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Qualities Requirement forTeachers of Metal Works Technologyfor Efficient ServicesDelivery for Global Competitiveness

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ABSTRACT*: The study assessed qualities required of Metal Works Technology teachersfor efficient services delivery for global competitiveness in Rivers State.Population of the study consists of16 VTE doctorate degree Students of Rivers State University, Port Harcourt and 19VTE doctorate degree Students of Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt. No sampling was taken considering the small s population. Self-structured instrument was designed to elicit information from the respondents. Te method was used to determine the Reliability Co-efficient of the instrument where the results were correlated using Pearson Product Moment coefficient to determine the reliability coefficient which yielded a value of 0.86. The findings revealed that teachers who are regular and punctual to classes, teach according to set objectives, posse qualified academic credentials, grounded in method and procedure relevant to build capacity and among others. Findings further include the use of appropriate instructional materials regularly during teaching, display of relevant instructional materials to the view of the students among others. Based on the findings, recommendations were made that; government should ensure only qualified metal works technology teachers are given employment opportunities to teach in technical college. The multinational oil industries should make available technical tools, equipment and other valuable instructional materials to technical colleges with a view to enhance efficiency service delivery by the teachers.*

Keywords: *Qualities, Efficient services, Metal work Technology, Global Competitiveness*

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I. INTRODUCTION

Technical college is an institution specialized in practical training of youths in various trades. Technical colleges are post-basic level institution for training of craftsmen and master craftsmen. The technical college courses lead to the award of the National Technical Certificate and Advanced National Technical Certificate (ANTC) for technical courses and the National Business Certificate (NBC) and Advanced National Business Certificate (ANBC) for business studies (Kazaune, 2018). The technicalcolleges play vital roles in the development of capacities in Nigeria. This confirmed Daujuma and Umaru (2019) assertion that technical college education regards the development of cognitive, psychomotor and affective domains as an essential requirement for progress is the world.Such institutions train and produce technicians for industries, impact vital technical skills in the youths, and help toward realizing the goal of self-employment and job creation. Though in the technical colleges, youths acquire skills and became skilled technicians in the area of woodwork, auto-mechanic bricklaying and concreting,mechanical craft, laboratory, pharmacists, electrical installation and maintenance works and metalwork technology among others (Yaro & Harunna, 2018)

Metalwork Technology is one of the major areas of vocational/technical education taught in technical colleges in Rivers State. Danjuma and Umaru (2019) stated that MetalWorks Technology is the activity of making objects/ particles out of metals. Metal works is generally called Metalwork Technology because it involves modern ways of making metal products using different tools, equipment and machines.Ombugus(2013) opined that the aim of Metal Work technology curricular at the technical college level is to teach the learner how to practice the trade independently upon graduation. Maigida (2013) defined metal work technology as the study of all aspects of metalworking such as bench,sheet, art metal, jewelry metal finishing forging,casting ,machines, heat treating, material testing, welding and other fasting methods in metal manufacturing. In this context, metal work technology involves the study where metals are redesign and reconstructed for modern objects used at home and the industries. Eze(2011) stated that the metal work craftsmen are involved among others in the following operations: manipulating complex tools and equipment; determination and selection of appropriate metals; determination and commitment to obeying safety rules guiding the complex machines they

are working out. It is only with dedicated skilled workforce (teachers) that materials can be harnessed and transformed into products development with the aid of Metal Work Technology teachers.

Metal Work Technology teachers are teachers who studied and specialized on metal work technology disciplines in higher institution.Scott (2013) explained that sustainable technical skills in metal work technology programme in technical colleges will involve the renewal of individual skills, labour market skills requirement and the transformation of the world of work through the improved performance of Metal work technology teachers. Akpan (2014) asserted that Metal Work Technology teachers make use of instructional materials to demonstrate skills to students in various courses, hence thoroughly carry out checks on equipment, machines and tools to ascertain their functionality through periodically assessment. In this light, technical college requires competentteachersthat would use instructional materials to deliver quality instructions to the students with the view to produce graduates who will be versatile in performing works in the industry or be self-enterprisestowards attaining global competitiveness. This will be achieved through the frantic efforts of the Metal Work Technology teachersthat will be often subject to regular assessment.

Assessment is used primarily to describe processes of evaluating the effectiveness of sequence of instructional activities when the sequence is completed. Georgious in Ajagbe and Udoy (2018) opined that assessment is the general term which includes all the methods used to gather information about children's knowledge, ability, understanding, attitude and motivation. Wikipedia (2019) described assessment as the systematic process of documenting and using empirical data on the knowledge, skill, attitude and beliefs to refine programs and improve teachers teaching performance and encourage student learning performance. In this context, assessment evaluates quality of teacher suitable to teach and manage Metal Works Technology trade in technical colleges for improve productivity capable for global competitiveness.The improve productivityand global competitiveness required quality teacher participation to drive theprocess, teach courses and manage programmes of the college.

Quality teachers are often seen simply as good teachers and are considered to be those who exhibit desirable traits and uphold the standards and norms of the profession(Kerene,2018). The teacher is a very vital and valuable element in school, in education and policy formulation and implementation as well as among other educational stakeholder(Beako & Wichendu,2017). The teacher effectively facilitates the learning in such a way that demonstrates a sound knowledge of the subject matter in a manner which is appliedto the diverse needs of learners.He employs various principles, strategies and resources appropriate for teaching. The teacher understands and interprets all learning programmes and materials as well as identifies requirement for specific content of learning and prepares suitable instructional resources for learning. The teacher should be grounded in knowledge, skills, values, principles, methods and procedure relevant to building capacity of students in theirlearning area of practice.Igweh (2014) stated that for Nigeria to achieve the Millenium Development Goals (MDGs) capacity building of students through adequate skill acquisition in various fields of study especially in Vocational Technical Education. Azikiwe (2012) defined capacity building as a process by which individuals, irrespective of sex are equipped with skills and knowledge they need to perform effectively and efficiently in their different trades. This effective performance in these trade snowballed to revitalize the nation's economy and encourage global competitiveness

Global competitiveness isto be more successful than other people in performing specific work in the whole world. Oxford defined global competitiveness as to try very hard to be better than other in the globe. In this context, global competitiveness refer to the determination of teachers in metal work technology to be competent in delivering better and efficient services to the students with the aims to be better than others and as well compete favourably with their counterparts in other part of the world. Global competitiveness is achieved through the services of quality teachers impacting requisite skills to the learner in a conducive learning environment.Beako and Wichendu (2017) stated that global competitiveness is a process by which personnel are trained and determined to be more competent and successful in carrying out duties more than others. Trends in the productive and service sectors suggest that both basic, portable skills and competencies will be globally competitive and sustainable in the long term for job shifts and technological changes through the capability of staff employed to teach in the technical college. Global competitiveness is achieved through teachers and instructors capable inimpacting necessary skills needed for the building capacities and competencies of the learners for socio-economic growth and sustainable development of such nation (Okwelle, Beako& Ajie, 2017). Thepotentials will be realized through sustainable skills acquired with the aid of teachers employed by the college towards delivering and impactingefficient services.

Efficient services are the degree to which a provided activity promotes customer satisfaction. Efficient service is an area of study that has developed to define and describe how services can be delivered in such a manner as to satisfy the recipient (America Marketing Association, 2012). Efficient servicein its contemporary conceptualization isa comparison ofperceived expectation of a service with perceived performance (Wikipedia, 2019).In this study, efficient service refers to an assessment of how well a service of Metal Work Technology teachers conform to the student's expectations in line with National Board of Technical Education (NBTE)

guidelines. The NBTE often assess the service quality provided to the students in order to improve the service, to quickly identify problems and to better assess student satisfaction. Hence, Metal Work Technology teachersare expected to deliver efficient services aimed at improving technical skills needed for teaching the students towardsupgrading knowledge with the view to redesign and reconstruct metals for structural objects used in our locality and equally be familiar with modern tools and equipment in metal work construction industries for global competitiveness.In the light of this background, the study undertaken to ascertain qualities required of Metal Work Technology teachers for efficient services delivery for global competitivenesswas investigated.

II. STATEMENT OF THE PROBLEM

Metalwork technology programmme as an entrepreneurial based and skill oriented field of study that is expected to equip learners with saleable skills that make for self-reliance and paid employment (Ugbalu, 2015). However, Mustapha and Taala (2014) revealed that substandard instructional materials used in delivering teaching had contributed in lowering down the values of metalwork technology graduates in performing upright after graduation. They further explained that the qualities of teachers and servicesrendered are no longer suitable to produceglobal competitiveness and rapid technological changes in the educational sector. If this trend continues, the academic performance of metal works technology students will dropcontrary to global standardsand the aims of establishing technical college will be defeated. It is in light of this background, the study qualities requirement forMetal Work Technology teachers for efficient services delivery for global competitiveness in Rivers State was carried out.

Purpose of the Study

The mainpurpose of the study is qualities requirement for Metal Work Technology teachers for efficient services delivery for global competitiveness in Rivers State. Specifically, the study sought to:

1. determinethe qualities of teachersrequired inteaching Metal Works Technologyin Rivers Statefor global competitiveness.
2. determine the effective ways of teachers handling instructional materials in Rivers State for global competitiveness.

Research Questions

The following research questions were posed to guide the study.

1. What arethe qualities of teachers requiredin teaching Metal Work Technology in Rivers Statefor globalcompetitiveness?
2. What are the effective ways required of Metal WorksTechnology teachers in handling instructional materials in teaching Metal Works Technology in Rivers State for global competitiveness?

Hypotheses

The following null hypotheses (H0) were formulated to guide the study and were tested at 0.05 level of significance.

1. There is no significant difference in the mean response ofDoctorate Degree Students of Department of Vocational and Technology Education, RSUand Doctorate Degree students of Department of Industrial Education (IAUOE) on the qualities of Metal Work Technology teachersrequired in teaching metal works technology courses in Rivers State for globalcompetitiveness.

2. There is no significant difference in the mean responses ofDoctorate Degree Students of Department of Vocational and Technology Education, RSU andDoctorate Degree students of Department of Industrial Education(IAUOE) on the effective ways of Metal Work Technology teachers in handling instructional materials in Rivers State for global competitiveness.

III. METHODS

The study adopted descriptive survey design. The population of the study is 36. It comprised 16Postgraduate students (Ph.D) of theDepartment of Vocational and Technology Education, Rivers State University, Port Harcourt and 20Postgraduate students (Ph.D) of the Department ofIndustrial Education, Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt. No sampling was taken considering manageable size of the population.The instrument titled "Qualities Requirement forMetal works Technology Teachers in Technical College for Global Competitiveness (QMWTTTCGC) was developed for the study. The instrument was constructed and patterned on five point Likert rating scale of Strongly Required (SR), Required (R), Not Required (NR), Slightly Required (SR) and Low Required (LR) with numerical values of 5, 4, 3, 2 and 1 respectively. Copies of the instrument were given to three experts. Two in the Department of Vocational and Technology Education, Rivers State University, Port Harcourt one from the Department of Vocational

Education, University of Education, Port Harcourt for face validity. These experts vetted the instrument in terms of appropriateness, relevance and language level. Relevant observations made were incorporated into the work.Test-retest method was used to determine the reliability of the instrument. Cluster sampling techniques was used to draw5 VTE Ph.D Students from Niger Delta University, Wilberforce, Balyelsa State which are not part of the population. The instrument was administered, retrieved and analzsed. Within an interval of three weeks, the same instrument was administered, retrieved and analysed. The results were correlated using Pearson Product Moment to determine the reliability coefficient of the entire instrument which yielded 0.86. The instrument was administered to the respondents alongside with two assistants who were trained by the researchers. Thirty six copies of the questionnaire was printed and distributed. However, thirty five copies which represent 97.2 percent were retrieved and used for the study. The research questions were analyzed using mean and standard deviation. Any item with a mean value equal to or greater than 3.50 was accepted while item with mean value less than 3.50 was rejected. The hypotheses were tested at 0.05 level of significance with Z-test statistical tool. if the value of Z-calculated is less than the value of Z-critical, the hypothesis was accepted. While if the value of the Z-calculated is greater than or equal to the value of the Z-critical, the hypothesis was rejected

IV. RESULTS

Table 1 Mean and Standard Deviation on theQualitiesofTeachers Required of Metalwork Technology for Global Competitiveness

S/N	Qualities of Teachers Suitable for Global Competitiveness	Ph.D Students(RSU)			Ph.D Students(IAUOE)		
		Mean	S.D	Remark	Mean	S.D	Remark
1	Teachers who are regular and punctual to class.	3.54	1.23	Required	3.88	1.09	Required
2	Teacherswho teach according to set standards.	3.76	1.09	Required	3.73	1.14	Required
3	Teachers with qualified academic credentials.	3.51	1.30	Required	3.64	1.26	Required
4	Teachers who will apply safety to operate machines.	3.79	1.15	Required	3.76	1.15	Required
5	Teachers who will use instructional materials to teach.	3.83	1.16	Required	3.90	1.02	Required
6	Teachers who are principled and experienced in teaching.	3.55	1.22	Required	3.98	.96	Required
7	Teachers who motivate the learner on training.	3.50	1.31	Required	3.77	1.15	Required
8	Teachers who have value andwill carry out regular research on contemporary issues.	3.98	.96	Required	3.89	1.06	Required
9	Teachers who have practical knowledge and skills.	3.80	1.12	Required	3.74	1.13	Required
10	Teachers who are grounded in method and procedure relevant to build capacity	3.85	1.17	Required	3.91	1.00	Required
Grand Means/S.D		**3.71**	**1.17**		**3.82**	**1.10**	

No. of Vocational and Technical Education (VTE)Ph.D Students (RSU) =16
No. of Industrial Education (IE) Ph.DStudents (IAUOE)=19

The data on table 1 displays the mean values ranging from 3.11 to 3.40 which are all above the cut-off point of 3.50. This shows that the 10 item are accepted as qualities of teachers requiredin metal work technology trades in Rivers State for global competitiveness. The table equally shows that the standard deviation ranges from 0.96 to 1.31, and indicates that the mean values are not far from each other.

Table 2 Mean and Standard Deviation on Effective Ways of Handling Instructional Materials for Global Competitiveness

S/N	Effective Ways of Handling Instructional Materials	Ph.D Students(RSU)			Ph.D Students(IAUOE)		
11	Use.instructional materials regularly during teaching	3.99	.96	Required	3.77	1.20	Required
12	Display instructional materials to the students	3.97	.98	Required	3.98	.92	Required
13	Ensure students are groupedwith each group taught separately.	3.83	1.08	Required	3.89	.98	Required
14	All instructional materials should be kept clean after each class.	3.77	1.12	Required	3.87	1.03	Required
15	Ensure the students master each material used.	3.72	1.19	Required	3.65	1.27	Required
16	Exposes the facilities used in the industry to the learner.	4.01	.88	Required	3.57	1.21	Required
17	The use of instructional facilities gives fast understanding of learning of metal works trades.	3.93	1.02	Required	3.76	1.16	Required
18	Instructional facilities encourage the establishment of skills acquisition centres	3.96	1.01	Required	3.84	1.02	Required
19	Hand on instructional materials around the classroom and workshop	3.96	0.97	Required	3.86	1.04	Required
20	Makes instructional material visual and vital in every class	3.65	1.18	Required	3.79	1.08	Required
Grand Means/S.D		**3.87**	**1.04**		**3.80**	**1.09**	

No. of Vocational and Technical Education (VTE) Ph.D Students (RSU) =16
No. of Industrial Education(IE) Ph.D Students (IAUOE) =19

The data displayed on table 2 shows that the mean values ranging from 3.06 to 3.76 which all are greater than the criterion mean of 3.50. This shows that the 10-items are required as effective ways of handling instructional materials in teaching metal works technology courses in Rivers State for global competitiveness. The table further shows that the standard deviations of the items are within the range of 0.88 to 1.21, indicates that the mean values are closer to each other. It implies that their responses are similar.

Test of Hypotheses

Table 3 Z-test Analysis onResponses ofVTE Ph.D Students (RSU) and IE Ph.D Students(IAUOE)on the Qualitiesof Teachers Required of Metalwork Technology for Global Competitiveness

Respondents	Mean	No	S.D	Df	∝	Z-cal	Z-cri	Remark
VTE Ph.D V Students(RSU)	3.71	16	1.17					
				33	0.05	0.285	+1.96	Accepted
IE Ph.D Students(IAUOE)	3.82	19	1.10					

Vocational and Technical Education (VTE)
Industrial Education (IE)

Table 3 shows that the Z-calculated is 0.285 at 0.05 level of significance and 33 degree of freedom while the value of Z-critical is 1.96. Based on the analysis, the value of Z-calculated is less than the value of Z-critical. This indicates that there is no significant difference in the mean response between VTE Ph.D students(RSU)and IE Ph.D(IAUOE) Students on the qualities of metal work technology teachersrequired in teaching metal works technology courses in Rivers State for globalcompetitiveness

Table 4Z-test Analysis on Response of VTE Ph.D Students(RSU)and IE Ph.DStudents (IAUOE)on the Effective Ways of Handling Instructional Materials for Global Competitiveness

Respondents	Mean	No	S.D	Df	∝	z-cal	z-cri	Remark
VTE Ph.D V Students(RSU)	3.87	16	1.04					
				33	0.05	0.194	+1.96	Accepted
VTE Ph.D Students(UOE)	3.80	19	1.09					

Vocational and Technical Education (VTE)
Industrial Education (IE)

The data on table 4 indicates that the Z-calculated is 0.194 at 0.05 level of significance and 33 degree of freedom while the Z-critical is 1.96. Base on this result, the Z-calculatedis lesser than the Z-critical. Hence, the finding indicates that there is no significant difference in the responses between VTE Ph.D Students (RSU) and IE Ph.D Students (IAUOE) on the effective ways of metal work technology teachers in handling instructional materials in Rivers State for global competitiveness.

V. DISCUSSION

The finding of this study revealed that the items listed in the table are qualities of good teachers requiredin metal work technology trades for global competitiveness in Rivers State. The findings revealed thatteachers who are regular and punctual to classes, teach according to set objectives, posse qualified academic credentials, grounded in method and procedure relevant to build capacity and among others. The finding agreed with the opinion of Akpan (2014) technical teachers make use of these instructional materials to demonstrate skills to students in various courses, hence thoroughly carry out checks on equipment, machines and tools to ascertain their functionality through periodically. The finding also consented with Kerene(2018) who stated that teachers should be grounded in knowledge, skills, values, principles, methods and procedure relevant to build capacity of students in their learning area of practice for global competitiveness. The result of the study further found that there is no significant difference in the mean responses between VTE Ph.DStudents (RSU) and IE Ph.D Students (IAUOE)on the qualities of metal work technology teachersrequired in teaching metal works technology courses in for globalcompetitiveness in Rivers State. This proved that quality and competent attribute teachers among other things aid teaching and learning in metal work technology in Rivers State for global competitiveness.

The finding further revealed 10 effective waysrequired of metal works technology teachers in handling instructional materials in teaching metal works technology for global competitiveness in Rivers State. These findings include use of instructional material regularly during teaching, display instructional material to the see of the students, ensure the students are grouped and teach each group separate among others. This finding consented with the opinions of Okwelle, Beako and Ajie (2017)which stated that making instructional material visual and vital in every class, hand on instructional materials around the classroom wall and workshop, handle to ensure every student know the material or equipment use as instructional material in your class are the best practice required in applying teaching materials during teaching in the technical college.These effective ways in handling instructional material provide ideas and knowledge to the student and allows potentials to meet international standards and enhance competency, expertness and efficiency in term of acquiring practical knowledge needful for global competitiveness. The finding further revealed that there is no significant difference in the mean responses between VTE Ph.D Students (RSU) and IE Ph.D Students (IAUOE) on the effective ways of metal work technology teachers in handling instructional materialsin Rivers State for global competitiveness.This signifies that these are the effective ways of handling instructional material in teaching metal works technology in for the students to be versatile, relevant and help in fasting-up production process in metal works construction industries in Rivers State.

VI. CONCLUSION

Based on the findings, the researchers concluded on the following:The capacity of teachers engaged to drive every educational process determine the output or results coming out the students. This situation is not far from metal works technology courses in technical college that turned out graduates who mount various

industries across the state. Metal work technology trades as a course offered in higher technological institutions provided technical skills workforce that maintain various technical positions inmetal works unit of multi-national oil industriesand other related work places. Individuals acquired these practical skillsin technical college through quality and competent teachers who teach and demonstrate with instructional materials. This quality teaching inculcate values and competencies into these studentsand enable them to competefavourably with others within and outside our environment by improving entrepreneurial activities and enhance global competitiveness in Rivers State.

RECOMMENDATIONS

In line with the findings of this study as well as other discussions and implications, the following measures are recommended to enhance global competitiveness in Rivers State

1. That the government should ensure only qualify metal works technology teachers are given employment opportunities to teach in technical college in Rivers State.
2. The multinational oil industries should made available technical tools, equipment and other valuable instructional materials to technical college with a view to use these materials to teach the students in Rivers State.

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