SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

ASSESSMENT OF TEACHER CHARACTERISTICS FOR THE IMPLEMENTATION OF MECHANICAL TECHNOLOGY CURRICULUM IN TECHNICAL COLLEGES IN NORTH-WEST NIGERIA

Dr. Ibrahim Ishaya Bature[1], Godwin Danjuma Amasa PhD[2]
[1]Department of Mechanical Production Technology Education, College of Technical and Vocational Education, Kaduna Polytechnic
[2]Department of Mechanical Production Technology Education, College of Technical and Vocational Education Kaduna Polytechnic

ABSTRACT
This study was to assess teachers characteristics for the implementation of mechanical technology curriculum in North-west Nigeria. To guide he study, three specific objectives, research questions and hypotheses were formulated. A comprehensive review of related literature was carried out to cover the three areas of teachers' characteristics. A survey research design was used for data gathering on a population of 2,228 respondents. The proportionate stratified random sampling technique was used to constitute a sample of 267 students. A structured survey instrument was developed according to the research questions that guided the study. The instrument was subjected to both validation and reliability test which yielded a reliability index of 0.86. The data was collected by the use of trained research assistants. The data collected were analyzed using the mean statistic. The hypotheses were analyzed using t-test at 95% confidence level. The result of the analysis show that the teachers exhibits good teacher characteristics during the delivery of instruction but need some degree of training. It was recommended that the government of Kano and Jigawa states should organize a comprehensive digital skills training for teachers of mechanical trades I technical schools, A standardize practical skill assessment format for each skill needs of the curriculum be developed by the experts chosen by the government of Kano and Jigawa states. These chosen experts are to develop and standardize the Assessment format and put it in book for professional references among others.
KEY WORDS: *Assessment, Teacher Characteristics, Mechanical Technology curriculum.*

INTRODUCTION

In a typical school setting such as the ones in Nigeria, teachers are supposed to be recruited based on teaching qualification and experience. Experience here means know-how of doing things. If a teacher possess certain qualification but do not have teaching experience, they cannot be effective (Bature, 2011)). An experienced teacher could be obtained after acquiring certain qualifications, as well as engaging in on-the-job training. still, in Kaduna technical teachers have distinguished characters. This means that the teachers have varying features and manner of behaving that distinguish between teacher A and teacher B. For example, teacher A may have positive manner of behaviour while, teacher B may have negative manner of behaviour. The teacher who behaves positively does effective work with good results. On the other hand, the negative behaved teacher does poor work without yielding good result.

Apparently, one of the technical trades taught in technical colleges in Nigeria is mechanical technology. The major aim of teaching this trade in the technical colleges is to equipped the youth with employable skills. The effective teaching of this trade according to experts Bature and Umar (2019), requires competent teachers for implementation. Teachers who exhibit good behaviour during instruction would no doubt go a long way to motivate the students to have interest in learning mechanical technology trade. A competent mechanical technology teacher is expected to explore the three teaching-learning domains; psychomotor, affective and cognitive during delivery of instruction to learners.

Professional educators generally agree that the "goodness" of an education programmes is determined to a large extent by the teaching. Therefore, teaching constitutes one of the most important of all educational concern. Obtaining capable teachers is an intrinsic interest and obligation of education. If competent teachers can be obtained, the likelihood of attaining desirable education outcomes is

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

substantial. On other hand, although schools may have excellent material resources in the form of equipment, buildings, and textbooks, and although curricula may be appropriately accepted to community requirement, if the teachers are misfits or are indifference to their responsibilities, the whole programmes will likely be ineffective and largely wasted, (Ogwo & Oranu, in Bature and Umar (2015). Behaviour here means the ways and manner a teacher impart knowledge and skills to learners.

True, as it may said that teaching is effective when the teacher acts in ways that is favourable to the development of basic skills, understanding, work habits, desirable attitudes, value, judgments, and adequate personal adjustment of the student (Ogwo & Oranu, 2006).

> Undoubtedly there have been both good and poor teachers since the beginning of man's social life (Fafunwa in Bature, 2011). Some of the really notable teachers have been memorialized by history and the number of competent teachers in the schools today probably is sizable. But, since usually very little is known about such teachers or what makes them effective, professional education had not been able to take advantage of an understanding of their characteristics and one modes of performance to the end of improving teacher training and teacher selection procedures.

An effective teacher may vary to a degree with the particular kind of teacher, one chooses to consider. One might hypothesize that, even if it were possible to agree upon a generalized definition of effective teaching which would be acceptable to a number of difference cultures, and if our thinking might be objectified to the point were effective teaching could be described on a factual basis, "good" teachers of difference grades and different subject matters still might vary considerably in personal and social characteristics and in various domain of classroom behaviours.

From the foregoing therefore, it is safer to assert here that, the lack of understanding of teachers characteristic, would no doubt have negative impact on the effectiveness of teachers in the workplace. Hence, the need of this present study which is primarily concerned to assess the behaviours of technical teachers for the implementation of mechanical technology programme in technical colleges of North-west Nigeria. .

STATEMENT OF THE PROBLEM

The teaching tasks of teachers are enormous, especially for those teachers in the post primary school. Teaching at this level of education is very complex. It demands a variety of human traits and abilities. The teacher has to possess adequate knowledge, mental abilities and skills, understanding of psychological and educational principles and knowledge of general and special subject matter to be taught are highly essential. The teacher has to be competent in all aspects of the teaching-learning process; ranging from teachers commitment to duties and responsibilities (Ogwo & Oranu, 2017).

Experts have observed of recent, that, teachers in the post primary school have varying experience and qualification. However, not all of those teachers have the teaching-learning pedagogies (Bature and Umar 2019). This will no doubt affects the performance of the student. Hence the essence of this present study is to assess the characteristics of teachers' behaviours in the classroom setting. This is where the teacher is expected to implement the goals of the teaching-learning process. Both the experience and inexperience teachers have to have the skills of teaching above those whom they teach (Bature, 2011).

The possession of the right knowledge, skills, attitudes and behaviour would go a long way to make the teacher very effective and learning so interesting. Thus, the concern of this present study is to give answers to the question; what are the characteristics of teachers in the classroom implementation of subject matter of technical colleges programmes and curriculum.

OBJECTIVE OF THE STUDY

The objective of this study was to assess the characteristics of mechanical technology teachers teaching in technical colleges in North-west Nigeria

Specifically, the ojective of this study is to:

1. assess the Teachers Personal Characteristics for the implimentation of Mechanical curriculum in technical colleges in North-west Nigeria.
2. assess the Teachers pedagogical Characteristics for the implimentation of Mechanical curriculum in technical colleges in North-west Nigeria.
3. assess the Teachers Practical Skills Characteristics for the implimentation of Mechanical curriculum in technical colleges in North-west Nigeria.

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

RESEARCH QUESTIONS

1 What are the Teachers Personal Characteristics for the implementation of Mechanical curriculum in technical colleges in North-west Nigeria?
2 What are the Teachers pedagogical Characteristics for the implementation of Mechanical curriculum in technical colleges in North-west Nigeria?
3 What are the Teachers Practical Skills Characteristics for the implementation of Mechanical curriculum in technical colleges in North-west Nigeria?

HYPOTHESES

Ho 1. There is no significant difference in the mean responses of students on the Teacher Personal Characteristics in kano and Jigawa states on the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria
Ho 2. There is no significant difference in the mean responses of students on the Teacher pedagogical Characteristics in kano and Jigawa states on the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria
Ho 3. There is no significant difference in the mean responses of students on the Teacher Practical Skills Characteristics in kano and Jigawa states on the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria

REVIEW OF RELATED LITERATURE

In this chapter works related to the present study were reviewed the following areas were discussed: Conceptual Framework of the Study; Theoretical Framework of the Study; Teachers' Characteristics; Teacher Personal Characteristics; Teacher Pedagogical Characteristics; Teacher Practical Characteristics; Empirical Related Studies on Teacher Characteristics Assessment; Summary of Literature Review.

Conceptual Framework of the Study

The teacher's character and behavior are essential ingredients for the discharge of his/her responsibilities in the teaching-learning business. Bature (2012) stated that by character we mean the feature that makes a person. He further stated that behavior on the other hand, could mean the manner of behaving whether good or bad. This implies that, a teacher may have good or bad behavior. As a teacher he/she must possess desirable character and behavior. A good teacher as (Bature, 2012) suggested, should possess the following among others: Mastery of subject, Ability to teach, Use of variety of teaching methods and techniques, Interest in student activity, Pleasing personality, Friendliness, Stability and Punctuality.

Experts (Ogwo and Oranu, 2006) stated that a good teacher should possess the following qualities among others: Displaying fairness, Having a positive outlook, Being prepared, Using a personal touch, Possessing a sense of humour, Possessing creativity, Admitting mistakes, Being forgiving, Maintaining high expectations, Showing compassion and Developing sense of belonging for students.

Furthermore, as teachers' and or educators there is need for you to be adaptable or flexible. The teacher should have the ability to understand what another person is feeling or experiencing. Another character of the teacher is the ability to be patience. Having a reserve of patience will make it easier for you to work through each students unique struggles and challenges, which may be difficult or slow-going to overcome. Some others characteristic of teachers may include the following: Ability to engage students in class activities, Ability to be an active listener, Being interested in students learning activities, Not being bias to students teaching and learning activities, Ability to exhibit respectful attitude, Ability to be creative, Ability to collaborate and work with others consistently, Ability to prepared oneself well for classroom interaction, Ability to promote student mindset.

Theoretical Framework of the Study

The term 'teacher' or 'teachers' embrace all those persons in schools who are responsible for the education of pupils or students (Zango,Kwalli and Danlami, 2010). Teaches are responsible for carrying our teaching. Teaching means a social process involving communication and interaction between the teacher and students with the aim of improving the standing of the students in the cognitive, affective and psychomotor domain areas of learning. The teacher gives directions, asks questions and accepts or rejects responses (Zango, and et al., 2010). Educators such as (Ogwo and Oranu, 2006) stated that teachers are one of the most important school-based resources in determining students' future academic success and lifetime outcomes.

The behavior of the teacher in the classroom setting, has implication for the teaching-learning process. The teacher is often the central focus. As such, there is need for the teacher to be well behaved while been in the classroom and or outside it. The teacher character or

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

behavior may be defined simply as the behavior or activities, of persons as they go about doing whatever is required of teachers, particularly those activities which are concerned with the guidance or direction of learning of others. The implication of this definition could be in two dimensions such that the teacher behavior could be social that is, there are always learners, or pupils, who are in communication with the teacher and with each other, and or who are presumably are influenced by the behavior of the teacher. Another implication of the definition of teacher behavior is what a teacher does is a product of social conditioning and is relative to the cultural setting in which the teacher teaches. It follows that there is nothing inherently good or bad in any given teacher behavior or set of behaviors. There are often two major assumptions of a theory of teacher behavior:

1. Teacher behavior is a function of situational factors and characteristics of the individual teachers
2. Teacher behavior is observable.

Teachers' Characteristics

The success of the individual teacher in class has influence on the quality of education that children will eventually receive. Teachers are the link between the curriculum and students', and they bear ultimate responsibility for implementing programmes. Since teachers have more intimate relationship with students than any others member of the school community, they are more likely to have greater influence on the character and habits of students. To become successful, teachers must accept the challenges to acquire the right skills in the use of tools, instruments and machines; they must develop new conception of methods of teaching technical/vocational subjects; and they must develop strategies for managing technical equipment and materials. Teachers must understand that their students are constantly assessing them; as a good teacher, he/she must have mastery of subject, have the ability to teach, use variety of teaching methods and techniques. The teacher must also have interest in student activity. Being punctual and stable in whatever he/she does in the classroom instruction. The teacher must be friendly with the learners. And above all, the teacher must be sympathetic to student problems.

Teacher Personal Characteristics

Whether they're teaching advanced students or non-advanced teachers generally share certain universal traits in common. According to experts Ogwo & Oranu (2006) stated teachers' most important traits to include the following: Adaptability, Empathy, Patience, Engagement, Active listening, Lifelong learning, Free of bias, Respectful attitude, Collaborative, Preparation, Promote a growth mindset, Meet students where they are and Cross-discipline teaching.

Good teachers come in variety of sizes, shapes, colors, genders, and backgrounds. According to Zango, Sani, and Danlami (2010) they stated the common traits for professional characteristics of good teachers are as follows: Emotional and mental stability, Are unsatisfied, Knowledgeable at the subject, The ability to teach and explain the lesson in a different way, Wider and deeper views, Clear objective, Objectivity and fairness, Positive attitude, Know their students, Great expectations, Dedication to excellence, Never has enough time, Think of teaching as a form of parenting, Discipline, True compassion for their students, Create independence, Unwavering support, Willingness to help student achieve, Honour, Pride in student's accomplishments, Take risks, Students' evaluations, Share their experience with other teachers Insightful, Listen to their students and Persevere and passion for work and life.

On the whole, to become a good teacher you must employ certain attitudes, be flexible, be accommodative, be willing to change for better. As a good teacher he/she should adhered to the following advices: Have a sense of purpose, Be curious, humble, honest, accurate and open-mindedness, Have expectations of success for all students, Have ability to relate concepts to students immediate environment, Have command over subject, Know how to live with ambiguity, Adapt and change to meet student needs, Be reflective, Question authority and avoid dogmatism, Be agile for pursuance of better teaching-learning standards, Be comfortable, Have positive attitude to failure and Enjoy your work and students.

Teacher Pedagogical Characteristics

Teachers pedagogical characteristics are: Have knowledge of the subject matter, Have the ability to use variety of teaching methods, Know when students have learnt and understand knowledge content of subject matter as stipulated in the curriculum, Know how to carry every student along during teaching-learning sections, Have knowledge of the teaching-learning environments, Have knowledge of the teaching-learning needs of students, and guide them appropriately, Know how to instill discipline in the mind of students and Show love and be kind to all students.

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

The Characteristics of Teachers as it Relate to Teaching of Practical Skills

The Characteristics of Teachers as it Relate to Teaching of Practical Skills are: Have knowledge of practical skills, Ability to translate theories into practical session, Ability to demonstrate practical skills session, Ability to explain practical skill of terminologies, Ability to explain the working of machines, equipment and tools, Ability to engage students apply their knowledge in shop practices, Ability to give instruction during shop practices, Ability to evaluate students' performance in shop practices, Ability to arouse students' interest in shop practical session, Ability to summarize a shop practical sessions, Ability to install, operate and maintain equipment, machines and tools in the shop and Ability to give safety tips during shop practical sessions.

Empirical Studies on Teacher's Characteristics Assessment

There are not many studies conducted of recent on teacher's characteristic in the implementation of Mechanical Technology Curriculum Content at the classroom and or workshop sessions. As such, this present study is in an attempt to bridge the gap therein.

Enwelim (2016) conducted a study on teacher characteristics and students achievement in social studies in Nigeria. The study was aimed at, to determine if there was relationship between certain teachers characteristic and students achievement in social studies. It was found that teacher characteristics have relationship with students achievement. The study recommended that teachers should diversify teaching strategies that will suit individual learners in the learning process.

Omotayo (2014) investigated the relationship between teachers characteristics and students' performance level in senior secondary school Financial Accounting. The findings of the study revealed that a positive relationship exists between teachers characteristics and performance level of the students in Financial Accounting. The study in a way of conclusion, recommended among others that capacity development scheme should be put in place for teachers with the aim of enhancing their efficiency and improving students performance. Bature (2012) evaluated the mechanical technology programme of technical colleges in Kaduna state. One of the objectives of the study was to find out the characteristics of teachers in the implementation of the curriculum content in the classroom setting. The findings of the study revealed that the characteristics of the teachers were adjudged to be good. Thus, it was recommended that the teachers should be encouraged to continue to be of good character both in the classroom and outside it.

From the foregoing, it seems none of these studies focuses on the assessment of the characteristics of teachers in the implementation of mechanical technology curriculum content in the classroom session. The lack of appraisal of the teacher characters would bring a setback on teachers' effectiveness and students performance. Hence the need for this study to be embarked upon, as it would help teachers know their areas of strength and weaknesses. Since teachers character exhibiting in teaching-learning session is very vital and crucial. The teacher should not hesitate therefore, to be of good behavior throughout his/her teaching career.

Summary of Literature Review

The literature reviewed defined concepts and theories in relation to the rationale for this study. It was discovered in literature that, teachers should be of good behaviors in order to stimulate effective teaching-learning process in the classroom and or workshop practice sessions respectively. It was noted that teachers have varying manner of behavioural approaches in the implementation of curriculum content of any subject matter. Effective teachers yield positive results. Furthermore, the literature revealed that there are no recent empirical studies conducted to assess the effective teacher's characteristics in the implementation of the curriculum content of mechanical technology programme of technical colleges in the North-west Nigeria. Therefore, it is imperative to assess the teacher's characteristics in order to ascertain input and output in recent times. This will of course stimulate the teachers to identify their areas of strength and weaknesses.

METHODOLOGY

Research Design

Descriptive survey research design was used for this study. Survey was used to obtain data from the students of mechanical technology from two technical colleges in North-west Nigeria. The selection was due to the large number of students and over two decades of establishment. Survey was used because opinion of respondents is going to be sought.

Survey questionnaire was developed by the researchers through literature review to cover the three research objectives that guided this study. The study was conducted in North-west, Nigeria. The population for this study constituted 2,228 students of mechanical technology trade in two accredited technical colleges in Northern Nigeria. The proportionate stratified random sampling techniques was used to draw a sample size of 267 respondents. Three experts from the Department of Mechanical and Production Technology Education

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

Kaduna Polytechnic will validate the instrument. Reliability of the instrument was determined through pilot study with data collected by test - retest the use of Cronbach Alpha (α) reliability test yielded 8.06 coefficient. The analysis of data for this study will be done using mean on a five point Likert scale. Thus any item with a mean value or greater than 3.00 was accepted otherwise rejected. The hypotheses were analysed using t-test at 95% confidence level.

Method of Data Collection

The instrument for the study will be administered by the researchers and six trained research assistants to the respondents to observe and put a check mark on the appropriate column to indicate their observation on the indices itemized on the instrument

Method of Data Analysis

The analysis of data will involve the use of frequency tables and mean. The Hypotheses were analyzed using the t-test at 95% confidence level.

Result

The analysis of data was done based on the objectives and research questions that guided the study.

Research Question 1

What are the Teacher Personal Characteristics for the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria?

The analysis to research question 1 as presented in Table 1

Table 1: Teacher Personal Characteristics for the implementation of mechanical technology programme curriculum.

S/N	ITEM	X1	X2	X	REMARK
	The teacher Personal Characteristics for the implementation of mechanical technology programme curriculum in Technical Colleges are:				
1	Sincerity	3.54	3.38	3.46	Agree
2	Smiling	3.28	3.28	3.28	Agree
3	Discipline	3.22	3.25	3.34	Agree
4	Humorous	3.03	3.05	3.04	Agree
5	Enthusiastic	3.15	3.20	3.18	Agree
6	Always Social	3.17	3.07	3.12	Agree
7	Always Neat	3.29	3.18	3.24	Agree
8	Very Courageous	3.31	3.10	3.21	Agree
9	Very Unique	3.26	3.13	3.21	Agree
10	Not Selfish	3.26	3.15	3.22	Agree
11	Have Patience	3.17	3.12	3.11	Agree

Grand Mean = 3.22

Table1 show that all the items (1-11) were responded to as agree to be the personal characteristics of the teachers for the implementation of the curriculum of the mechanical technology subject in Technical colleges in North-west political zone, Nigeria. The grand mean further buttress the fact that all the items in the table were the personal characteristics of the teachers.

Research Question 2

What are the Teacher Pedagogical Characteristics for the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria?

The analysis to research question 2 as presented in Table 2

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

Table 2: Teacher Pedagogical Characteristics for the implementation of mechanical technology programme curriculum

S/N	ITEM	X1	X2	X	REMARK
	The teacher Pedagogical Characteristics for the implementation of mechanical technology programme curriculum in Technical Colleges are:				
12	Likes Teaching	3.14	3.30	3.22	Agree
13	Prepares His Lessons Very Well	3.28	3.37	3.33	Agree
14	Knows His Subject Well	3.38	3.37	3.38	Agree
15	Improvise During Teaching	3.23	3.32	3.28	Agree
16	Good Communication Skills	3.25	3.33	3.29	Agree
17	The use of Technical Terms in Communication	3.32	3.30	3.31	Agree
18	Listen to Students Well	3.12	3.25	3.19	Agree
19	Understands Individual Differences	3.09	3.17	3.13	Agree
20	Allow Students to ask Questions	3.11	3.20	3.16	Agree
21	Ask Students Questions	3.02	3.20	3.11	Agree
22	Encourages Class Discussion	2.89	3.07	2.95	Agree
23	Show Interest in all Students	2.98	3.17	3.08	Agree
24	Fair Teaching to all Students	3.05	3.08	3.07	Agree
25	Encourages Team Work	2.83	3.07	2.95	Agree
26	Lessons are Centered on the Students	2.98	3.02	3.00	Agree
27	Constant Performance Assessment	2.88	2.97	2.93	Agree
28	Creativity	3.06	3.07	3.07	Agree
29	Respect Students Views	3.05	3.10	3.08	Agree
30	Gives Students Assessments	3.00	3.10	3.05	Agree
	Grand Mean =			**3.16**	

Table2 show that all the items (12-30) were responded to as agree to be the pedagogical characteristics of the teachers for the implementation of the curriculum of the mechanical technology subject in Technical colleges in North-west political zone, Nigeria. The grand mean further highlighted the fact that all the items in the table were the pedagogical characteristics of the teachers.

Research Question 3

What are the Teacher Practical Characteristics for the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria?

The analysis to research question 3 as presented in Table 3

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

Table 3: Teacher Practical Characteristics for the implementation of mechanical technology programme curriculum

S/N		X1	X2	X	REMARK
	The Teacher Practical Characteristics for the Implementation of mechanical technology programme curriculum in technical colleges are:				
31	Observance of Safety Rules	3.02	3.03	3.01	Agree
32	Knowledge of Machine Operations Skills	2.91	2.93	2.92	Agree
33	Guidance of Students on Machine Operations Skills	2.77	2.85	2.64	Agree
34	Knowledge of Digital Skills	2.12	2.08	2.10	Disagree
35	Knowledge of Maintenance Operation Skills	2.52	2.53	2.53	Agree
36	Attendance to Individual Students During Workshop Practice	2.60	2.47	2.54	Agree
37	Encourage Individual Workshop Practical Participation	2.55	2.47	2.51	Agree
38	Assess Students During Workshop Practice	2.48	2.40	2.44	Disagree
39	Always Present During Students Workshop Practice	2.43	2.42	2.43	Disagree
40	Ensuring Students use Correct Procedure for each Workshop Practice	2.42	2.38	2.40	Disagree
41	Ensuring Students use Correct Instrument for each Skilltask	2.40	2.32	2.36	Disagree
				Grand Mean = 2.53	

Table 3 shows that the students agree with items 31, 32, 33, 35, 36 and 37. While the students show disagreement with items 34, 38, 39, 40 and 41. The grand mean of 2.53 indicated that that majority of the items in the table were agreed with as the practical characteristics of the teachers for the implementation of mechanical technology curriculum in technical colleges in the North-west zone, Nigeria.

Hypothesis 1

There is no significant difference in the mean responses of students on the Teacher Personal Characteristics in kano and Jigawa states on the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria

The analysis of data to Hypothesis 1 is presented in Table 4

Table 4: t-test for Equality of Means

		t-test for Equality of Means								
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Responses	Equal variances assumed	.316	.578	-2.105	36	.042	-.09474	.04500	-.18601	-.00346
	Equal variances not assumed			-2.105	34.640	.043	-.09474	.04500	-.18613	-.00334

The t-test show that there is no significant difference in the mean response of teachers in Kano and Jigawa states regarding their Personal Characteristics for the implementation of mechanical technology programme curriculum in Technical Colleges.

Hypothesis 2

There is no significant difference in the mean responses of students on the Teacher pedagogical Characteristics in kano and Jigawa states on the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria

The data analysis to hypothesis 2 is presented in table 5

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

Table 5: t-test for Equality of Means
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Responses	Equal variances assumed	.316	.578	-2.105	36	.042	-.09474	.04500	-.18601	-.00346
	Equal variances not assumed			-2.105	34.640	.043	-.09474	.04500	-.18613	-.00334

The t-test show that there is no significant difference in the mean response of teachers in Kano and Jigawa states regarding their pedagogical characteristics for the implementation of mechanical technology programme curriculum in Technical Colleges in North - west zone Nigeria.

Hypothesis 3

There is no significant difference in the mean responses of students on the Teacher Practical Skills Characteristics in kano and Jigawa states on the implementation of mechanical technology programme curriculum in technical colleges in North-west Nigeria

The data analysis to hypothesis 3 is presented in Table 6

Table 6: t-test for Equality of Means
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Responses	Equal variances assumed	.191	.667	.268	20	.791	.03091	.11524	-.20947	.27129
	Equal variances not assumed			.268	19.720	.791	.03091	.11524	-.20969	.27151

The t-test show that there is no significant difference in the mean response of teachers in Kano and Jigawa states regarding teachers skills Characteristics for the implementation of mechanical technology programme curriculum in Technical Colleges.

DISCUSSION OF FINDINGS

The students agreed that the teachers were to show all personal characteristics, all pedagogical characteristics and most practical skills characteristics as part of their duties to ensure adequate learning and skill acquisition has taken place among the students in Kano and Jigawa states. This is in line with the assertion made by Zango, Kwalli and Danlami, 2010 that teaches are responsible for carrying our teaching which means that teaching as a social process involves communication and interaction between the teacher and students with the aim of improving the standing of the students in the cognitive, affective and psychomotor domain areas of learning. The teacher gives directions, asks questions and accepts or rejects responses. Other educators such as Ogwo and Oranu, 2006 stated that teachers are one of the most important school-based resources in determining students' future academic success and lifetime outcomes.

It has become pertinent that teachers are to be masters to shape the total life of the students to become useful to themselves and to the society at large. It is also evident in all the three hypotheses that there is no significant difference in the responses of the students in both Kano and Jigawa states regarding techers characteristics in delivering instructions in mechanical trades.

CONCLUSION

Teacher characteristics is the basics for any teacher trained to change or shape the whole-being of students. Teachers are the link between the curriculum and students', and they bear ultimate responsibility for implementing programmes. Since teachers have more intimate relationship with students than any others member of the school community, they are more likely to have greater influence on the

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 2 | February 2025 - Peer Reviewed Journal

character and habits of students. The result of this study show that students assessment on their teachers is encouaging since the teachers exhibit most of the characteristics needed for teaching mechanical trades in technical colleges. That means the students graduate with the right attitudes and skills to copewith the world of work.

Recommendations

Based on the result of this study the following recommendations were made:

1 The government of Kano and Jigawa states should organize a comprehensive digital skills training for teachers of mechanical trades I techmical schools.
2 A standardize practical skill assessment format for each skill needs of the curiculum be developed by the experts chosen by the government of Kano and Jigawa states. These chosen experts are to develop and standadize the Assessment format and put it in book for professional references.
3 Technical school management should ensure that teachers are carefully monitored to be present in the workshop during practical skills instructions.
4 Teachers are to ensure that students follow each sequence of practical skill operation adequately.
5 Teachers are to ensure students select exact tools and equipment correctly during skills pectice.

REFERENCES

1 *Bature, I.I. (2012) Evaluation of the Mechanical Technology Programme of Technical Colleges in Kaduna State, Nigeria Academic Discourse: An International Journal Vol.2 No.1.*
2 *Enwelin, S.C. (2016) Teacher Characteristics as correlates of students Achievement in social studies: A case study in Nigeria. Journal of Education and Practice Vol.7 No.28.*
3 *Ogwo, B.A. & Oranu, R.N. (2006) Methodology in formal and non-formal technical/vocational education. Enugu University of Nigeria Press Ltd.*
4 *Omotayo, B.K. (2014) Teacher characteristics and student performance level in senior secondary school financial accounting, Journal of Empirical Studies Vol.1 No.2.*
5 *Somani, G. (2022). Elements of pedagogical content posted by aid Academic Consultant in Master soft – Ict solutions, Aligned with NEP 2020.*
6 *Teaching practical skills: Retrived from Scoutadventunes.org.uk0208181315/ 20 August, 2024.*
7 *Zango, H.U. Kwale, S.M. and Danami, A (2010). The characteristics of a good teacher and how to become one. Chem Search Journal 1(1):48-51.*