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TRAINING AND RE-TRAINING OF TECHNOLOGY TEACHERS IN NIGERIA IN THE 21ST CENTURY: A CASE STUDY OF PLATEAU STATE

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Abstract
The purpose of this study is to find out whether the 21st Century Technology Teachers have received the desired training and retraining to meet up with the challenges of the technological advancement. To ascertain the prevalent in lack of training and retraining of technology teachers in our training institutions in Plateau State, and its consequences in impacting knowledge by the untrained personnel to the young ones yearning for knowledge, and saleable skills for the challenging society. It is evident that Technology Teachers can play a vital role in salvaging the society from technological stagnation by providing marketable skills to the numerous educated but unskilled graduates.To achieve this.training and re-retraining of the teachers is very pertinent because it will provide updated knowledge for them to meet up with the ever growing complex technological society in the 21st "century.Survey research design was adopted for the study. A total population of 100 technical teachers comprising 30 Lecturers.30 tutors from technical schools and 40 from the Junior Secondary School who are Teaching Technical Subjects. Structured questionnaire was used to collect data from the respondent. The instrument was face validated and tested for reliability which yielded a reliability coefficient of 0.87. Mean and standard deviation were used to answer the research questions. Mean responses of 2.50 and above was regarded as agreed while a Mean below 2.50 was regarded as disagreed.The questionnaire was structured along the Likert scale format. Each response category was assigned a corresponding nominal value of Strongly Agree (SA)-5, Agree (A)-4, Undecided (UD)-3, Disagree (D)-2 and Strongly Disagree (SD)-1. Recommendations were profered to enhance Technology Teacher productivity and better performance.

Keywords: Technology Teachers, Teacher Training and Retraining, Technological Advancement, Teacher Professional Development, 21st Century Skills

Background of the Study

Teacher training in Technical and Vocational Education is amorphous as the main role in providing skill. Training is concerned with the development of knowledge and skills to be used immediately or in the very near future and deals with developing people who already have or who are just about to enter job Felix (2022

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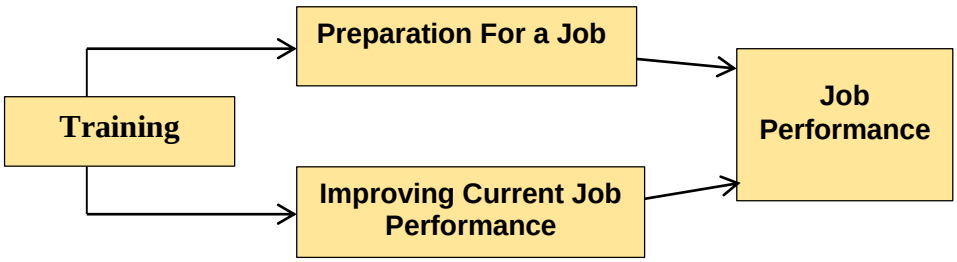
Preeti Dixit (2023) said in a nutshell, Vocational education and training is learning activity which contributes to sucessful economic performance and tangible economic and social gains. Therefore, training and retraining of Vocational teachers cannot be overemphasis considering its role in economic development of the nation.

TRAINING AND RETRAINING AS A TOOL FOR PROMOTING WORKERS'

Retraining is regarded as upgrading of existing skill or acquiring a new one Mabel Oyitso et,al (2021 or 2015) reiterate that retraining as subjecting or exposing an individual to further training and practice after the initial training. However, retraining may also be taken as way of improving the teacher productivity and performance in the current realities in the dynamisms of technological world. Technology on the other hand is a way of life and a culture in itself it more than tools,artefacts machines and process (Abdullah Alsaleh 2024).

Training and retraining programme could b e o f short or long term depends on the needs. The schema below shows why retraining is considered pertinent;



Retraining of teachers enable them to teach any Vocational subject, getting industries to be mentors to enable them train students who are suitably skilled for work place, developing multi-skilled students.

Need for Training and Re-training

Our society is dynamic, our needs, values, aspirations and expectations change from time to time. Knowledge, skills, and methodologies also change as a result of research since education is the fastest tool for socialization and propagation of culture. Teachers are tools used to implement the teaching and learning process.

Therefore, all education teachers should be trained and retrained on a regular bases. Teacher has always been blame for the ills of the society in terms of immorality, indiscipline, youths' unemployment and other devastating comments resuling from education of the child. For Teacher to cure the above tendencies, he therefore needs to have updated knowledge on the happenings in the dynamic society. Hanan Abdulrab (2023) asserted that Teachers need to be retrained two to six times in their lifetime to keep abreast with changes in his profession. The main purpose of retraining of technology teachers is to improve their qualities expertise competence. efficiency, and effectiveness.

Owing to the vital role the Technology Teacher played in the technological development of the nation. the future of the nation rest in the hands of the calibre of its teachers because the qualities they possess and exhibit today will inevitably be reflected in the behaviour of the citizens of tomorrow. The reason for training vocational and technical education teachers is to be well ground with enough skills, knowledge and potentials needed for technological advancement.

Some existing technology teachers were either trained on obsolete equipment or have worked with such equipment for a long time that their skills need to be updated (Henry David Osorio Vanegas 2025). Therefore, training and retraining of teachers is extremely vital for successful implementation of teaching and learning strategies in schools.

Purpose of the Study

The main purpose of the study is to find out whether technology teachers in Plateau State are properly trained to meet up with the technological advancement of the 21st Century. The study specifically focuses on:

1. Frequency of training and retraining opportunities provided for technology teachers
2. Professional training linkages with industries for technology teachers.

3. Higher educational training opportunities provided to technology teachers.

Research Questions

Three research questions were formulated in line with the purpose of the study that guided the study;

1. What are the frequency of training and retraining opportunities provided for technology teachers
2. What are the professional training and retraining programme provided to technology teachers
3. What are the chances of further training for technology teachers

Methodology

According to (Dikko, 2016) research is a logical and systematic investigation or search for new and useful information on a particular topic through objective and systematic analysis. On the other hand, Nworgu (2006) explained that opinion of few can be surveyed and the results obtained generalized. Therefore, Survey research design was adopted for the study. This is relevant to the study because opinions were surveyed from Technology Teachers on training and retraining opportunities offered them.

Population of the study

Fig. 1 Distribution of Respondents size of organization

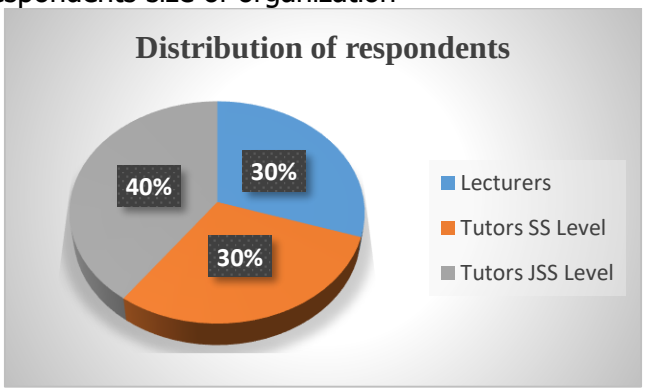


Fig.1

The population for the study include 30 Lecturers, 30 Tutors from the Senior Secondary School and 40 from the Junior Secondary section in Plateau State. The total number of the population was 100. The entire population was used for the study because the number is of adaptable size.

Instrument for Data Collection

The primary instrument for data collection is a structured questionnaire which comprises of 30 items (10 each for the 3 research questions). The instrument adopted a five 5 point Likert-scale question technique where respondents are expected to choose a numerical scale from "Strongly Agree – Agree – Neutral – Disagree – Strongly Disagree"

. **Method of Data Collection and Analysis**

These questionnaires were distributed to the respondents from Plateau State Polytechnic, Government Technical College Bukuru and some selected secondary schools in Jos and Bukuru towns. They were collected back with the aid of a research asisant and subsequntly analyzed. Mean score were used for the Likert Scale. A mean of 2.50 and above was adopted as basis for agreement while a Mean below 2.5 was regarded as disagreement.

Presentation of Results

The research work presents the results of survey data collected from the sample population which comprised of Lecturers and Tutors from various schools. The results were presented according to the factors that influence the training and retraining of technology teachers in tables;

Research Question 1.

1. What is the frequency of training and retraining opportunities provided for technology teachers?

Table 1: Mean responses on the training and retraining opportunities provided for technology teachers.N=100

S/N	Statement	SA	A	UD	D	SD	M.S	Remarks
1	Attendance of Workshops, Seminars and Conferences is not regular	14	16	25	25	20	2.79	Agreed
2	Machines/Tool and equipment are adequate for modern technology	03	23	23	44	07	2.71	Agreed
3	Machines/tools and equipment are Obsolete	34	48	03	12	03	3.98	Agreed
4	Obsolete tools and equipment are still relevant for modern technology	06	33	15	16	30	2.49	Disagreed
5	Workshops, Conferences and seminars was last held in the past 5 years	07	41	09	30	13	2.99	Agreed
6	Conferences, Workshops and Seminars are not necessary for technology teachers	04	13	03	18	72	1.49	Disagreed
7	New tools and equipment can adequately be handled without update knowledge	01	16	07	22	54	1.88	Disagreed
8	Theoretical workshops and seminars are always organized	12	46	10	22	10	3.28	Agreed
9	Workshops and Seminars are attended by nomination	03	31	23	19	24	2.70	Agreed
10	Participation in Workshops, Seminars and conferences are on personal bases	14	21	26	22	17	2.93	Agreed

***Key**: **S.A**=Strongly Agree, **A**=Agree, **U.D**=Undecided, **D.A**=Disagree, **S.D**=Strongly Disagree, **M.S=Mean Score, RMK**=Remarks (**S=S**ignificance RII ≥ 2.50, **N. S**=Not Significance RII ≤ 2.50).*

The results in table 1 shows the Mean responses of the respondents that relates to training and retraining opportunities provided for Technology Teachers. Out of 10 items seeking for availabilities of such opportunities. 7 resondents agreed. items1, 2, 3,5, 8, 9, and 10 while the respondents disagreed with items 4, 6, and 7.

Research Question 2

What are the professional training and retraining programme provided to technology teachers?

Table 2: Mean responses on professional training and retraining programme provided to technology teachers N=100

S/N	Statement	SA	A	UD	D	SD	M.S	Remarks
1	Attending disorganised workshops, conferences and seminars organised by professional bodies	0	25	14	37	24	2.40	Disagreed
2	The professional body you belong don't organize workshop	07	21	26	34	12	2.77	Agreed
3	You have no training linkages with the private technological organization	16	51	02	28	03	3.49	Agreed
4	Students are taken for education visit regularly	13	33	14	23	27	3.12	Agreed

5	There is no need for any linkages with non-technical training	15	08	08	24	45	1.92	Disagreed
6	You belong to a professional body	27	40	04	08	21	3.44	Agreed
7	The body usually organized refresher programme for its members	14	14	27	44	01	2.96	Agreed
8	Professional training and retraining are organised house at regular interval	01	07	25	40	27	2.15	Disagreed
9	Industrial linkages with technological training institutions is not relevant	0	18	10	21	51	1.95	Disagreed
10	Technology teachers need not belong to any professional body.	01	09	10	20	60	1.17	Disagreed

***Key**: **S.A**=Strongly Agree, **A=**Agree, **U.D=**Undecided, **D.A**=Disagree, **S.D**=Strongly Disagree, **M.S=Mean Score, RMK**=Remarks (**S=S**ignificance RII ≥ 2.50, **N. S**=Not Significance RII ≤ 2.50).*

The results in table 2 reveals that the respondents agreed on 5 of the items concerning professional training and retraining programme for Technology Teachers and disagreeing with 5 items.

Research Question 3

What are the chances of further training for technology teachers?

Table 3: Mean Responses on opportunities for further training for technology teachers.N=100

S/N	Items	SA	A	UD	D	SD	M.S	Remarks
1	Higher qualification has nothing to do with updating of relevant knowledge	22	25	03	22	28	2.41	Disagreed
2	You have not attended any further training and retraining programme for the past 10 years	38	37	0	20	05	3.83	Agreed
3	Further training and retraining is usually base on who you know(God father)	05	32	32	17	14	2.97	Agreed
4	There is no need for further training for technology teachers	01	0	01	22	76	1.28	Disagreed
5	You have knowledge of use of computer to accomplish engineering tasks	01	28	0	42	29	2.40	Disagreed
6	Further training and retraining usually organised is not related to my profession	41	27	20	08	04	3.93	Agreed
7	Further training and retraining should be encouraged for technology teachers	57	28	11	02	02	4.72	Agreed
8	Funds are usually not allocated by the authority for training and retraining of Teachers	03	48	30	12	07	3.28	Agreed
9	There is usually mass exodus of technology teachers who have attended training and retraining programmes	18	63	07	08	04	2.83	Agreed
10	Training and retraining of Technology Teachers has no correlation with skilled training	04	0	03	33	60	1.55	Disagreed

***Key**: **S.A**=Strongly Agree, **A=**Agree, **U.D=**Undecided, **D.A**=Disagree, **S.D**=Strongly Disagree, **M.S=Mean Score, RMK**=Remarks (**S=S**ignificance RII ≥ 2.50, **N. S**=Not Significance RII ≤ 2.50).*

Table 3 presents the results of the respondents on their ability to have adequately or inadequately utilizing the opportunities for further training. The respondents agreed with 5 of the items, items 1, 2, 3, 6, 7, 8 and 9 and disagreed with items 4, 5 and 10.

Discussion of Results

The results as revealed in table 1 shows that Technology Teachers don't attend Workshops, Seminars and Conferences regularly. This however, will affect their productivity in the dynamic technologymof the 21st Century. The findings also revealed that training being undertaken is by using obsolete machines, tools and equipment this will however, lead to producing technical graduates who will only add to the number of unemployed rather than be self-employed and be employers of others as provided in the National Policy of Education. This finding is in line with the opinion of Abdullah Asalleh (2024), says that most teachers have poor training background owing to the problems encountered during the training process. The results also shows that training and retraining programme is very necessary for Technology Teachers to abreast their knowledge as in item 6. This finding agreed with Eze Thecla Amogechukwu (2026) the main purpose of training and retraining of technology teachers is to improve their qualities, expertise, competence, efficiency, and effectiveness. Hanan abdulrab (2023) also holds the assertion that Technology Teachers need to be retrained atleast two to six times in lifetime to keep abreast with changes in the profession

The results in table 2 shows that Technology Teachers don't belong to professional bodies that organise Workshops, Seminars and Conferences as indicated in items 2, and 6 but Avenues for training and retraining Technology Teachers according to Eze Thecla Amogechukwu (2026) is through attending and participating in seminars, conferences and workshops. He further maintained that belonging to professional association enable the teachers meet with experienced colleagues to exchange ideas and talks about new happenings and developments (Innovations) in teaching.

The results in table 3 is associated with the need for technology teachers to update knowledge and obtained higher qualifications through attending of further training. The findings from the result revealed that Technology Teachers don't normally have the opportunity to go for further studies. Out of the 10 items. The respondents agreed with 7 that even though they saw the important of such, the training is normally base on who you know as pointed in tem 3. In view of this. Eze Thecla Amogechukwu (2026) opined that further training through part-time programme, Sandwich, and Full- time Study Leave with pay can enhance the ability and productivity of Technology Teachers. Finally, item 9 revealed that there is mass exodus of Technical Teachers who have the opportunity to have attended further training. This finding tallies with Hanan Abdulrab (2023) which asserted that Technical Teachers who received retraining programme never come back and even those that came back settled on greener pasture.

Recommendations

In view of the above findings the following recommendations are made:

1. Technology teachers should be given opportunity to attend atleast 2 - 6 months industrial training from time to time.
2. The Technical Teachers Training programme (TTTP) programme should be revitalizing and headed by experience senior Technology Teacher.
3. Technology Teachers industrial training institute should be established in every state and equipped with modern Machines/tools and equipment.
4. Government should ensure that only certified Technology Teachers who have attended the institute in addition to their teaching qualifications are qualified to teach Technical or Engineering courses.
5. Fresh graduate from Technical Schools should be allowed to go for a compulsory 1 year industrial attachment before proceeding for further studies.
6. Colleges, Polytechnics and Universities of technology should be well equipped with modern machines, tools and equipment.

Conclusion

For the nation to catch up with the global technological advancement, training and retraining of technology teachers should be given due attention in view of the dynamic technological society of the 21st Century. Current happenings can only be explored by constant training and retraining. It is by so doing that functional graduates are produced without which the society will remain stagnant. The need for training and retraining is important in order to develop innovative technical and vocational education TVE Teachers. Implementation of a coherent but flexible structure of technology teacher training programs at different levels based on the high technological demands will lead to production of competent manpower for technological institutions and the industries, institutional and industrial linkages should not be overemphasis because it will help overcome lack of current skills among technology teachers. Finally, there is the need for technology teachers to attend short-term or long term workshops, conferences and courses to update their skills and develop their ingenuity for better performance.

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