

Innovations

Emerging Trends of Training Middle Level Manpower Needed in Electrical Installation and Maintenance Work: An Impetus towards Socio- Economic Development in Oyo State

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Abstract

The research study sought to examine the emerging trends of training middle level manpower needed in electrical installation and maintenance work as an impetus towards socio-economic development in Oyo State. A descriptive design survey was adopted to harvest the information, views and opinions from the respondents. The population of two hundred (200) involving fifty lectures and instructors while one hundred and fifty (150) of the final years of the students used for the study. The reasons for considering the final year students of Oyo State Government Technical was because their involvement in practical task in the school workshops. Three research questions were raised for the study. The instrument for the data collection was tagged "Emerging trends of training middle level manpower needed in electrical installation and maintenance work Questionnaire (ETMMNEIMWQ)". Three experts involving two from measurement and evaluation department and one from the department of technical education, Emmanuel Alayande College of Education, Oyo, Oyo State validated the instrument using face and content validity. The reliability of the instrument was determined using Pearson Product Moment Correlation Coefficient to obtain 0.75 reliability index. A pilot test was carried out in Ogun State and was observed for two weeks to obtain the same results, indicating that the result of the instrument is reliable and appropriate to measure what was expected to measure. Mean and Standard Deviation were used to analysis the data collected using five likert of Strongly Agree= 5, Agree=4, Disagree=3, Strongly Disagree=2 and Undecided= 1 at a cut-off points greater than or equal to 3.0 and 0.50 as Agree while below 3.0 and 0.50 as Disagree using the SPSS 22 edition. Discussion of findings of the study revealed that the emerging trends of modern electrical tools in installations and maintenance work available in training middle level manpower for socio-economic development in Oyo State were adequate to outwit the outdated ones so as to enable the middle level manpower to be dynamic in the use of modern tools for electrical installation and maintenance work in their day today activities among others, while conclusion and recommendations were made among which was that the middle level manpower should be trained and retrained on how to make use of the modern electrical tools, equipment and machines in line with the manufacturers' instructional guides.

Key Words: Training, Manpower, Electrical Installation, Maintenance Works, Socio- Economic and Development

Introduction

Accomplishment in a certain endeavour may be dependent upon certain feature of middle level manpower trades available for the future of the youths. This may also be true of the achievement in emerging trends of training middle level manpower needed in electrical installation and maintenance work for socio-economic development of society and as well driving the growth of the nation. Middle level manpower training is like sharpening existing skills in order to reflect the trends in technology and other social-cultural environment changes of an organization. In view of this, Middle level manpower training in education, economic, political and other form of the sectors is the act of preparing youths towards leadership roles in creativities and innovation. The term middle level manpower training has been defined in various ways by different authors which refer to improving competencies needed today or in the future (Jackson & Schuler, 2003). Middle level manpower training is the act of increasing the knowledge and skills of an employee for better performance on the job assigned to a person in question. The main objective of middle level manpower training and socio-economic development in service organization is to increase efficiency of employees with the resulting to increase in corporate productivity. This accounts for why a large number of fund and time is being expedited by organization at one period or the order is to invest into improvement of the skills of their employees at various levels.

Consequence upon this, the term middle level manpower training refers to the acquisition of knowledge, skills competencies required and needed to be acquired as a result of vocational or practical skills and knowledge that relates to specific useful competencies needs are concerned. Walker (2005) opined that "in the 1990s and beyond, organization will invest more not less in efforts to train, retrain and develop talent". He further stressed that middle level manpower training and socio-economic development which is a tool for the employment growth used by organization to equip their workforce to the accomplishment of the set goals and objectives required for emerging trends of modern method of training that based on the level of technologies development in the global worlds.

The role of middle level manpower on organizational effectiveness has been an area of constant debate, and as well perceived in different dimensions however, middle level manpower training and socio-economic development must be based on the need analysis derived from a comparison of 'actual or need performance' and behaviour with 'require performance' and behavior in addition. Middle level manpower training and development is of the major ways the organizational effectiveness rests on the efficient and effective performance of workforce in return, rest on the richness of the knowledge, skills and abilities possessed by the workforce. Middle level manpower training and socio-economic development in most organizations is a continual act exercise designed and set aside for their employees in order to improve on their designated job performances.

The principal intention of middle level manpower training according to Akpan (2010) which is of the opinion that equipping people with the practical knowledge require to be acquired for a particular position of employment, improving their skills and efficiency in the position

already occupied in technical manpower development, improve the growth and the acquisition of wide experience for future strategies advantage of the organization. Middle level manpower and development is an in-service training in the organizations therefore focusing on the objectives of the equipment of the personnel in the service from the point of the recruitment to that of retirement, so that manpower be kept constantly ready not only to provide and improving the living conditions of organization, but also set the machinery for the achievement, accelerated growth and development with the institution. Middle level manpower training and socio- economic development is essential to the existence and survival of organization. Olowu (2000) supports this school of thought as rightly pointed out that human resources of middle level training and development for effective performance.

Therefore, according to the Federal Republic of Nigeria, National Policy on Education (FRN, 2013) emphasized that in the Electrical Installation and Maintenance work trades or subjects' policy of the curriculum content of technical college and senior secondary schools are designed to provide students with in-depth of the concepts knowledge of basic or applied electricity, in order to promote the understanding level of practical in electrical installation and maintenance work trades that make the students to be relevant in the field of world of work and industries. The objectives of the curriculum is however, designed at developing broad application of technical skills which includes problem solving, communication, critical thinking and objective reasoning abilities, that would enable the students prepare for work place and self-sustainability in the world economy, as well guaranty national security and socio-economic development (FRN, 2013).

With all these aforementioned objectives of the curriculum in mind, students irrespective of the gender (male and female) are expected to be useful and productive members of the society after graduation from technical colleges and couple with Students Industrial Work Experience Scheme (SIWES) propelling to be compulsory for duration of six months to gain industrial experiences in order to bridge the gaps between theory and practical for the students that may lack in the school setting workshops. Fortunately, technical colleges' students tend to be practically oriented as a result of availability of human and materials resources such as sophisticated tools, equipment and machines provided for their training while in the colleges. This trend has been attributed to basic or applied electricity teachers and among others to develop holistic keen interest in both theories and practical method of teaching the subjects. In view of this involvement of trades skills required in the application of electrical installation and maintenance work for electrical appliances in both at domestic and industries usages, Skills acquisition therefore, can only be developed through constant practice of electrical/electronic technology in the schools/colleges' workshop along with theories in Oyo State Government Technical Colleges for the students to be self-reliance upon their graduations.

Therefore, socio-economics is the social science and branch of economics that focuses on the interrelationship between economic activity and social behavior of the people in the society towards economic development act and how the economy is mapped out and impacted in

line with Dugger, &Naik, (2010)It is on this background that there is need for assessing the outcomes of the application of the skills acquired in Oyo State Technical Colleges in line with the objectives of Federal Government of Nigeria, National Policy on Education, (2013) and National Board for Technical Education, (NBTE, 2013) respectively.

Statement of the Study

The world is a global village since the inception of Information and Communication Telecommunications (ICT) of whichNigeria is not an exceptional in view of the emerging trends in modernizations to all developmental sectors of life such as economic, education, politics and hosts others. Therefore, one needs to be acquitted with the new emerging trends so as not to be backward, stagnant or domicile in their different field of endavour particularly in education trainingsuch like technical colleges and alike. The middle level manpower such as technicians and artisans training in electrical installation and maintenance works should not be exceptional from the development as there many sophisticated tools, equipment and machines readily available in the market for the training that cannot only improve the services but also fast tracking and quicken the service needs to be rendered by technicians and artisans within a shortest possible time.

Although in the past, the use of outdated tools, equipment and machines have hindered the improvement of middle level manpower performance, thereby delaying the work of electrical installation and maintenancework for so long and render their service to the customer invaluable. It is on this background that the study for emerging trends of training middle level manpower towards the use of sophisticated tools, equipment and machines in electrical installation and maintenance workisan impetus towards socio-economic development in Oyo State.

Purpose of the Study

The main purpose of the study to examine the emerging trends of training middle level manpower in electrical installation and maintenance work is an impetus for socio-economic development in Oyo State. Specifically, the study intended to:

- assess the emerging trends of modernelectricaltools in installationand maintenance work available in training for socio-economic development in Oyo State
- determine the emerging trends of modern available training equipment in electrical installation and maintenance work for socio-economic development in Oyo State
- examine the emerging trends of modern electrical machines in installation and maintenance workavailablein training for socio-economic developmentin Oyo State

Research Questions

Three research questions were raised for the study

- To what extent do the emerging trends of modern electrical tools in installations and maintenance work available in training middle level manpower for socio-economic development in Oyo State?
- Are there emerging trends of adequate modern equipment in electrical installation and maintenance work for the training of middle level manpower for socio-economic development in Oyo State?
- How does merging trends of modern electrical machines in installation and maintenance work available train for socio-economic development in Oyo State?

Methodology

A descriptive design survey was adopted to harvest the information, views and opinions from the respondents. The population of was two hundred (200) involving fifty (50) lectures and instructors while one hundred and fifty (150) of the final years of the students were used for the study. The reasons for considering the final year students of Oyo State Government Technical Colleges was because their involvement in practical task in the school workshops. The instrument for the data collection was tagged: "Emerging Trends of Training Middle level Manpower Needed in Electrical Installation and Maintenance Work Questionnaire (Ettmmneimwq)". Three experts involving two from measurement and evaluation department and one from the department of technical education, Emmanuel Alayande College of Education, Oyo, Oyo State validated the instrument using face and content validity.

The reliability of the instrument was determined using Pearson Moment Correlation Coefficient to obtain 0.75 reliability index. A pilot test was carried out in Ogun State and was observed for two weeks to obtain the same results, indicating that the result of the instrument is reliable and appropriate to measure what was expected to measure. Mean and Standard Deviation were used to analysis the data collected from three research questions using five likert of Strongly Agree= 5, Agree=4, Disagree=3, Strongly Disagree=2 and Undecided= 1 at a cut-off points greater than or equal to 3.0 and 0.50 as Agree while below 3.0 and 0.50 as Disagree using the SPSS 22 edition.

Results and Discussion

Research Question 1: To what extent do the emerging trends of modern electrical tools in installations and maintenance work available in training middle level manpower for socio-economic development in Oyo State?

Table 1 responses of the emerging trends of modern electrical tools in installations and maintenance work available in training middle level manpower for socio-economic development in Oyo State.

S/N	Items	Mean Value	S D	Remarks
1	Helps to develop the ability of the middle level manpower for socio-economic development	4.50	0.65	Agreed
2	Helps the middle level manpower to discover the God given talents for socio-economic development	4.40	0.63	Agreed
3	Helps the middle level manpower to acquit the latest modern available tools for socio-economic development	4.25	0.62	Agreed
4	Helps the middle level manpower to broaden the knowledge in the field of their endeavour for socio-economic development	3.85	0.58	Agreed
5	Helps the middle level manpower to be highly competitive with others in performing the skills acquired for socio-economic development	3.80	0.56	Agreed
6	Helps the middle level manpower to be skillful in practical acquisition and delivery for socio-economic development	4.15	0.60	Agreed
7	Helps the middle level manpower to work within the stipulate assigned by the clients for socio-economic development	3.75	0.55	Agreed
8	Helps the middle level manpower to be advanced in skill acquisition for socio-economic development	3.70	0.54	Agreed
9	Helps the middle level manpower to have a goodsatisfactory performing jobs for socio-economic development	4.00	0.59	Agreed
10	Helps the middle level manpower to be relevant to in industries for socio-economic development	4.20	0.61	Agreed
11	Helps the middle level manpower to be self-reliance for socio-economic development	4.10	0.58	Agreed
12	Helps the middle level manpower to be job creation for socio-economic development	4.05	0.57	Agreed
13	Helps the middle level manpower to contribute their quota to the socio- economic development	3.70	0.54	Agreed

Field survey 2022, S.D= Standard Deviation

The table 1 of the response shows that the highest mean value and standard deviation of 4.50 and 0.65 on item 1 while the lowest mean value and standard deviation of 3.75 and 0.55 on item 7 respectively. All the items were responded to and agreed by the respondents as the mean values and standard deviation were above the cut-off point of 3.00 and 0.50. This however, indicates that all the items generated from the instrument for the data collection were in agreement with research question.

Research Question 2 Are there emerging trends of adequate modern electrical equipment in installation and maintenance work for the training of middle level manpower for socio-economic development in Oyo State?

Table 2 of the responses of emerging trends of adequate modern electrical equipment in installation and maintenance work for the training of middle level manpower for socio-economic development in Oyo State

S/N	Items	Mean Value	S D	Remarks
14	Adequate of modern of hands equipment in Electrical Installation for socio-economic development	3.87	0.62	Agreed
15	Adequate of modern of hands equipment in Maintenance work for socio-economic development	3.84	0.60	Agreed
16	Adequate of modern of Oscilloscopes equipment for maintenance work for socio-economic development	3.82	0.58	Agreed
17	Adequate of modern of electrical drilling equipment electrical installation for socio-economic development	3.78	0.55	Agreed
18	Adequate of modern of electrical screwing equipment for the electrical installation for socio-economic development	3.80	0.56	Agreed
19	Adequate of modern of electrical tightnequipment for socio-economic development	3.75	0.54	Agreed
20	Adequate modern of electrical testing equipment for the continuity of cable for socio-economic development	3.70	0.53	Agreed

Field survey 2022, S.D= Standard Deviation

Table 2 of the research study data shows the highest mean value and standard deviation of 3.87 and 0.62 on item 14, while the lowest mean value and standard deviation of 3.70 and 0.53 on item 20 respectively. This however indicates that all items were above the cut-off point of

the remarks and measured what was designed to measure in the questionnaire or instrument responded to by respondents.

Research Question 3: How does emerging trends of modern electrical machines in installation and maintenance work available train middle level manpower for socio-economic development in Oyo State?

Table 3 responses of emerging trends of modern electrical machines in installation and maintenance work available train middle level manpower for socio-economic development in Oyo State

S/N	Items	Mean Value	S D	Remarks
21	Modern electrical installation and maintenance work available train middle level manpower for trouble shooting of components problem for socio-economic development	4.58	0.67	Agreed
22	Modern electrical installation and maintenance work available train the middle level manpower for identifying type of components in the circuit diagrams for socio-economic development	4.56	0.65	Agreed
23	Modern electrical installation and maintenance work available train middle level manpower in soldering of the component for socio-economic development	4.54	0.63	Agreed
24	Modern electrical installation and maintenance work available train middle level manpower in diagnosing the identified problem in a circuit for socio-economic development	4.53	0.60	Agreed
25	Modern electrical installation and maintenance work available train the middle level manpower to replace of the faulty components for socio-economic development	4.50	0.58	Agreed
26	Modern electrical installation and maintenance work available train middle level manpower to determine the value of the components in the circuit for socio-economic development	4.00	0.55	Agreed
27	Modern electrical installation and maintenance work available train middle level manpower to understand the practical function of each of the components for socio-economic development	3.58	0.52	Agreed
28	Modern electrical installation and maintenance work	3.55	0.51	Agreed

	available train middle level manpower on how to read circuit diagrams for socio-economic development			
29	Modern electrical installation and maintenance work available train middle level manpower to read the continuity of the installation of cable for socio-economic development	3.54	0.50	Agreed
30	Modern electrical installation and maintenance work available train middle level manpower to connect various component panels of electronic system for socio-economic development	3.52	0.54	Agreed

Field survey 2022, S.D= Standard Deviation

Table 3 of the research study data analysis shows the highest of the mean value and standard deviation of 4.8 and 0.67 on item 21 while the lowest of the mean value and standard deviation of 3.2 and 0.51 on item 30 and 28 respectively. Although, all items positively responded to by the respondents, agreeing to item questionnaire indicating that the items were in agreement with the research question expected to measure what was designed to measure.

Findings of the Study

Table 1 of the research study revealed that the emerging trends of modern electrical tools in installations and maintenance work available in training middle level manpower for socio-economic development in Oyo State Technical Colleges were adequate to outwit the outdated ones so as to enable the middle level manpower to be dynamic in the use of modern tools for electrical installation and maintenance work in their day today activities which was in line with the research study of Dugger, & Naik, (2010) on socio-economic development.

Table 2 on the research study of the emerging trends of adequate modern electrical equipment in installation and maintenance work for the training of middle level manpower for socio-economic development in Oyo State revealed that modern equipment were available for the training of middle level manpower as Olowu (2000) stated that human resources of middle level training and development enable civil servants (employees) to acquire the relevant professional skills and knowledge for effective performance and as well to be self-reliance in his study.

Table 3 of the study on the emerging trends of modern electrical machines in installation and maintenance work available for the training of middle level manpower for socio-economic development in Oyo State Government Technical Colleges especially in the field of electrical installation and maintenance work for both electrical and electronic gadgets which toes in line with Akpan (2010) in his study of the practical knowledge require to be acquired for a particular position of employment that would be of improving their skills and efficiency in the

position already occupied in technical manpower development, improve the growth and the acquisition of wide experience for future strategies advantage of the organization.

Conclusion

It has been concluded that modern electrical tools equipment and machines in training of middle level manpower for socio-economic development would be of tremendous improvement to electrical installation and maintenance work for both trainers, trainees and clients because a lot would be achieved with fast method of applications. It also proved that the study would the competent of trainers and trainees to be self-reliance, job creators and be very useful in industries and organization for socio-economic development.

Recommendations

Based on the findings of the study the following recommendations were suggested

- ❖ That the middle level manpower should be trained and retrained on how to make use of the modern electrical tools, equipment and machines in line with the manufacturers' instructional guides
- ❖ That the instructors to the training of middle level manpower should continually be trained where necessary that would improve their performance from time to time.
- ❖ That the modern tools, equipment and machines should be made available to trainers and trainees for the training and improvement of middle level manpower to be increase in numbers for the use of industries and self-reliance for socio-economic development of Oyo State and Nigeria as whole.

References:

1. Akpan, E.E (2010) "Staff training and development" in Ejiogun, Achumba, & Asika (eds). *Reading in Origination Behaviour in Nigeria, Lagos. Malthouse Press Ltd, Pp. 159-167.*
2. Dugger, W., & Naik, N. (2010). *Clarifying misconceptions between technology education and educational technology, the Technology Teacher, 61(1), 31-35.*
3. *Federal Republic of Nigeria (2013). National Policy on Education, Nigeria Educational, Research and Development Council (NERDC) Press. Nigeria Yaba Lagos*
4. Jackson, V.S & Schuler, B.A (2003). *Meaning of Training and Development; retrieved on October 2nd, 2011 from: www.write work.com. Journal of Industrial Education. 14(2), 76-85.*
5. *National Board for Technical Education, (NBTE, 2013). Higher National Diploma and National Diploma in Electrical and Electronics Technology Curriculum and Course Specifications Kaduna:.*
6. Olowu, K (2000) *Manpower Development in Nigeria in Ogbuagu (ED): Strategy for National Development in Nigeria Calabar: University of Calabar Press, Pp. 143-154.*
7. Walker, C. K (2005) *Training and Retraining: A Variable of Technological Development.*