS
6.	Effective remuneration of staff in any organization is a traditional strategy for enhancing human resources productivity and management which can still be potent today in E/E technology education programme	3.85	1.01	1.08	AG	NS
7.	Autocratic leadership style is an administrative strategy traditionally used to manage very difficult group of staff or personnel and this can still be potent today.	2.24	1.56	3.41	DA	S

8.	Strict application of management theory X is a traditional administrative strategy for enhancing human resources productivity and management which can still be employed today.	1.87	1.43	2.91	DA	S
9.	Capacity building and progressive in-service training of personnel in response to constant technological changes and work-place needs are traditional strategies still potent today in E/E technology education programme.	3.88	0.94	1.05	AG	NS
10.	Effective and efficient communication system within the school organigram is a traditional administrative strategy for enhancing human resources management which can still be used today in E/E technology education programme.	3.15	1.21	0.78	AG	NS
11.	Regular promotion of deserving staff, merit awards and upgrading are traditional strategies for enhancing human resources management.	3.91	0.66	0.92	AG	NS
12.	Proper organization of personnel in the school, allocation of duties, responsibilities and wise delegation of duties are traditional administrative strategies for enhancing human resources management still potent today.	2.79	1.55	1.18	AG	NS
13.	Efficient and effective conflict resolution method are traditional administrative strategies for enhancing human resources management which can be potent in E/E technology education.	2.89	1.24	1.03	AG	NS
14.	Application of diverse staff retention techniques to avoid brain-drain is a traditional administrative strategy for enhancing human resources management still potent today.	2.68	1.19	1.23	AG	NS
15.	Continuous staff evaluation process aimed at improving the effectiveness of the staff rather than means of punishing them is a traditional administrative strategy for enhancing human recourse management which can still be potent today in E/E technology education in Ebonyi state of Nigeria.	2.66	1.21	2.96	AG	S

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Research Question 2

What are the potent modern administrative strategies for enhancing human resources management in E/E technology education in Ebonyi state of Nigeria.

Hypothesis 2

The mean responses of E/E educators/management cadre E/E personnel and those of non-academic staff of E/E technology education in Ebonyi state on the potent modern administrative strategies for enhancing human resources management in E/E technology education in Ebonyi state of Nigeria will not be significantly different.

Table 2

Mean Ratings, Standard Deviation and t-test Statistic of Responses on the Potent Modern Administrative Strategies for Enhancing Human Resources Management in Electrical/Electronics Technology Education in Ebonyi State of Nigeria.

S/N	Item Statement	Mean	SD	t-cal	Remarks	
1.	Dual-control administrative technique where the ministry of technology education is separated from that of general education is modern administrative strategy for enhancing human resources management in E/E technology Education.	3.44	1.07	1.03	AG	NS
2.	Dual-control administrative method where general education administrators will never administer the affairs of technology based education at all levels of education is a potent strategy.	3.31	0.86	0.93	AG	NS
3.	Dual-control administrative method where only technically qualified, competent and proven administrators/educators are appointed to administer the affairs of technology based education especially E/E education is a potent modern strategy.	3.81	1.11	1.06	AG	NS
4.	Effective application of PPBSM (planning, Programming, Budgeting system model) administrative technique is a potent modern strategy for enhancing human resources management in E/E technology education.	2.83	1.04	1.01	AG	NS
5.	Management By Objective (MBO) is a modern collaborative administrative strategy potent in enhancing human resources management in E/E technology education.	2.92	1.22	1.20	AG	NS

6.	Effective application of programme Evaluation Review Model (PERM) is a modern administrative strategy is potent in enhancing human resources management in E/E education.	2.74	1.56	1.17	AG	NS
7.	Effective utilization of management information system (MIS) is a modern administrative strategy for enhancing human resources management in E/E technology education programme.	3.56	0.97	0.88	AG	NS
8.	Utilization of operations research model (ORM) is a modern administrative strategy potent in enhancing human resources management in E/E technology education	3.03	1.18	1.07	AG	NS
9.	Effective application of zero-based Budgeting Model (ZBBM) is a modern administrative strategy potent in enhancing human resource management in E/E technology education.	2.68	1.12	2.46	AG	NS
10.	Effective utilization of critical path method (CPM) and Time Estimate (TE) or critical path analysis modern administrative strategies are potent for enhancing human resources management in E/E technology education programme.	2.89	1.31	1.37	AG	NS
11.	Effective application of the systems Approach Method (SAM) modern administrative strategy is potent in enhancing human resources management in E/E technology education programmes.	3.77	0.35	1.20	Ag	NS
12.	Utilization of Delphi Technique (DT) modern administrative strategy is potent in enhancing human resources management in E/E technology education	2.79	0.81	0.41	AG	NS
13.	Participative management Technique (PMT) administrative strategy is potent in enhancing human resource management in E/E technology Education programme in Ebonyi state of Nigeria.	3.93	0.73	0.57	AG	NS

Key:

NT = 28 = Total number of respondents

NAE/M = 12 Number Educator/management E/E personnel

NNA = 16 = Number of none-Academic staff

NU = 25 = Number used for analysis

AG = Agree; NS = Not significant

DA = Disagree S = significant

t-cal = calculated t-value

t- Table = critical t- value in the table = 2.07; df

Degree of Freedom (12+13-2) = 23 and P <0.05

Tables 1 and 2 showed the results of data analysis where each research question was answered along side with their corresponding hypothesis test result in other to save time and space. In all, 3 three items were disagreed to be potent strategies for enhancing human resources management in E/E technology education while 25 were agreed to be. Also 4 items had their null hypothesis up held while 24 were rejected.

Summary of Findings

Based on the analyzed data, the following findings were made.

1. The traditional method of formulating personnel policies and guiding their implementation were found to be potent in enhancing human resources management in E/E technology education.
2. Strict applications of management theory X, autocratic leadership style and single control were all found to be counter productive and therefore not potent strategies.
3. Effective remunerations, capacity building and regular promotion were found to be the highest rated traditional potent strategies.

4. Dual-control in its full sense was found to be fore-most modern potent strategy
5. Participative management techniques (PMT), systems approach method (SAM) and management information system (MIS) were the highest rated potent modern strategies for enhancing human resources management in E/E technology education.

Discussion

The findings of this study showed a mean rating of 1.25 and t-cal of 0.81 for single administrator controlling both general education and E/E technology education or any other technology based education. This means that the respondents unanimously strongly disagreed with single control as a strategy for enhancing human resources management in E/E technology education programme. This is in line with Olaitan, Nwachukwu, Igbo, Onyemaechi and Ekong (1999) who strongly condemned single control as administrative strategy in technology based educational programmes. Okoro (2006) empathized that the danger of single control is that the single administrator is usually a general education specialist who has no knowledge about technical education talk less of any technical manipulative skills to help him administer technology based education effectively.

Consequently, the respondents strongly agreed to items 1,2 and 3 of table 2, upholding all the corresponding hypotheses with respect to dual control and the appointment of only technically qualified, competent and proven E/E administrator or educator to administer technology based education programmes. It is only this technically qualified administrator that

can effectively implement the technical and vocational education policy in Nigeria (FGN, 2004); and also technically apply all the 13 agreed modern administrative strategies for enhancing human resources management in E/E technology education as specified in table 2 (UNESCO, 1984; Akpan, 1997 and Okoro, 2006).

RECOMMENDATIONS

Based on the findings of this study the following recommendations were made.

1. Dual-control administrative strategy should be entrenched with enhancing legal backing and policy statements in Ebonyi state for effective human resources management in E/E technology education programme.
2. The government of Ebonyi state should effectively remunerate E/E personnel promote them regularly, operate positive reward system and engage them in efficient capacity building for technological advancement of the state and break-throughs.
3. Participative management technique should be employed by all E/E technology education administrators to ensure efficient and effective human resources management in E/E technology education in Ebonyi state of Nigeria.

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