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# TEACHERS' PERCEPTION OF DIFFICULT TOPICS IN UPPER BASIC TECHNOLOGY EDUCATION SYLLABUS IN IBADAN METROPOLIS, OYO STATE

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***Abstract***

*The study investigated teachers' perception of difficult topics in upper basic technology syllabus in Ibadan Metropolis, Oyo State. A research question and four hypotheses guided the study. A descriptive survey of the correlational research design was adopted for the study. Multi-stage sampling technique was used for the study. The sample for the study consisted of 222 teachers. Questionnaire for Identification of Basic Technology Difficult Topics in Upper Basic Education" (QIBT-DTUBE) with reliability coefficient of 0.91 was used for data collection. Research questions were analyzed using Mean and Standard deviation while the null hypotheses were tested at .05 level of significance, using t-test statistics. Result obtained indicated that teachers perceived Geometric Construction, Plane Figures, Isometric Drawing, Oblique Drawing, Orthographic Drawing, One-point Perspective Drawing, Scales and Scale Drawing, Hydraulic and Pneumatic*

*Machines, Gears, Woodwork Projects and Metalwork Projects as difficult topics. Moreover, a significant difference of teachers' qualifications in terms of highest levels of education and certification in technology education as well as no significant years of experience' differences were obtained on their perception on basic technology topics. Mixed results were obtained on the influence of gender on teachers' perception on basic technology topics. Based on these findings, it was recommended among others that teachers be supported with appropriate training to expand their knowledge and understandings on all the topics identified as difficult to teach.*

**Background of the Study**

In Nigeria today, the re-alignment and restructuring of primary and junior secondary school curricula prompted the federal government to integrate some related subjects into one in the new basic education curriculum. One of such subject is basic science and technology which is a product of Basic Science, Basic Technology, Physical and Health Education (PHE) and Information Technology in the old curriculum. The integration of these four subjects into one is relatively new and little information is made available regarding its implementation. Meanwhile, National Policy on Education made it known that specialist teachers shall be provided for particular subjects such as Mathematics, Basic Science, Basic Technology and Physical and Health Education among others (FRN, 2013). In this case, subject specialists shall be made to teach each of the subjects and as such constitute the premise on which the focus of this study has been directed. Hence, the focus of this study would mainly be on basic technology.

Basic Technology, a pre-vocational training, formerly known as Introductory Technology up till 2007 is a subject taught across the three levels of basic education of Nigerian educational system. Basic technology at this level is meant to provide basic knowledge about industrial technology and as such incorporates skilled subjects such as wood work, metalwork, electrical/electronics, auto-mechanics, technical drawing and other local crafts. According to Federal Ministry of Education (FME, 2009), the purposes of pre-vocational training at this level of Nigerian education system include: introduction into the world of technology for the purpose of interest arousal and determining the choice of vocation at the end of basic education as well as profession later in life; exposing students to career awareness by exploring usable options in the world of work; and enabling youths to have a understanding of the increasing complexity of technology. When the students are exposed to the rudiments of technology, it enables them to gain awareness, appreciation and orientation into the world of technology so as to develop further or choose a trade. By doing so, basic technology could be seen as an indispensable prevocational subject that constitutes a worthwhile base on which future vocational choices are made.

The need for effective teaching and learning of basic technology cannot be overemphasized. Teacher is central and has a critical role to play in the successful implementation of this basic technology curriculum. Teaching of basic technology cannot be described as successful unless learning has taken place which is a result of teacher's efforts, it is expected that teacher, who is the chief implementer of basic technology curriculum will possess good knowledge, skills, attitude and mastery of the subject matter. In addition, basic technology teachers must be caring, loving, diligent, painstaking and enduring to make the students to be interested in the basic technology, to be sustained at the senior classes. This would mean that the country is being driven towards technological advancement.

The success of teaching and learning is highly dependent upon the effectiveness of teachers. To teach can be described as to enable or cause somebody to do something by instructing and training him (Ugochukwu, 2014). Ugochukwu further explains that teaching takes place when a specific lesson is given to the learners at school or elsewhere on a relevant course, when a teacher explains, shows and states something by way of instruction to learners.

Teachers' ineffective grasp of topics due to difficulty in constructing and understanding of these topics may also render their lessons presentation ineffective. This view is also according to Adegun and Adegun (2013), a better understanding of any topic lies on the personal interpretations or construction that people make of it. In this case, teachers' mastery of the subject matter and the way and manner by which a subject is taught by the teacher may be influenced by

their personal interpretations or construction they made of it. Consequently, students may be prompted to perceive some topics as difficult (Sheehan, 2010) when the topics appeared difficult to the teacher. For instance, teaching upper-basic education level students' basic technology can be a challenge for a teacher when he intends to overcome rote learning of facts without a deeper understanding of the topic (*Henno & Reiska, 2010*). Lack of knowledge on the topics and terminologies used in the contents of the curriculum (Olubukola, 2015) among others may be responsible for such action on the part of the teacher. Learning of such topics by the students may also be difficult and frightening to them and thus results in students' low performance.

No appreciable achievement can be observed if Basic Technology topics are not well understood and communicated by the teacher. In a bid to overcome this, teacher needs to get his concept clarified and organized so that his thinking would not get muddled and make the topic appear difficult (Henno & Reiska, 2010). Ogunkola and Samuel (2011) describe teachers' perception of difficult topics as teachers' views of the ease or difficulty of their own teaching of particular topics in the concerned curriculum. Olubukola (2015) posits that some topics are not too easy to teach by the teachers due to its demanding and abstract nature and students also find such topics difficult to understand. *Once the teachers perceived topics as difficult,* whether difficult for the students as determined by the teacher's previous experience or difficult for the teachers because of the background, there is always a need for redress in order to raise teachers' level of understanding of topics for optimal performance. This study is therefore aimed at providing insight into basic technology topics that teacher's perceive as posing difficulty in their teaching.

Research evidence by Ogunkola and Samuel (2011) identified gender, teachers' qualification and teaching experience as factors capable of making influence on or creating problem in their perception about a subject level of difficulty. The issue of gender differences is becoming paramount to educational researchers in recent times. The term gender is used to classify human into male and female. There had been divergent opinions and reports on the comparative ability of male and female in human endeavours. For that reason, it would not be out place to examine the possible influence gender would have on the perceived levels of difficulty of basic technology topics by upper basic education teachers in this study. More so, the laudable objective of basic technology may not be achieved when incompetent teachers handle the subject. Such teachers may not be able to properly and adequately handle the topics listed in the curriculum. Basic technology, being a critical subject at this level of education on which future technological growth is laid deserves to be handled by competent teachers. This would in turn promote the realization of national growth in technology as highlighted in the Nigeria National Policy on Education (FRN, 2013).

Researchers such as Ogunkola and Samuel (2011), Rice (2010) and Jaime (2008) have recognized the importance of teachers' qualification in the proper execution of their professional roles as teachers. Teachers' highest level of education in this case refers to the qualifications they hold in their areas of expertise, in terms of academic degrees. Teachers' certification is usually related to the area of expertise where he or she has the certificate. Certificated teachers are usually those who have graduated from accredited teacher education programmes (Zuzovsky, 2003). This means that teachers with NCE, BSc (Ed) or B.Ed., and those who have added PGDE are regarded as professional teachers and others are classified as non-professional teachers (Owolabi & Adedayo, 2012). It is observed that some teachers are teaching subjects other than those for which they had formal qualifications. This is apparent among teachers teaching basic technology as some of them have no basic training in technical or technology education. For instance, some of

these teachers had Ordinary National Diploma (ND), Higher National Diploma (HND), B.Eng. certificates in engineering and such other related science subjects. This indicates that they lack the professional certification in the field they were teaching.

Teaching experience according to Jaime (2008) is another criterion used often to measure some other teachers' variables. This is premised on the fact that experience accumulated over the years is the most crucial and necessary condition for expertise (Jaime, 2008). Rice (2010) explains that many occupations recognizes employees years of experiences as a relevant factor in human resource policies, including compensation systems, benefits packages, and promotion decisions among others. The underlying assumption is that experience gained over time enhances the knowledge, skills, and productivity of workers. Much of the researches regarding teachers' experience indicate that teaching experience could be related to a lot of other factors in students' learning (Jaime, 2008).

Owolabi and Adedayo (2012) reported that experience counts a lot in the efficiency of teachers and classified it into long term experienced teachers, that is, those who have spent at least five years in teaching while teachers with less than five years are described as short time experience teachers. They explained that teachers with long years of teaching experience would have been availed the opportunity of the learning by doing effect on the job and as such stands at a better advantage. This means that teachers' experience may influence their perception about a topic level of difficulty. Premised on these reasons, it would not be out of place if demographic variables such as teachers' gender, qualifications (that is, teachers' highest levels of education and **teachers' certification**) and experience are considered in the context of this study.

**Purpose of the Study**

The purpose of this study was to identify levels of difficulty of basic technology topics as perceived by upper basic education teachers. Specifically, the study sought to:

i. determine the perceived levels of difficulty of Basic Technology topics by upper basic education teachers in Ibadan Metropolis.
ii. examine influence of teachers' gender on the perceived levels of difficulty of Basic Technology topics by upper basic education teachers in Ibadan Metropolis,
iii. examine influence of teachers' qualifications in term of highest levels of education on the perceived levels of difficulty of basic technology topics by upper basic education teachers in Ibadan Metropolis,
iv. examine influence of teachers' qualifications in terms of certification in technology education on the perceived levels of difficulty of Basic Technology topics by upper basic education teachers in Ibadan Metropolis,
v. examine influence of teachers' teaching experience on the perceived levels of difficulty of Basic Technology topics by upper basic education teachers in Ibadan Metropolis,

**Research Question**

1. What is the perceived level of difficulty of Basic Technology topics by upper basic level education teachers in Ibadan Metropolis?

**Hypotheses**

The following hypotheses were formulated and tested at .05 level of significance to guide the study:

$H_{01}$: There is no significant difference in the representation of sexes on the perceived levels of difficulty of Basic Technology topics by upper basic education teachers in Ibadan Metropolis.

$H_{02}$: There is no significant difference in the representation of qualifications in

term of highest levels of education on the perceived levels of difficulty of basic technology topics by upper basic education teachers in Ibadan Metropolis

$H_{03}$: There is no significant difference in the representation of qualifications in term of certification in technology education on the perceived levels of difficulty of basic technology topics by upper basic education teachers in Ibadan Metropolis

$H_{04}$: There is no significant difference in the representation of years of experience on the perceived levels of difficulty of basic technology topics by upper basic education teachers in Ibadan Metropolis

**Methodology**

A descriptive survey of correlational research design was used for the study. The design was considered suitable for this study because it produces a snap shot of a population at a particular point in time. The researcher was therefore availed the opportunity to gather information on the subject of investigation that is, list of topics in the curriculum and describe the situation as it is with the teachers who are the chief implementers of this curriculum. The study was conducted in the upper basic education schools, the Junior Secondary Schools up till date in eleven local government areas of Ibadan metropolis in Oyo State. The population for this study comprised 523 Basic Technology specialist teachers in all upper basic education schools in eleven local governments in Ibadan metropólis in Oyo State.

The sample size for the study consists of 222 basic technology specialist teachers selected across all the schools in the eleven local governments. The sample size was determined using Singh and Masuku (2014) model on a 2.5% marginal error to arrive at the figure of 222 from 523. Multi-stage sampling technique was used for the study. In the first stage, purposive sampling technique was used to select 402 permanent teachers out of the three categories of teachers in the schools, that is, teachers employed by the parent's teachers association, teachers who are on their National Youth Service Corps; and permanent teachers employed by the state government. Proportional sampling technique was used to allocate the percentage of respondents who participated in the study from each local government. Simple random sampling technique was used in the last stage to select 250 out of 402 permanent teachers who are the real respondents.

The instrument used for data collection was a 34-items questionnaire titled: "Questionnaire for Identification of Basic Technology Difficult Topics in Upper Basic Education" (QIBT-DTUBE) derived the Basic Technology curriculum. QIBT-DTUBE consists of sections A and B. Section A consisted of teachers' demographic details such as gender, qualification in term of highest level of education and certification as well as teaching experience. Section B is checklist consists the list of all topics in basic technology curriculum for upper basic education. The mode of response consisted of a 4-point likert scale that is, Not difficult = 1; Slightly Difficult = 2; Difficult = 4 and Very difficult = 5.

Face and content validity were conducted on QIBT-DTUBE by three technology education experts from the departments of science and technology education, University of Lagos, Akoka. The comments and suggestions of the experts on the clarity and scope of the contents were incorporated in building the final draft of the instrument. QIBT-DTUBE was trial tested on 17 basic technology specialist teachers in Ogbomoso South local government area of Oyo state. The internal consistency of QIBT-DTUBE using Cronbach alpha reliability technique was 0.91. Copies of QIBT-DTUBE were administered and collected through direct approach by the researcher and five research assistants. The consent of the principals of schools involved in the study were sought and secured. The principals equally assisted the researcher by solicited the co-operation of Basic

Technology specialist teachers in their respective schools. The researcher and five research assistants administered 250 copies of questionnaires and 243 copies were retrieved. Mean and standard deviation were used to answer research question. Any item with a mean score of 2.5 and above was considered as difficult while less 2.5 was considered not difficult. The four hypotheses were tested at 0.05 level of significance using t-test.

**Table 1:** Mean Ratings of Basic Technology Specialist Teachers' Responses and Analysis of t-test for Group Differences based on Gender, Qualification in terms of the Highest Degree and Certification in Technology Education and Teaching Experience

| S/N | Topics | Mean | SD | Gender | | Qualification in terms of highest levels of education | | Certification in technology education | | Teaching Experience | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a. | **Understanding Basic Technology** | | | *t-value* | Sig. (2-tailed) | *t-value* | Sig. (2-tailed) | *t-value* | Sig. (2-tailed) | *t-value* | Sig. (2-tailed) |
| 1. | Understanding Technology | 1.075 | .263 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| b. | **Safety** | | | | | | | | | | |
| 2. | Safety Guidelines | 1.075 | .264 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 3. | Workshop Safety | 1.075 | .263 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 4. | First Aid | 1.075 | .264 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 5. | Rescue Operation | 2.382 | .132 | .425 | .671 | 1.418 | .016 | -.917 | .160 | -.503 | .615 |
| c. | **Material and Processing** | | | | | | | | | | |
| 6. | Properties of Materials | 1.080 | .002 | .018 | .684 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 7. | Building Materials | 1.075 | .264 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 8. | Materials and their common Uses | 1.075 | .265 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 9. | Processing of Timber | 1.075 | .264 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 10. | Processing of Metal | 1.075 | .265 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 11. | Processing of Clay, Ceramics and Glass | 1.075 | .264 | -2.210 | .028 | 3.271 | .001 | -4.963 | .000 | .209 | .835 |
| 12. | Processing of Plastics and Rubber | 1.075 | .264 | -2.210 | .028 | 3.271 | .001 | -3.146 | .002 | -.503 | .615 |
| d. | **Drawing Practice** | | | | | | | | | | |
| 13. | Drawing Instruments and Materials | 1.060 | .018 | -1.459 | .146 | .305 | .012 | 7.479 | .000 | 1.628 | .105 |
| 14. | Board Practice | 1.018 | .133 | .458 | .648 | 1.450 | .148 | 7.402 | .000 | 1.594 | .112 |
| 15. | Freehand Sketching | 1.020 | .036 | .381 | .703 | 9.793 | .000 | 7.182 | .000 | 1.655 | .099 |
| 16. | Geometric Construction | 2.535 | 1.090 | .381 | .703 | 9.863 | .000 | 7.077 | .000 | .565 | .513 |
| 17. | Plane Figures | 2.506 | 1.094 | .381 | .703 | 10.079 | .000 | 2.783 | .006 | .565 | .513 |
| 18. | Isometric Drawing | 2.506 | 1.094 | .381 | .703 | 10.100 | .000 | 2.794 | .004 | .565 | .513 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 19. | Oblique Drawing | 3.396 | 1.090 | .533 | .594 | 2.244 | .000 | -7.077 | .000 | 1.655 | .099 |
| 20. | Orthographic Drawing | 3.577 | 1.235 | -.730 | .446 | 2.244 | .001 | -2.783 | .002 | .656 | .513 |
| 21. | One-point Perspective Drawing | 3.577 | 1.235 | -.730 | .446 | 2.244 | .000 | -2.971 | .004 | .656 | .513 |
| 22. | Scales and Scale Drawing | 2.911 | 1.133 | -.730 | .446 | 5.310 | .260 | -2.783 | .006 | .656 | .513 |
| e. | **Tools, Machines and Processes** | | | | | | | | | | |
| 23. | Woodwork Hand Tools | 1.073 | 1.105 | -730 | .466 | 2.244 | .026 | 2.783 | .006 | .656 | .513 |
| 24. | Metalwork Hand Tools | 1.163 | .446 | -2.565 | .011 | 4.178 | .000 | -2.971 | .004 | 2.106 | .076 |
| 25. | Maintenance of Tools and Materials | 1.159 | .442 | -2.395 | .018 | 4.007 | .000 | 3.952 | .000 | 1.769 | .078 |
| 26. | Woodwork Machines | 1.181 | .459 | -2.007 | .046 | 3.219 | .001 | -5.885 | .000 | 2.605 | .055 |
| 27. | Belt and Chain Drives | 1.163 | .446 | -2.565 | .011 | 4.178 | .000 | -6.190 | .000 | 2.106 | .036 |
| 28. | Hydraulic and Pneumatic Machines | 2.942 | 1.200 | -.022 | 9.83 | 1.556 | .121 | -6.752 | .000 | .495 | .621 |
| 29. | Gears | 2.701 | 1.094 | .381 | .703 | 9.863 | .000 | -1.849 | .006 | 1.594 | .112 |
| 30. | Woodwork Projects | 3.167 | 1.204 | -4.33 | .659 | 1.754 | .081 | -7.402 | .000 | .599 | .550 |
| 31. | Metalwork Projects | 3.101 | 1.415 | -4.29 | .668 | 2.289 | .023 | -2.585 | .010 | .497 | .620 |
| 32. | Soldering and Brazing; | 1.159 | .443 | -2.393 | .018 | 4.007 | .000 | -2.930 | .004 | 1.761 | .078 |
| 33. | Machine motion | 1.181 | .459 | -2.007 | .046 | 3.219 | .001 | -5.885 | .000 | 2.605 | .055 |
| 34. | Rotary motion | 1.163 | .446 | -2.565 | .011 | 4.178 | .000 | -6.752 | .000 | 2.106 | .066 |

## Results

Table 1 indicated that the mean ratings for Geometric Construction; Plane Figures; Isometric Drawing; Oblique Drawing; Orthographic Drawing; One-point Perspective Drawing; Scales and Scale Drawing; Hydraulic and Pneumatic Machines; Gears; Woodwork Projects; Metalwork Projects; and Soldering and Brazing were above the cut-off point of 2.5 indicating that the respondents identified these topics as difficult to teach. On the contrary, the mean ratings for Understanding Technology; Safety Guidelines; Workshop Safety; First Aid; Rescue Operation; Properties of Materials; Building Materials; Materials and their common Uses; Processing of Timber; Processing of Metal; Processing of Clay, Ceramics and Glass; Processing of Plastics and Rubber; Drawing Instruments and Materials; Board Practice; Freehand Sketching; Woodwork Hand Tools; Metalwork Hand Tools; Maintenance of Tools and Materials; Woodwork Machines; Belt and Chain Drives; Machine motion; and Rotary motion were below the cut-off point of 2.5 indicating that the respondents identified that these topics are not difficult to teach.

In the *t*-test conducted for all the 34 items on gender representations, the *p-values* for Rescue Operation; Properties of Materials; Drawing Instruments and Materials; Board Practice; Freehand Sketching; Geometric Construction; Plane Figures; Isometric Drawing; Oblique Drawing; Orthographic Drawing; One-point Perspective Drawing; Scales and Scale Drawing; Woodwork Hand Tools; Hydraulic and Pneumatic Machines; Gears; Woodwork Projects; Metalwork Projects; and Soldering and Brazing were less than the alpha value of 0.05. In this case, the null hypothesis is rejected and the alternate hypothesis is upheld. Hence, a significant difference exists in the representation of sexes on the perceived levels of difficulty of these basic technology topics by upper basic education teachers in Ibadan Metropolis.

The *p-values* for Understanding Technology; Safety Guidelines; Workshop Safety; First Aid; Building Materials;

Materials and their common Uses; Processing of Timber; Processing of Metal; Processing of Clay, Ceramics and Glass; Processing of Plastics and Rubber; Metalwork Hand Tools; Maintenance of Tools and Materials; Woodwork Machines; Belt and Chain Drives; Soldering and Brazing; Machine motion; and Rotary motion were greater than the alpha value of .05. For that reason, the null hypothesis was not rejected and the alternate hypothesis was rejected. It therefore implies that there is no significant difference in the representation of sexes on the perceived levels of difficulty of these basic technology topics by upper basic education teachers in Ibadan Metropolis.

The results in the table further showed that in the t-test conducted for the representation of teachers' qualifications in terms of highest levels of education on all the 34 items, the *p-values* for all the items except Board Practice; Scales and Scale Drawing; Hydraulic and Pneumatic Machines; and Woodwork Projects were less than the alpha value of .05. Hence, null hypothesis is rejected and the alternate hypothesis is not rejected for Board Practice; Scales and Scale Drawing; Hydraulic and Pneumatic Machines; and Woodwork Projects only. The implication is that there is a significant difference in the representation of qualifications in term of highest levels of education on the perceived levels of difficulty of basic technology topics by upper basic education teachers in Ibadan Metropolis while for items Board Practice; Scales and Scale Drawing; Hydraulic and Pneumatic Machines; and Woodwork Projects, there is no significant difference in the representation of qualifications in term of highest levels of education on the perceived levels of difficulty of basic technology topics by upper basic education teachers in Ibadan Metropolis.

Table 1 indicated that in the t-test conducted for the representation of teachers' qualifications in term of certification in technology education on all the 34 items, the *p-values* for all the items were less than the alpha value of 0.05. Hence, null hypothesis is rejected. Hence, a significant difference exists in the representation of qualifications in term of certification in technology education on the perceived levels of difficulty of basic technology topics by upper basic education teachers. The t-test conducted for the representation of teachers' years of teaching experience on all the 34 items, however indicated that the *p-values* for all the items were greater than the alpha value of 0.05. In this case, the null hypothesis is not rejected and the alternate hypothesis is rejected. The implication is that there is no significant difference in the representation of years of experience on the perceived levels of difficulty of basic technology topics by upper basic education teachers in Ibadan Metropolis. This is contrary to the study conducted by Olubukola (2015) reported that teachers' teaching experience has significant influence on their perception of the difficulty levels of the Mathematics topics.

**Discussion of Findings**

The findings of the study indicated that Geometric Construction, Plane Figures, Isometric Drawing, Oblique Drawing, Orthographic Drawing, One-point Perspective Drawing, Scales and Scale Drawing, Hydraulic and Pneumatic Machines, Gears, Woodwork Projects and Metalwork Projects are difficult topics as identified by the respondents that is, basic technology specialist teachers. This is in consonance with opinion of Ugochuckwu (2014) who stated that teaching upper-basic education level students' basic technology can be a challenge for a teacher when the topics appeared difficult to the teacher.

The findings of the study further revealed that significant difference exists in the representation of sexes on the perceived levels of difficulty of basic technology topics such as Rescue Operation; Properties of Materials; Drawing Instruments and Materials; Board Practice; Freehand Sketching; Geometric Construction; Plane Figures; Isometric Drawing; Oblique Drawing; Orthographic Drawing; One-point Perspective Drawing; Scales and Scale

Drawing; Woodwork Hand Tools; Hydraulic and Pneumatic Machines; Gears; Woodwork Projects; Metalwork Projects; and Soldering and Brazing.

On the contrary, no significant difference exists in the representation of sexes on the perceived levels of difficulty of basic technology topics such as Understanding Technology; Safety Guidelines; Workshop Safety; First Aid; Building Materials; Materials and their common Uses; Processing of Timber; Processing of Metal; Processing of Clay, Ceramics and Glass; Processing of Plastics and Rubber; Metalwork Hand Tools; Maintenance of Tools and Materials; Woodwork Machines; Belt and Chain Drives; Soldering and Brazing; Machine motion; and Rotary motion. The study corroborated Olubukola (2015) in his study who unveiled that gender does not significantly influence the teachers' perception of the difficulty levels of the Mathematics topics.

It was further revealed that there is a significant difference in teachers' qualifications in term of highest levels of education on the perceived levels of difficulty of all the basic technology topics listed except Board Practice; Scales and Scale Drawing; Hydraulic and Pneumatic Machines; and Woodwork Projects. This is in line with Owolabi and Adedayo (2012) who also reported a significant difference between teachers with high qualifications and those with low qualifications in their performance. The study further unraveled that a significant difference exists in teachers' qualifications in term of certification in technology education on all the perceived levels of difficulty of basic technology topics listed for the study. This in agreement with Owolabi and Adedayo (2012) who also reported a significant difference between professional teachers and non-professional teachers in their performance. The study unveiled that there is no significant difference in teachers' years of experience on the perceived levels of difficulty of basic technology topics which is in agreement with Owolabi and Adedayo (2012) who also reported no significant difference between long time experience teachers and short time experience teachers on their performance.

## Conclusion

On the basis of the findings from the study, it was established and concluded that Geometric Construction, Plane Figures, Isometric Drawing, Oblique Drawing, Orthographic Drawing, One-point Perspective Drawing, Scales and Scale Drawing, Hydraulic and Pneumatic Machines, Gears, Woodwork Projects and Metalwork Projects are difficult topics to teach. It is equally evident that identification of some topics as difficult is not gender biased while it is gender-biased on some and teachers' years of teaching experience has no influence on it. It was also concluded that teachers' qualifications in term of highest levels of education and teachers' qualifications in term of certification in technology education have important roles to play in teachers' perception of basic technology topics as difficult to teach.

## Recommendations

Based on the findings of the study, the following recommendations were made:

1. Basic Technology specialist teachers should be supported with appropriate trainings in a bid to expand their knowledge and understandings on all the topics identified as difficult to teach by the teachers.
2. The policy framework on professional training and development for teachers as contained in the National Policy of Education should be implemented in pragmatic sense. This would to a large extent, help in the enhancement of teachers' knowledge and competence in teaching most topics identified as difficult to teach.
3. The state government through the state teaching service commission should encourage and motivate basic

technology specialist teachers by sponsoring them for a certification purpose in the field technology education and upgrading their level of qualifications to the highest.

4. Basic technology teachers who are on government permanent employment who are not trained in vocational and technical or technology education should embark on Post Graduate Diploma in Education (PGDE) through in-service trainings

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