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International Journal of Vocational and Technical Education

Full Length Research Paper

Teachers' opinion on availability of e-learning opportunities for effective technical and vocational education and training (TVET) programme in tertiary institutions in South east Nigeria

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Modernity and technological developments have necessitated the need to expose opportunities in e-learning for effective technical and vocational education and training (TVET) programme. The opinion of the teachers regarding availability of these e-learning opportunities raises concern in teaching circles. It could be that teachers appear not worried about the availability of these opportunities. Against this background, it becomes necessary to determine the opinion of teachers on the availability of e-learning opportunities for effective TVET programme in tertiary institutions in South east Nigeria. To achieve this, three research questions and one null hypothesis were raised. The study adopted a descriptive research survey using a sample of 98 TVET lecturers from Enugu State South. Instrument for data collection was validated by three experts and reliability established using Cronbach alpha statistics which yielded a coefficient index value of 0.71 and was adjudged as high enough. It was found out that in the teachers' opinion, e-learning opportunities for effective TVET programme were not available, and that this opinion was not dependent on experience. It was further recommended that teachers be sent on capacity building programmes to get acquainted with the skills to exploit the availability of e-learning opportunities in higher institutions.

Key words: E-learning, availability, opportunities.

INTRODUCTION

Modernity and technological developments have necessitated the need to expose opportunities in e-learning for effective technical and vocational education and training (TVET) programme. This is evidenced in the use of computers, and computer accessories by individuals as essential tools for skill development and learning. The development of effective teaching methods to help technical and vocational education and training (TVET) in the use of technology resources are of great concern in Nigeria, but exploitation of modern opportunity such as e-learning (Enebechi and Otiji, 2013) is a relief.

This demand for adopting technology-based education

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is increasing exponentially as schools in Nigeria especially in the South East are eager to catch-up with the trend of technology development. In view of this high demand, most teachers are found using the old methods of teaching instead of adopting the new technology-driven methods. Such practice is contrary to the opinions of Ifeakor and Okoli (2010) that developed countries have adopted e-learning methods in teaching university students. It therefore appears that students are increasingly becoming reliant on the virtual classrooms for solutions to academic problems based on the demand but it seems as if the teachers are not interested. It appears the opportunities surrounding this form of teaching and learning abound without the awareness of some teachers, especially technical and vocational education and training (TVET) teachers who believe with the opinion of Terande (2012), that computers and other hardware are not available for teaching and learning.

It is therefore expected that TVET teachers should adopt and utilize the available e-learning opportunities for teaching and learning process. Such opportunities are access to the provisions of computer hardware like CD ROMs, flash drives, printers, scanners, mouse, and software like internet connectivity, belonging to social media like Facebook, YouTube, tweeters, having knowledge about Yahoo, G-mail, Wiki, and ability to open and manage an e-mail address. TVET teachers in a society with availability and provision of internet facilities must not isolate themselves from exposure to these facilities especially at the university level where most, if not all the students are expected to be computer literate. This singular act of integration will help in technology development.

The teaching and learning of TVET subjects at the university level should involve, according to Inomiesa and Osakwe (1998), helping students to learn, develop critical thinking skills and acquire problem-solving skills. It also involves helping students to know where and how to acquire needed information and prepare them for the process of life-long education. The students are also expected to develop the spirit of enquiry. To achieve these goals, TVET teachers should employ new technological resources in the teaching and learning process for maximum benefit. To keep pace with the rapid growth and changes in technology, there is urgent need to move beyond the inactive learning activities that characterize lectures towards more engaged, active and investigative TVET lessons by the use of e-learning methods.

Developments in internet and multimedia technologies are the basic enabler of e-learning, with consulting, content, technologies, services and support being identified as the five key sectors of the e-learning industry. E-learning is defined as the use of electronic machinery to convey education and training applications, observe or monitor learners' performance and report the progress made by the learners. In Hedge and Hayward (2004), e-learning is described as an innovative approach for delivering electronically mediated, well designed, learner-centered and interactive learning environments to anyone, anyplace, anytime by utilizing the internet and digital technologies in conjunction with instructional design principles. Therefore, it may be said that e-learning is a system of learning electronically between or among people, regardless of distance, time or place. It is not only restricted to the use of internet which can be referred to as an online process, but it also involves the use of several electronic media outside the internet or web known as an offline process. This is in support to Islam (1997) who said that the applications and process of e-learning include computer-based learning, web-based learning, visual classroom and digital collaboration.

E-learning is a driving force for achieving better education in recent times. Computer- aided equipment therefore needs to be embraced as pedagogical tools in Nigerian schools owing to the advancement of technology (Ekoko, 2006). TVET teachers should endeavour to develop a burning desire to catch up with the rest of the world to deliver instructions in this area. Thus Okafor and Ejiofor (2013) informed that e-learning is student-centered, self-paced and hand-on learning.

Technical Vocational Education and Training (TVET) refers to a series of activities directed towards a person with skills and knowledge that will enable him work and become as self sufficient as possible (Alasa, 2010). Therefore, TVET programmes have an extensive link with e-learning as skill is highly needed in assessing the programme. Kareen and Garba (2008) in Okpor and Hasan (2012) stated that TVET is rooted on preparation of students for acquisition of necessary skills, knowledge and attitude to earn employment as expert assistants to professionals in any field of Technology and Engineering.

TVET teachers in tertiary institutions share dichotomous levels of experience. While some are more experienced others may be less experienced. Whether this teachers' opinion is influenced by their teaching experience is yet to be determined in the study. For this study, TVET teachers who have worked for less than 6 years (0 – 5years) are regarded as less experienced. All those who have worked for 6 years and above are regarded as more experienced. The State Department of Education report (2012) acknowledged that experience is certainly important in teaching and this is indicated as beneficial from five years. The report also indicated that experience influences the way curriculum is interpreted in most subject areas. This shows that experience contributes immensely to teaching-learning programmes.

The provision of e-learning resources in Nigerian

schools is manifested in the collaboration between New Partnership for Africa's Development (NEPAD) and Tertiary Education Trust fund (TETfund) to promote online learning in Nigeria. TETFund has invested billions of naira in the establishment of e-learning materials like e-libraries in schools across the country. The construction of micro-teaching laboratories in all Colleges of Education in Nigeria is one of such investments. Despite these huge amounts invested in the procurement of these (e-leaning) equipment, TVET teachers are still found wanting in putting these available resources to use. Such opportunities like the use of smartboards, multimedia systems, CD Roms abound but the teachers still employ old methods of teaching while carrying out their obligations. Okafor and Ejiofor (2013) discovered that teachers' use of the resources is very little. Thus, the students have seriously been confined to the four walls of the classrooms and chalk-talk model of teaching employed thereby not giving the students the opportunity of moving into the modern acceptable level of education. It could be that teachers appear not concerned about the availability of these resources. Against this background the researcher was motivated to determine the teachers' opinion on availability of e-learning opportunities for effective TVET programme in tertiary institutions in South East Nigeria.

The study specifically aims to determine

1. Teachers' opinion on availability of hardware for effective TVET programme in tertiary institutions in South East Nigeria.
2. Teachers' opinion on availability of software for effective TVET programme in tertiary institutions in South East Nigeria.
3. The association between teachers' opinion and teaching experience on availability of e-learning opportunities for effective TVET programme in tertiary institutions in South east Nigeria.
To help the study, three research questions and one null hypothesis were posed and formulated respectively.

The research questions are;

1. What is the opinion of teachers on availability of hardware for effective TVET programme in tertiary institutions in South East Nigeria?
2. What is the opinion of teachers on availability of software for effective TVET programme in tertiary institutions in South East Nigeria?
3. What is the association between teaching experience and opinion of teachers on availability of e-learning opportunities for effective TVET programme in tertiary institutions in South East Nigeria?

H_{01}: There is no significant differences between the mean scores of more experienced and less experienced TVET teachers on their opinion on availability of e-learning opportunities for effective TVET programme in tertiary institutions in South East Nigeria.

METHOD

The descriptive survey design was utilized for the study. -A population of 98 lecturers who served as the sample for the study was used. Data collected was done personally by the researcher with the help of three research assistance. Three experts in TVET validated the instrument. The reliability of the instrument was established using test-retest method and Cronbach Alpha statistics employed to determine the coefficient index value which yielded 0.71 and consequently adjudged as high enough. Among the 98 copies of the questionnaire distributed, 85 were duly returned and therefore qualified for data analysis. Data were analyzed using mean and standard deviation. The four response options of Highly Available (HA), Available (A), Not Available (NA) and Highly Not Available (HNA), were assigned weights of 4, 3, 2, and 1 respectively. Limit of numbers were used to determine the opinion of the teachers on the availability of e-learning opportunities, thus: 3.50 – 4.00 is HA, 2.50 – 3.49 is A, 1.50 – 2.49 is NA and 1.00 – 1.49 is HNA. The t-test statistic was employed to test the only null hypothesis at 0.05 level of significance. The null hypothesis was accepted because t-critical value is greater than the t-calculated value (t- critical > t-cal) for the given degree of freedom.

RESULTS OF THE STUDY

Data in Table 1 show a grand mean of 2.26. This means that in the opinion of the teachers, hardware is not generally available for effective TVET Programme in Tertiary Institutions in South East Nigeria. However, items 1, 6, and 10 have mean scores of 2.84, 3.31 and 2.57 respectively. The implication is that in the opinion of the teachers, computer systems, flash drives and CD ROMs are available hardware but other items like printers, multimedia, interactive smart boards, video player, television sets and others are not available.

Table 2 contains the data that showed a grand mean of 2.37 .This implies that software generally is not available for effective TVET Programme in Tertiary Institutions in South East Nigeria. But items 15, 17, 19 and 20 indicated mean ratings of 2.56, 2.78, 3.07 and 2.68 respectively showing availability.

Table 3 contains the data that showed the opinion of the teachers on availability of e-learning opportunities according to their teaching experiences. According to the table a grand mean of 2.33 and 2.31 for the experience and less experienced respectively were shown. This means that in the opinions of both experienced and less experienced TVET teacher, e-learning opportunities were not available. However, item 20 showed mean ratings of 2.33 and 3.11 for experienced and less experienced respectively. This means that both experienced and less experienced

Table 1. Mean responses on the opinion of teachers on availability of hardware for effective TVET programme in tertiary institutions in South east Nigeria.

S/N	Item	$\bar{x}$	SD	Remark
1.	Computer systems are available for teaching	2.84	0.89	Available
2	Printers are available for teaching.	2.11	1.05	Not Available
3.	Scanners are available for teaching.	2.03	0.67	Not Available
4.	Mouse are available for teaching.	2.40	0.87	Not Available
5.	Keyboards are available for teaching.	2.43	0.68	Not Available
6.	Flash drives are available for teaching.	3.31	0.99	Available
7.	Uninterrupted Power Supply (UPS) systems are available for teaching.	2.38	0.56	Not Available
8.	Multimedia projectors are available for teaching	1.69	0.62	Not Available
9.	Interactive smartboards are readily available for teaching.	1.17	0.91	Not Available
10.	CD ROMs are readily available for teaching.	2.57	1.11	Available
11.	Video players are readily available for teaching.	2.22	0.86	Not Available
12	Televisions are available for teaching.	1.97	0.87	Not Available
	Grand mean	2.26	0.84	Not Available

Table 2. Mean responses on the opinion of teachers on availability of software for effective TVET programme in tertiary institutions in South east Nigeria.

S/N	Item	$\bar{x}$	SD	Remark
13	Internet facilities are available all the time	2.16	0.98	Not Available
14	e-book available in libraries	2.01	1.13	Not Available
15	Knowledge of Tweeter	2.56	0.86	Available
16	Access to tweeter is available	1.88	1.34	Not Available
17	Knowledge of YouTubes,	2.78	1.01	Available
18	Access to YouTube is available	2.13	0.77	Not Available
19	e-mail addresses available	3.07	0.81	Available
20	Familiarity with Facebook	2.68	0.82	Available
21	Knowledge and access to CADs and it's equivalent	2.03	0.89	Not Available
	Grand mean	2.37	0.96	Not Available

teachers share divergent opinions on availability of facebook opportunities for e-learning.

Data in Table 4 reveal that the t-calculated value of 0.107 is less than the t-table value of 1.960 (t- critical > t-cal) at 0.05 level of significance. Consequently the null hypothesis was accepted this means that the opinion of the teachers on availabilities of e-learning opportunities was not dependent on experience.

DISCUSSION

In this study information has been generated on the opinion of TVET teachers over availability of e-learning opportunities. Research questions 1 and 2 looked for information on hardware and software respectively. These were designed to determine the opinion of teachers, on availability of e-learning opportunities for effective TVET programme in the tertiary institutions in South East Nigeria. The general results in Tables 1 and 2 showed the mean score of 2.12 and 2.37 respectively in the study revealing that hardware and software are not available for effective TVET programme in the tertiary institutions in South Ease Nigeria. This is in line with the opinion of Terande (2012) who said that a big percentage of the schools are unable to purchase some hardware for use by their pupils. Adeoye (2013) agreed with the result of this study as shown in Table 2 that most of the software are not available. Adeoye showed that teachers are ignorant of most of the tools that facilitate e-learning, such as e-mail, tweeter, and some chat tools. According to his work non availability of the software does not necessarily mean that it is not there but that the teachers are not aware of its existence even when most of their phones have such tools.

The grand mean score of the results in Table 3

Table 3. Mean responses on the opinion of teachers on availability of e-learning opportunities for effective TVET programme in tertiary institutions in South east nigeria according teaching experience.

		More experienced		Less experienced	
S/N	Item: There should be availability of	x	SD	x	SD
1.	Computer systems for teaching	2.17	0.87	2.21	0.94
2	Printers for teaching purpose.	2.11	0.86	2.19	0.88
3.	Scanners for teaching.	2.45	0.85	1.98	0.83
4.	Mouse for teaching	2.41	0.77	2.02	0.81
5.	Computer Keyboards for teaching	2.43	0.56	1.86	0.71
6.	Flash drives for teaching	2.98	0.97	2.84	0.80
7.	Uninterrupted Power Supply (UPS) systems for teaching	1.97	0.81	2.01	0.98
8.	Multimedia projectors for teaching	1.23	0.67	2.00	0.77
9.	Interactive smart board are readily available for teaching	1.83	0.97	1.09	0.87
10.	CD ROMs are readily available for teaching	3.18	0.52	3.60	0.89
11.	Video players are readily available for teaching	1.67	1.13	2.21	1.02
12	Televisions are available for teaching	2.12	0.87	1.97	0.73
13	Internet facilities are available all the time	2.12	0.87	2.34	0.81
14	e-book available in libraries	2.37	0.87	1.79	0.55
15	Knowledge of Teeter	2.50	1.17	2.76	0.67
16	Access to tweeter	2.18	0.86	1.92	0.81
17	Knowledge of YouTube	2.79	1.09	3.12	0.97
18	Access to YouTube	2.32	0.83	1.87	0.99
19	e-mail addresses	3.14	1.03	3.25	0.57
20	Familiarity with facebook	2.33	0.97	3.11	1.07
21	Knowledge and access to CADs and it's equivalent	2.76	0.66	2.56	0.65
	Grand mean	2.33	0.87	2.31	0.82

Table 4. Summary of t-test statistics testing the opinion of the teachers on availability of e-learning opportunities based on teaching experiences.

Variables	N	x	SD	df	t-cal	t-crit	p	Decision
Experienced	53	2.33	0.87	83	0.107	1.960	0.05	Accepted
Less Experienced	32	2.31	0.82					

showed 2.33 and 2.31 for the more experience and less experienced respectively. This means that in the opinions of both more and less experienced TVET teacher, e-learning opportunities were not available. However, item 20 showed mean ratings of 2.33 and 3.11 for more experienced and less experienced respectively. This means that the opinion of teachers on availability of facebook opportunities is influenced by their teaching experiences. Okafor and Ejiofor (2013) said that the use of e-learning resources has the capacity to enhance teaching skills which is increased with experience. This is not in agreement with result of this study which show that the less experienced are more familiar with the facebook more that the more experienced.

This indicates that in the opinion of the TVET teachers, the e-learning opportunities are not readily available for effective TVET programme. It does not necessarily mean that they have not seen or own these items but that the items are not meant for TVET programme.

This result is in line with the result of Effiong (2005) and Nwana (2012) that there is acute shortage of e-learning materials. They maintain that computers, printers, scanners, e-books, textbooks, workbooks and books on ICT are not available and not in use in Nigerian schools. Also, the findings agree with that of Seiden (2000) and Uhaegbu (2001) which revealed a low level of usage of ICT equipment and facilities in secondary schools. However, to compare with another area, the finding is contrary to that of Becker (2000) which found that US schools use computers and e-

learning facilities in all subjects. It is therefore feared that with the situation the possibility of optimizing e-learning opportunities for teaching and learning TVET will not be realized by this inadequacy. The question then is what exactly happens to the huge amount of money pumped into the system by TETFund and NEPAD as claimed. If really their claims are right, then people are enriching themselves with such monies. No wonder Adetokunbo (2013) stated that the Transparency International and Socio-Economic Rights and Accountability Project is calling on the government to look into the huge sums of money that are invested in the education sector and be serious about teaching children the value of honesty. It is better to note that corruption has a devastating impact on developing nations, and stands at hindering progress towards the Millennium Development Goals and can jeopardizes social and economic development of any nation.

It is right to conclusively assert that this study has revealed the opinion of the teachers concerning the availability of e-learning opportunities for effective TVET programme in South East Nigeria. These reasons could be that most of these teachers are not knowledgeable enough in using the e-learning tools like the multimedia, smart boards. It may be because of incessant network failure or no access to the bandwidth around the school environments that made them less interested. If such scenarios continue a greater gap will be created between Nigeria TVET graduates and their counterparts in the developed countries. This will definitely defeat the objectives of the federal government of vision 20-2020.

RECOMMENDATIONS

Based on the findings of the study, it is therefore recommended that,

1. ICT facilities should be provided in the classrooms and auditoriums in order to enhance web-based instruction. The government should have an understanding with the internet service providers (ISP) to provide internet services to schools. This will help increase the speed.
2. Capacity building programmes on the use of e-learning facilities should be conducted for the teachers to acquire the knowledge of ICT. A provision of in-service training of teachers, workshops, seminars, and conferences could accomplish this.
3. Teachers should endeavour on their own to develop and equip themselves without waiting for the government.

Conflict of Interests

The authors have not declared any conflicts of interest.

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Full Length Research Paper

Challenges of women in technical and vocational education: A case study of federal college of education (technical), Gusau

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This study investigate challenges of women in technical and vocational education; a case study of Federal College of Education (Technical), Gusau. The concept of technical and vocational education was discussed and review of related literature was done. The use of questionnaire to get data for this study was employed. Tables and percentages were used to analyze the data and chi-square was used to test impact of the variables and it was found that women in technical and vocational education face the challenges of financial constraint, sexual harassment, child birth during course of study and inadequate educational facilities/unqualified lecturers. These challenges have a negative impact on the quest of women in technical and vocational education. The study concludes that government should provide stipends, good learning environment and necessary educational facilities to women who are into vocational and technical education.

Key words: Technical, vocational, education, women, challenges.

INTRODUCTION

Education has been universally accepted as one of the catalysts for social, economic and technological development. In fact, no nation, which aspires unto greater heights, will easily neglect the need for the provision of education to all its citizens. Vocational and Technical Education remains a vital form of education that serves as foundation for the development of small and medium scale businesses, which is the launching pad for an industrial economy. National Policy on Education (FRN, 2004) defined Technical Education, in its Section 6, as that aspect of education which leads to the acquisition of practical and applied skills through the application of basic scientific knowledge and technology. According to Alam (2008) as cited by Ali Idris et al (2013), the knowledge of technical and vocational skills is the prime mover of economic and social development of any nation; therefore, investment in human capital is an investment for the future of any country. Education and training could be regarded as a bedrock for improvement and has to be problem oriented, person centered, community centered and should be able to carter for social problems which include unemployment, crimes,

poverty, health, drug abuse etc. Skill development and training is central to youth employment and enable the youths to be prepared for work in formal and informal sectors of the economy, and thus play important role in employment opportunity.

Because the government's emphasis that the girl-child is entitled to equal access to education as a human right, statistic shows that there has been a tremendous improvement in enrollment of girls at primary, secondary and at University education in Nigeria. But this is not the case in Technical and Vocational education; there are very few girls who enroll for vocational courses especially technical, because of the big challenges girls face at school and even in their places of work after qualifying.

Federal College of Education (Technical) Gusau was established in 1989, and academically took off in May, 1990. It is one among the colleges of education which offer technical and vocational education to its students who are basically female. Several provisions has been made by the government to provide conducive learning environment for the students such as adequate infrastructure, provision of tools and machines for practical's, social amenities, etc. But, In spite of all these, there are challenges that are faced by students of this college. Therefore, the aim of this study is to examine the challenges faced by women in technical and vocational education.

Hypothesis

H_o: The challenges of women in technical and vocational education have positive impact on their quest for vocational knowledge.
H_1: The challenges of women in technical and vocational education have negative impact on their quest for vocational knowledge.

LITERATURE REVIEW

Vocational and Technical Education is conceived to mean the provision of relevant and functional education, which would lead to acquisition of practical and applied creative skills. It allows the individual to be productive and resourceful, so as to make progressive contributions to societal development. Nnabua (1996) listed some pre-vocational subjects to include woodwork, metal work, electronics, mechanics, local crafts, home economics and business studies. Olaitan (1996) asserts that in Nigeria, technical and vocational education is offered at the secondary and tertiary levels.

Arikpo (2007) defined vocational education as that training which helps Nigerians to gain the needed skills and know-how for occupation. Omoruyi and Osunde (2004) further contribution on the advantages of vocational Education, assert that, it is capable of ensuring gainful employment opportunities to other members of

the society. It is pertinent to note that vocational education is a matchless and dynamic human resources development field of study. In effect, Dokubo (2010) revealed that numerous studies have shed more light on the relevance of vocational education programmes on the empowerment of rural adults and poverty reductions in River State.

Kolawole and Adepoju (2007) remarked that vocational education is the ability to use one's skills gainfully and display one's intellectual and economic horizon well enough to be able to effectively manage the many economic problems confronting individuals and the country as a whole. According to these authors, the state of affairs where many able-bodied men and women in the society are not gainfully employed in Nigeria, has led to various intervention efforts on the parts of the governments. This state of unemployment has made researchers to question whether the people are actually vocationally empowered. This is for the reason that, in a fast changing and unpredictable environment, fostering flexibility relies on solid general education and broad vocational skills which can be updated and completed through vocational education programmes (Kolawole et al., 2007). Vocational education, according to Arikpo (2007) is that education which assists Nigerians to acquire the necessary skills and competence for occupation.

Some studies suggest that girls and women receive less encouragement, experience and opportunities in these areas because teachers and school managers consider it a 'male' subject, for which women do not have skills, understanding or aptitude. Subsequently, girls are discouraged from following what are traditionally viewed as 'male' subjects of science, engineering, technology or maths subjects (Daniel and Zsolt, 2015). Attitude of teachers, classroom atmosphere and learning methods all contribute to constructing gender stereotypes which are reproduced by both teachers and students. For example, male and female teachers may reproduce traditional male and female roles in the classroom - female teachers may follow the 'supportive sympathetic' archetype, whilst male teachers follow the 'authoritative'. Other study finds that across ages that boys are given more attention than girls by teachers, although male teachers 'attention to girls is higher with older girls. Female teachers give more attention to the boys than girls whatever their ages. The writers conclude that unconscious gender related processes which may be aggressive or even 'libidinous' in nature may play a role in teachers' approaches to their students. Teachers' gender roles may be perpetuated via the teacher-training system. Research reviewed describes vertical and horizontal segregation in the teacher-training institutions, with more men in secure and senior positions in the institutions' hierarchies. Gender segregation, both vertical and horizontal is also found to be a factor in higher education institutions. For example, research shows the

subtle ways of expectations regarding how women dress and present themselves have a detrimental impact on women's career. Other research argues that management processes such as Quality Assurance in universities may contain 'disguised messages' which favoured male identities and which disproportionately disadvantaged female academics.

Challenges of women in technical and vocational education

Hodges (2000) stated that there is serious gender bias in terms of education against girls in Nigeria, especially in northern part of Nigeria. He further stressed that, 47% of girls aged 6 to 15 years are enrolled in schools compared with 63% boys. A lot have been reported on the low enrolment and attendance of females in vocational and technical education. Women and girls, no doubt, are the most influential but often neglected group in most African societies. This neglect, to a large extent has made women one of the disadvantaged groups in developing countries of the world, where they are marginalized on account of gender, social and cultural bias, as well as other stereotypes (UNESCO, 1992). The contention therefore, is that the way the society perceives woman especially the female child has placed a perpetual disparity between her and their male counterparts in respect to access to certain fundamental development opportunities; one of these opportunities is in the field of education. In some cases, parents do not want to send their daughters to school because they take care of the younger siblings and help in some household chores. Some families tend to be reluctant in sending their daughters to school for economic reasons. The daughters are involved in petty trading or hawking to support the parents due to poor background of the family (Saliba et al., 2008).

Imarhigbe (1992) while documenting on the state of vocational and technical institutions in Nigeria reported the lack of tools, equipment's, and infrastructure in some institutions. The teaching and learning environment has remained the same after so many years in many schools, while the existing equipment are fast getting worn out, in spite of the growing need for vocational and technical education. There is the lack of modern library complex, workshops etc (Ulinfun, 1999). The effect has been the increased lack of interest in the subject and the production of half-baked graduates. Some colleges that have equipment's lack trained skilled manpower to handle some of those equipment's.

The beliefs of parents are reflected on the educational aspiration of their female children for it is what parents believe that they will pass to their children. The present exploratory research attempts to address some of the gaps in the border literature identified by Rojewski (2005) by testing the nature of the relationships between female occupational aspirations, expectations, and aspiration/expectation discrepancies and traditional research variables of gender and occupational status, and extending this examination to include career development constructs, namely career decision status, career decision-making self-efficacy, the perception of barriers, the development construct of career maturity and career indecision. The family is the first place where the child learns the appropriate behaviors patterns, attitudes, and activities of female secondary school, and higher institutions are significantly influenced by distinctive youth culture found among them. Many of them left their homes as adolescent for secondary school where they lack parents' adequate cultural socialization to mix up with other youths, values, attitude and modes of behaivour. Significantly, most of these youth variables have considerable effects on their future vocational choices either positively or negatively. Prideux (2007) argues that, it is therefore important that these career constructs be examined in addition to the demographic, cognitive- personal and contextual variables that have received so much attention in the study of vocational choices. However, Lapan et al. (2000) reported that female seventh graders expressed higher self-efficacy when they believe that their vocational choices matched their gender.

Jatau and Davou (2000) reported that Islam is usually associated with female non-participation in the formal education as a result of the ignorance of some parents regarding the sound teaching of Islamic education. Some parents prefer sending their daughters to Qur'anic schools as reported by Odaga and Haneveld (1995) due to their belief that western education promotes values and behaviour that are contrary to Islamic cultural norms. Some believed that to allow girls to get mature before they get married leads to moral decadence as expressed by Biola et al. (2002). However, it is observable that moral decadence today is common both among the educated and the uneducated girls in the society.

Overcoming economic vulnerability embraces a much wider set of abilities than just conventional technical and managerial competency. These include basic literacy and numeracy, social and gender awareness and life skills. It is generally accepted that enterprise development and income-generating projects require a more complex combination of capacities with heavier emphasis on social and management skills than narrowly defined technical competencies (Bennell, 1999).

Traditionally, male-dominated artisan training courses (plumbing, metalwork, carpentry etc.) have predominated in Technical and Vocational Education Training (TVET) in most countries. Training for women was offered in a narrow range of traditionally female-dominated activities. Training in social and business skills has also been fairly limited; particularly for women (Mayoux, 2005). Fees and indirect costs of TVET represent an obstacle for the poor and often a complete barrier for the poorest, especially

Table 1. Distribution of the respondents according to their age.

Variable	Respondents	Percentages
Less than 20	35	29
21 – 30	66	55
31 and above	19	16
Total	120	100

Source: Field survey, 2015.

Table 2. Distribution of the respondents according to their marital status.

Variables	Respondents	Percentages
Married	38	32
Single	62	52
Divorced	15	12
Widowed	5	4
Total	120	100

Source: Field survey, 2015.

Table 3. Distribution of the respondents challenges in technical and vocational education.

Variable	Respondents	Percentages
Financial constraint	31	26
Sexual harassment	25	21
Inadequate educational facilities	23	19
Child bearing during course of study	26	22
Unqualified lecturers	15	12
Total	120	100

Source: Field survey, 2015.

for women. In Ghana, for instance, the majority of students come from relatively well-off urban backgrounds, even at government-funded vocational training centres in remote rural locations (Bennell, 1999).

METHODOLOGY

The data used for this study was gotten from primary sources through the administration of questionnaires. The questionnaires contained both closed and open ended questions. The research design for this study was descriptive research of the survey type. It aimed at finding the challenges faced by women in technical and vocational education. The population of the study was female students of Federal College of Education (Technical), Gusau, Zamfara state. The sample size was 120 female students. Purposive and Random Sampling Technique was used in selecting students of the school as respondents. The chi-square test was implored to check the impact of the challenges of women in technical and vocational education on their quest for vocational knowledge.

Table 1 shows the age distribution of the female students of Federal College of Education (Technical) (FCE(T)). It shows that 35 respondents representing 29% of the total respondents are below the age of 20. Whereas, majority of the respondents are within the age bracket of 21 to 30 with the number of respondents been 66 representing 55% of the total respondents. Very few of the respondents are within the age bracket of 31 and above with 19 of the respondents representing 16% of the total respondents.

Table 2 shows the distribution of the students according to their marital status. From the above it can be seen that 38 of the respondents are married, this represent 32% of the total respondents. 62 of the respondents are single, representing 52% of the total respondents. This is an indication that majority of the students of FCE(T), Gusau are not yet married. Of the 120 students of FCE(T) sampled, 15 representing 12% of the total respondents are divorced. Whereas, 5 representing 4% of the total respondents are widows.

Table 3 shows the challenges faced by students of FCE(T), Gusau. The table shows that the major problem faced by women in technical and vocational education is financial constraint with 31 representing 26% of the total respondents facing the same challenge. Whereas, 25 representing 21% of the total respondents

Table 4. Environmental influence on the academic performance of the respondents in vocational and technical education.

Response	Respondents	Percentages
Yes	78	65
No	42	35
Total	120	100

Source: Field Survey, 2015.

Table 5. Income status of parents affects the respondents in technical and vocational education.

Response	Respondents	Percentages
Yes	92	77
No	28	23
Total	120	100

Source: Field survey, 2015.

face sexual harassment from either the lecturers or non-academic staff of the institution. Also, inadequate educational facilities is another problem faced by women in technical and vocational education as 23 representing 19% of the total respondent attest to the fact that it is one of the challenges they face. The students who probably are married opine that child bearing during course of study is a challenge they face, with 26 representing 22% of the respondents yielding to the fact that child bearing constitute a great challenge to them. Another challenge is unqualified lecturers, as 15 representing 12% of the total respondents say they face a problem of unqualified lecturer, though this is the least of their challenges.

Table 4 shows that 78 representing 65% of the total respondents agreed that the immediate environment in which they found themselves has impact on their educational performance. Whereas, 42 representing 35% of the total responded denied the fact that their immediate environment has impact on their educational performance. Table 5 shows 92 respondents, that is, 77% of the total respondents attest to the fact that the income status of their parents has great impact on their quest for technical and vocational education. Meanwhile, 28 representing 23% of the total respondents said that the income status of their parents has nothing to do with their quest for technical and vocational education.

Table 6 shows the computation of chi-square. From the computation it could be seen that the chi-square calculated value is (X^2_{cal} = 5.67). When compared to the tabulated value (X^2_{tab} = 9.49) the calculated value is less than the tabulated value (5.67 > 9.49) indicating that there exist a negative relationship between the challenges of women in TVET and their quest for vocational knowledge.

Hypothesis testing

The chi-square test was use to ascertain the level of significance of the challenges that women in technical and vocational education are faced with. The formula for chi-square is:

$$X^2 = \sum \frac{(O - E)^2}{E}$$

Where: O = Observe frequency
E = Expected frequency
N = Number of observation
$\sum$ = Summation
X^2 = Chi-square
If $X^2_{cal} > X^2_{tab}$ the study accept H_o that challenges of women in technical and vocational education have positive impact on their quest for vocational knowledge. Otherwise, the study reject H_o.

df = n – 1 = 5 – 1 = 4   α = 5% = 0.05

X^2_{cal} = 5.67

X^2_{tab} = $X^2_{0.05}$ = 9.49

Decision rule

Since $X^2_{cal} < X^2_{tab}$ at 0.05 the study reject the null hypothesis (Ho) and accept the alternative hypothesis (H_1) that, the challenges of women in technical and vocational education have negative impact on their quest for vocational knowledge.

DISCUSSION

From the result it was discovered that the challenges of women in technical and vocational education have a negative impact on their quest for vocational and technical knowledge. The result of this research is in line with that of Nnachi (2008) who maintained that, barriers mediate negative consequences in the occupational career of females over males which was reinforced through circumscription and cultural belief that male are expected to perform better in science, mathematics and other technical subjects while females are more better in art subjects such as home economics, textiles, languages etc.

Table 6. Computation of X^2.

Variable	O	E	O – E	(O – E)^2	$\frac{(O - E)^2}{E}$
Financial constraint	31	24	7	49	2.04
zSexual harassment	25	24	1	1	0.04
Inadequate educational facilities	23	24	-1	1	0.04
Child bearing during course of study	26	24	2	4	0.17
Unqualified lecturers	15	24	-9	81	3.38
-	-	-	-	-	$\sum$ = 5.67

Source: Authors computation, 2015.

Therefore, the researchers believed that women should be encouraged to participate in the field of technical and vocational education for a better development.

CONCLUSION AND RECOMMENDATIONS

This study has investigated into the challenges of women in technical and vocational education a case study of Federal College of Education (Technical), Gusau. It was seen from the findings that the major problems of female students in technical and vocational education is financial constraint, sexual harassment and inadequate educational facilities. Those who are married face the problem of child bearing during their course of study. The environment and income level of parents has a great impact on the educational performance of female students in technical and vocational education. These challenges faced by women in technical and vocational education have a negative impact on their quest for vocational knowledge. Based on the findings of this research work, the authors recommend that:

1. The learning environment should be provided with essential physical facilities and appropriate social working condition that are free from tension and dangers to the lives of the participants and properties.
2. Combined efforts of donors, Governments and the private sector should be strengthen to achieve better quality in training and fill the gap of years of neglect, also with regards to certification of vocational training and skills training; Provide infrastructure support and facilities to improve the participation of rural poor and young women in training, including hostels, stipends, transport facilities, child care centres, tool kits;
3. Lecturers or facilitators of technical and vocational education should be well trained and as a matter of fact be an expert in their field. A lecturer who has no qualification in this aspect should not be employed.

Conflict of Interests

The authors have not declared any conflict of interests.

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