Exploring How Nigerian Women Portray their Position in Technical and Vocational Education

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Abstract
Globally many countries accept the fact that the field of technical and vocational education is a key factor to develop the country's economic growth, quality of life and job creation and women can play key role for its development. The government of Nigeria has been making efforts to increase the number of women in technical and vocational education in institution of higher learning to enable her creates employment opportunities for her citizenry. However, women are not embracing this opportunity by enrolling in technical and vocational education programs that will equip them with skills for self-reliant and contribute to national development. Opportunities for women in technical and vocational education field have remained relatively unexplored in Nigeria. A qualitative approach using phenomenological research method was adapted to gather data from fourteen women enrolled in technical and vocational education in Polytechnic institution. The aim was to get in-depth information about the phenomenon with the view of coming up with suggestions and recommendations that will improve the access and participation of women in this field. Phenomenological methodology was adopted and data collected were transcribed and analyzed to find themes and categories. Findings from this study revealed that participants enjoyed the program despite their experiences as were identified. Several conclusions were drawn to include stereotyping, intimidation, sexual harassment, among others as women's experience in male-dominated technical and vocational education at Polytechnic. A compelling finding is the perception of the participants that working hard and ignoring the biases of others reinforces their position in this field. Additionally, the technical and vocational education environment should be conducive to acquisition and development of technical and vocational education skills for women

INTRODUCTION

Globally many countries accept the fact that the field of technical and vocational education is a key factor to develop the country's economic growth, quality of life and job creation and women can play key role for its development. Before independence and some years after, most families in Nigeria laid more emphasis on the education of males than females. One gender group was favored over the other; not because of the groups' interest or abilities but rather because of believe concerning what role the gender group should play in the society. This discrepancy in education of men and women was inherited from the colonialism. Early educational curriculum was designed to train women as Nurses, Teachers, Clarks, Home Science or Trading. They were not in Medicine, Politics, and Engineering, Law and Environmental studies (Oyitso & Olomukoro, 2012).

Women constitute over 50% of the total population in Nigeria. Economically, women contribute 75% towards food production, 60% towards domestic food storage and food processing, 75% toward marketing and about 90% towards all households in Nigeria yet their training in technical and vocational education still lags far behind that of men (Anugwom, 2009). Most African countries have shortage of all kinds of qualified personnel in the higher education with shortage being in the sciences and technical related courses.

Present education policy in Nigeria allows for female enrollment in all programs including non-traditional women's program like technical and vocational education. This gives women equal access to education and training as men. In respect of gender specific roles influence in relation to students' psychomotor performance in technical courses Ayang & Edu (2012) holds that all along opportunities in technical and vocational education has been for men alone, thus creating an imbalance and inferiority complex among women. This is why the Common Wealth Association of Polytechnics in Africa (CAPA) sought to address this women experience in technical and vocational education by setting up Women in Technical Education (WITED) in 1998 with the main objective of enhancing attitudinal change in people and society in respect of the role of women in technical and vocational education as well as enhanced psychomotor competencies for national development. In line with the above, Ellis 1997 (in Ayang & Edu, 2012) asserts that there are many Nigerian women who are highly intelligent, but are not encouraged especially in the science-related and technical professions and thus not contribute to nation building. Few women students are into science-based and

technical profession because of the erroneous perception that such jobs/professions are male domain. Ayang & Edu, (2012) stated there is a lot of evidence of empirical studies towards the end of last century all of which emphasize the imbalances in representation and achievement of males and females in science, mathematics and technology.
The experience of women in technical and vocational education and science related courses are not peculiar to Nigeria as it is a global issue. Studies indicate that women are still generally underrepresented in higher institution in the field of science, engineering and technology (Ceci & Williams, 2011). A study of women scientists in the United Kingdom (UK) reveal that women are still underrepresented in the higher echelons of science, engineering and technology (Van Langena et al., 2006). Female students accounts for 31% of science, engineering, technology and mathematics graduation in the UK and 33% in USA ((Van Langen, et al., 2006). Similarly, Kishore (2008) reported on the dismally low representation of women in technology related enterprises and institutes of higher education in India. In Australia, women make up about 51% of the population which is almost similar to Nigeria yet they are underrepresented in technology related areas.
In Australia women in science, engineering and technology advisory group belief that continued underrepresentation of women in this field based education, training and employment ground is not only a cause for social concern on equality grounds, it is also likely to inhibit Australia's capability to develop internationally competitive research and industries (Bell, 2009). Although exact percentage across institutions are hard to come by South Africa studies reflect a similar trend, with the lowest proportion of female students in higher education found within the field of science, engineering and technology (Bailey and Mouton 2004).

In many countries, young women are more likely to be unemployed than young men, United Nation (UN, 2012). The marginalization of women in employment and training is a relevant issue globally given the potential impact on human capital, but particularly in those countries in which women constitute the majority of the population (Kabeer, 2005). Overcoming this imbalance between women and men in employment and training skill seems a long way off. Gender stereotypes "linking men with high technology" whereas women are "thought to be insufficiently professional and technically-oriented" remain to persist in almost all part of the world. Women "tend" to concentrate on a small range of mostly "typically female" or female dominated" occupations. Even in new skilled jobs in the information and communication technologies the gender gap is prevailing phenomenon.

Studies show that the number of female students entering science and technology related courses in secondary schools are increasing but female graduates in post secondary institutions are still in the minority (Egun & Tibi, 2010). Thus professional technical and vocational education courses in Nigeria as in other part of the world have always been male dominated. The role of women in economic development of a nation cannot be ignored and it is therefore significant to understand women position in technical and vocational education that has lead to few women in this field. It is important to promote and encourage women to take advantage of the global demand for skilled labor to participate in technical and vocational education, thus this study using qualitative approach to interview female students in technical and vocational education to understand their position as to why few women in this field in Nigeria.

CAREER CHOICE
Working to earn a good living in the modern world is as important to women as it is to men. The economic and social prosperity of Nigeria depends on fully utilizing the skill and contribution of all citizens including women. Labor supply in Nigeria today is characterized by abundance of unemployed and underemployed workers, most in the agricultural and informal sectors, low productivity, and by serious shortage of skilled workers and technicians in the industrial and service sectors.

International agencies have estimated that Nigeria needs 230000 engineers and 920600 technicians to drive its economic growth. However, only 11000 engineers are currently registered with the Nigeria society of Engineers (Ola, 2002).According to FRN Appraisal report (2005) women participation in most scientific and technical occupation (architects, engineers and others) is estimated to be less than 10%. The new global economy increasingly demands more high- skilled and better educated workers than ever before. While more women are working than ever before, many do not have the skill necessary to obtain the high-wage jobs needed to adequately support themselves and their families (AAWU, 2010).

American Association of University Women (AAUW) believes that career and technical education (CTE) is increasingly important for women and girls seeking to earn their way in a competitive market place. According to IFUW report 2010 studying science and technology will lead to better paid employment outcomes and increase women's financial independence and security. Salam (2010) opined that knowledge of science and technology is essential to understanding the modern world and without it, it is impossible for women to participate in informed

decision-making on many social and political issues. Global employments indicate that women workforce is on the increase. Women however, tend to settle for low and middle level jobs. This is because factors such as inadequate formal education and occupational skills, limited occupational horizons, traditional and social prejudices, male chauvinism of employers, sex discrimination and concomitant sex role expectations affect women career choice.

Design of the Study

In qualitative research design can be thought as the logical progression of stages or tasks from problem formulation to the generation of conclusions that are necessary in planning and carrying out a study (Maxwell, 2008). Ritchie & Lwis (2013 p.47) state that is one which has a clearly defined purpose in which there is coherence between the research question and the methods which generate data that is valid and reliable. It gives direction from the underlying philosophical assumptions to research design and collection. Yin (2003 p.19) adds further that colloquially a research design is an action plan for getting from here to there, where 'here' may be defined as the initial set of questions to be answered and 'there is some set of conclusions. Bogdan (2003) states that it is the entire process of conceptualizing a problem to writing research question and data collection, analysis, interpretation and reporting.

When the understanding of an event is a function of personal interaction and perception of those in that event and the description of the process that characterize the event, qualitative approach is more appropriate than quantitative design to provide the insight necessary to understand the participants' role in the event and their perceptions of the experience. The purpose of this study is to explore without the manipulation of the experience of Nigerian women in male-dominated technical and vocational education in the natural setting with the view to interpreting phenomena in terms of the meaning individuals attach to them.

The processes of this study method included investigating, observing and documenting in detail the unique experience of individuals in the male-dominated technical and vocational education. The approach allowed the researcher to collect 'thick narrative description of the phenomenon under study and gave the researcher the opportunity to take into account the views expressed by the participants and important detail of group interactions and multiple interpretations in the group's natural environment. This qualitative description of their experiences and an inductive analysis of data is most appropriate for the purpose of this research because all these procedures enhanced the possibility for some kind of objectivity which could have been lost if quantitative or experimental strategies were applied (Onwuegbuzie & Collins, 2007)

Sampling

Sampling for this study was driven by the desire of the researcher to learn in detail and in-depth about the experience of individuals. Purposeful sampling is appropriate for use when the author needs to select a sample based on his knowledge of the population, its element and the nature and purpose of the research aim (Creswell, 2012). In this study fourteen women were used in accordance with Merriam (2014) who suggested that in phenomenological research five to twenty five participants are accepted. Merriam maintains that the small sample size will enable researcher to have an in-depth understanding of the study phenomenon and not seek statistical generalization. The criteria used to select study participants are that they have to be women in technical and vocational education, they must have attended primary school for six years, attended a junior secondary school for three years, attended a senior technical college or senior secondary school for three years, have Ordinary National Diploma (OND) certificate in technical and vocational education field from government approved/recognized institution both within and outside the country, have had at least one year work experience before returning to the institution for Higher National Diploma (HND) in technical and vocational education and must be in the first or second year of HND

Data Collection

Through semi-structured in-depth interviews the researcher attempted to get information about the experience of Nigerian women enrolled in technical and vocational education as to why the misrepresentation of women in technical and vocational education at the Polytechnic institution. The open-ended question adopted afforded an opportunity for both the researcher and the participants to discuss some topic in more detail. The researcher invited the participants to tell him their experience in this field. As the discussion progressed the researcher adopted counseling skill conversations as well as paraphrasing, probing and reflection to develop the discussion in line with the research objective (Martin,

2013). Subsequently, the researcher conducted fellow-up interviews to either elaborate or confirm emerging themes and categories and their meanings.

Data Analysis

The qualitative hermeneutic data analysis was used for this study. Data analysis involves examining of people's words and trying to make explicit the knowledge that is in them (Pope et al., 2000). Analysis of the participants' open-ended responses formed the basis for interpreting and finding meaning from the participants experiences. The process of data analysis commenced when the researcher finished his first interview. The analysis of data in qualitative research is a hand-on process that requires the researcher to commit fully to understanding what the data say. The data collected in this study were analyzed inductively and continuously during and after each collection of data. Qualitative researcher constructs a picture which takes shape as he/she collect and examines the parts. The most suitable model for data collection and analysis is one that interweaves them from the beginning (Maguire, 2008). The data analysis for this study involved examining, sorting, categorization, evaluating, comparing, synthesizing and contemplating the coded data as well as reviewing the raw data and recorded data. The author adopted eight steps suggested by (Hennie, 2009 p.98) as a guide in coding his data.

Even though the model portrays step-by-step procedures, in practice all the procedures work simultaneously…" and the author kept doubling back for more collection and coding" (Jones, 2011). The basic strategy the author adopted was to constantly compare the data gathered. The author conducted an interview, made field notes, reviewed document of one incident, and then later compared it to another incident either the same set of data of different set. This led to the formation of tentative categories, which were compared to each other, and also to other instances. The flexible nature of this model resulted in the development of tentative categories and themes. However, the coding and categorizing were finalized only towards the end of the data collection

Data for this study were collected and constantly analyzed as they came in until the eight focus group and seventh one-on-one interviews were conducted and there was no more new information and no new themes or categories had emerged. According to Creswell (2012) this point is called the saturation point where there was no more new information or insights that can be found from the data, the data collection was stopped as saturation has been attained or reached.

FINDING

The research questions were formulated to examine how Nigerian women portray their position in male-dominated technical and vocational education. Participants for this study were generally asked to describe how they portray their position in male-dominated technical and vocational education. The specific question asked is generally very open in nature, with follow up discussion being led not so much by the researcher, but by the participants. The way in which participants narrated their positions showed that Nigerian women had varying experiences. However, the participants, perceptions converged on several points and gave rise to several major themes. The categories were compared between participants and data were further reduced into major themes that best described the position of the participants. These comparisons were tied together to make a description of the participants position. Eight themes emerged from research question one that linked the position of these participants. These were categorized and described as follow, Physical ability, Lecturer preferential treatment of male students over female, Sexual harassment, Inadequate instructional facilities, Masculine image, Stereotyping, Dearth of women in academic/administrative position in technical and vocational education, Gender deprivation by male counterparts**.**

Physical Program Ability

Majority of the participants expressed the difficulty involved in technical and vocational education program when compared to courses in social sciences or liberal arts. The noted that they do things in technical and vocational education that is difficult as a woman. Some practical works they engage in are not easy because they do not have the strength as compared to the men. Some of the participants allude to technical and vocational education as being difficult because it involves working under harsh weather condition in most cases. Some of the participants stated that women are fragile and do not have the strength to withstand the rigor involved in technical and vocational education programs.

As one participant noted when women access the practical work and other activities associated with technical and vocational education they feel they are not physically strong to do it. The feeling of this study group is that a lot is

involved in TVE program as they noted that it takes hours and hours of home work every day. They don't have free time, no room for relaxation; can't watch TV and movies because of homework and other assignments in the program. Participant N11 found her experience to be much more in-depth than what she originally perceived and had this to say: *"I know science related courses are hard but I found this program to be harder than what I anticipated but with courage from a lady friend who passed through the program and determination I am able to reach where I am now"*. Participant N6 stated: *"it has been hard coping on the journey in this technical and vocational education program. The journey in this profession is not easy. There are some lecturers that doubt my ability to scale through in the program"*. Another participant stated that her remaining in the program is as a result of encouragement she received from friends who graduated in this field. They were like mentors to her. Participant's position indicates that technical and vocational education is difficult for women however according to them with determination and encouragement women should succeed in the program.

Lecturer Preferential Treatment of Male Students over Female

The feeling of this study group is that the attitude exhibited by some lecturers and their colleagues gives an impression that women are not expected to be in TVE field. Some of the participants expressed surprise most especially among their lecturers whom they feel went through TVE program and should be accommodative of women in the field yet some of them treat them with distain, however they see it as one of those challenges as a minority in the program. Participants indicated that some lecturers were biased against them during lectures and workshop practice. Some participants expressed that during lectures and workshop practice that lecturers often expect the male students to provide answers to their questions and live an impression to them as female students that they have to study hard to get the answers.

Sexual Harassment

Harassment has generally been a significant issue with women in either male-dominated work environment or academic environment. The study participants were unanimous on the issue of sexual harassment which they claim manifest in different form. Some of the participants said it was common in institution and mainly in male dominated work environment. The study participants stated that females experienced sexual harassment in different form from their lecturers, industry base supervisors and even their male colleagues wanting to go out with them with the promise of paying in kind or cash.

Some of the participants mentioned that such an act was likely to dent one image and reputation. Some participant's spoke of their encounter with either their lecturers, industry based supervisor and their male colleagues. Many of the participants noted that lecturers pressurize women and in most cases threaten to fail women that refuse to accept their offer. A participant recalls when she was treated intolerably by her lecturer

> In my National Diploma (ND) 1, a lecturer sexually harassed me. He wanted to go out with me I refused. Envisaging what was going to happen I reported the matter and nothing was done. When nothing was done I said to myself Ok I may fail this lecturers' course. I didn't fail his course but I ended up failing two courses which I know I am good in those courses. In my investigation I discovered that these lecturers were friends to the lecturer that harassed me sexually. These are some of the problems women contend with in program however, the solution to this harassment is hard work by women.

Most participants agreed that sexual harassment exist and that it should be addressed as it affect women's academic progress. When asked what they did when confronted with the problem. The participants expressed different views however, majority of the participants said they will keep it to themselves so that they lecturers will not fail them or be a victim of victimization. One participant went further to say that most times *"we pray over issues like this, we are diplomatic in the way we deal with male lecturers on the issue of sexual harassment"*. Another participant mentioned that male colleagues try to lure women into a relationship as a result of assistance the render to them (women) academically. From the stories of participants, women in technical and vocational education or male-dominated profession or field experienced contrasting side of treatment from their lecturers, or supervisors or colleagues, being harassed. Harassment often resulted from the lecturers or teachers and supervisor wanting to seize the advantage of women in this field believing that women cannot do well in the profession and feel that among the ways of accommodating them is to request for favor whereby they pay in return.

Inadequate Instructional Facilities

Some participants expressed lack of equipment for academic learning. Some participants stated that there is no sufficient practical work and that women do better when they are involved in practical work. Some participants noted that lack of learning facilities affects every student in the program however, girls are more delighted in a program were they have the learning facilities available and thereby reducing their spending on learning materials. According to these participants learning facilities are lacking in technical and vocational education as much is require in buying learning materials.

Many of the participants expressed their position in TVE as to lack of leaning materials that has hindered practical activities leading students spending a lot of money to purchase learning materials on their own. Some of the participants maintained that they bought most of their textbooks, including drawing instruments and even sometime their practical materials. There is nothing the school is offering them in terms of equipment and practical materials. According to the participants this creates some economic hardship and not many female students can afford it.

Masculine Image

Majority of the participants in this study cited issue of image as being particularly pertinent with reference to female position in technical and vocational education. In narrating their position in TVE, majority of the participants stated that they had to work hard to fit into this male-dominated technical and vocational education. According to participants most girls/young women associate technical and vocational education to men because to them it is hard. The see it as men's profession because it involves a lot of practical work and some emphasized that woman is not brought up to engage in stressful activities.

Some participants expressed that Africans believe that women or females do not have to go into technical and vocational education (TVE). They noted that being a woman you are treated as such and that the African culture has already reduced women to the background, being a wife to race children and carry out domestic activities. The participants also said that they were aware of some attitudes exhibited by their male colleagues and that some were arrogant and had the feeling or impression that women were not suppose to be in the program. Participant #6 in recalling her experience in the program had this to say:

> I could recollect in my first and second year in this program, there were a lot of my male colleagues who were so arrogant and discouraging and they had the feeling that women were not suppose to be in technical and vocational education program. This really made me to be furious however, it made me to work harder. As we progressed into Higher National Diploma (HND) 1, they male colleagues started to accord me some respect understanding that I could be in the program.

Another participant said that even some workshop attendants were not left out with regards to attitude towards female students in technical an vocational education as she said that some workshop attendants still were not appreciative of women and that they have the nation that being a woman one is not suppose to be in the program and they behaved differently to women when they go to collect tools for practical work.

Participant N11 also expressed some attitudes of some of the workshop assistants to female students which leaves an impression that women are not suppose to be in the program as she has this to say:

> In the workshop practice they may give us an assignment, this an assignment everybody is supposed to do on his/her own. Instead of everybody doing his/her own, as a lady you want to collect tools from the workshop attendant they will tell you that you should not worry they will just assign it to other person. You want to do your work as a woman but they will not allow you to do it. They will say that you will hurt yourself and they don't want to be responsible for you being a liability to them. They don't want you to spoil their instrument. You know you can do it, everybody know you can do it. If you try to insist it looks like you are trying to be stubborn.

Participant N13 spoke that some lecturers are not left out in the impression that TVE is for the men as she pinpointed how a lecturer made it clear to her that TVE was not meant for women because to him he thinks it is only men that are supposed to be in the program. The feelings of the participants are that because of this masculine image of the program it has affected women who have decided to go for social science courses.

Stereotyping

According to some participants in this study they were looked at differently and treated differently in male-dominated technical and vocational education environment. The participants claimed that they had "unfair treatment" in their academic environment and where they had their industrial work experience. They stated that they were not given equal opportunity to perform and that more preference was given to their male counterparts. Majority of the participants' thought stereotyping affected their confidence and the passion they have for technical and vocational education.

Many of the participants all lamented on the attitude of their colleagues and supervisors not believing in their ability and competence to do the job because they think they are women. They reflected cases of discrimination which they expressed as they were less trusted than the male counterparts and by their work supervisors. One participant stated: *"I have to put in extra- efforts to prove to my supervisor that I was competent before he could give me* the *opportunity to carry out some field assignment"*. Another participant recalled a situation in which she was not treated with confidence when she tried to participate in electrical installation project during her industrial work experience. *"Each time I tried to participate, the site manager will not allow me saying you are a woman you will hurt yourself. He gave the opportunity to the "guys"*.

Participant N11 tried to compare position of others to the college environment and summed up that the treatment was similar.

> In the workshop practice they guys will discriminate against ladies because they fill you cannot do it. The culture in workplace and school environment need to change, women should be given the opportunity to perform because they think we don't know much as the men. Our male colleagues will earn respect about their work both in the workshop and classroom more easily while as a woman you have to show that other colleagues agreed with your opinions.

Participant N13 who expressed discrimination in the job assignment said:

> Most time the stereotyping is obvious. In some cases like if you are in the workshop. Even if all of us are students they still feel like treat us differently. They don't give us the same task. Our task as females is cheaper. When we are in the workshop and we are given practical work they ask the males to do it for us. Even if you want to do it yourself they will tell you that they cannot carry any responsibility for you getting hurt as a woman. This is something you know you can do and something we all came to learn yet they see us differently because we are women.

One participant stated that a lot of the trends and processes and support that are given to men contribute to male lack of confidence or doubt about female competence in this field. All the participants acknowledged that TVE was male dominant and a barrier for Nigerian women in higher education. It appears that many of the activities which compose a TVE jobs are inappropriate in terms of the often becoming images of femininity that abound within the male-dominated TVE field and within society at large. This can lead to a mistaken believe that women are incapable of performing the necessary tasks.

Dearth of Women in Administrative Position

Some of the study participants stated that their position in TVE is the lack of women in the field. According to some participants the lack of women in academic and administrative positions gives male students advantage over the women. Participants suggested that more Nigerian women are needed in leadership and administrative positions in TVE and other technical related programs. It was a general consensus among the participants that more Nigerian women are needed in this field to afford them the opportunity of those they can relate to and identify with.

The participants all agreed that there is the need to have people they can relate to and share their feelings and experience. A participant lamented on the absence of female lecturers in technical and vocational education institution of higher learning and had this to say:

> When you go to all the departments in technical and vocational education, there is no single female lecturer or a head of department. I am disappointed that they don't have female lecturers in technical and vocational education and even in any institution where they existed they were so few in number. As a lady we don't have persons to take our problem to. There is no doubt we have male lecturers but they

> see our problem from male perspective. If we have women lecturers it will be easy for us to interact and share our burden in this program.

However, one participant said that where she did her Industrial Training (IT) the department was headed by a woman and she gave her fantastic opportunities and provided outstanding support.

Gender Deprivation by Male Counterparts

The attitude of men in the class as pinpointed by study participants is discouraging to them women who feel they don't have equal say because the men have seized the advantage of their numerical strength to dominate activities in the class depriving them the opportunity of making their own contributions. Some of the participants expressed intimidation in the class by the male colleagues which they said affects their confidence and moral in the program. Participants were intimidated in different form by their male colleagues. Some participants stated that being the only woman you don't feel free to ask questions in the class because of the reactions of their male colleagues who sometimes shout them down. They murmur and sometimes make nasty and derogatory comments.

Some participants expressed the feeling of oppression in the class by their male colleagues. Participant N3 stated *"In most cases as the only woman you tend to hide yourself. If you are insulted by your fellow male colleague you keep quite because you are the only one"*. This is what participant N5 had to say on female experience in the classroom:

> Imagine in my department where we have about one hundred students with only three women. You find the men dominating every activity in the class. The lecturer does not pay attention to us women. When questions are asked in an attempt to make your own contribution they men will try to oppress us by shouting on you or saying things that are not pleasant. Some will tell you to sit down expecting you to come to them after class. Well all these happen because the men know they are more in number. If we have equal number of women, we would be in position to challenge them but because of the situation we women find ourselves one tend to tolerate to be able to fit into them.

A participant said: that all these behaviors by their male colleagues in the class flourish because it is condoned by their lecturers. As woman in mix of these "guys" they have to develop "armor plate" It is the feeling of participants that in order to attract women into male dominated technical and vocational education the culture in the class environment has to change. The men need to be educated on this issue because they paid to acquire the same knowledge and where one group try to oppress others because of their numerical strength do not speak well for conducive academic environment.

DISCUSSION

Physical Program Ability

Participants indicated that their position in male-dominated TVE field is the difficult of the program and feel that it is better done by males. Women conception about science in secondary school leads them to believe that technical and vocational education is difficult. Participants beliefs that math and science were an important factor in the decision of young women to enroll or pursue careers in science, technology, engineering and mathematics (STEM). This echoes Kithyo & Petrina (2002) studies that found that people belief about technical and vocational education courses like engineering, architecture etc. are for men and that women have accepted these stereotyping expectations from the society. Several of the women in this study felt that TVE was male-dominated field and barrier for Nigerian women in higher education. Women perception about science and technology (ST) has been socialized to see ST as a field that is difficult and suited to male brains only (Nsofor, 2001). The author suggests that there is need to actively de-socialize boys and girls right from their early ages.

Lecturer Preferential Treatment of Male Student over Female

There was a feeling by participants that they experienced a discouraging attitude of teachers and counselors towards their buildup to their career choice. Teachers and counselors discouraged girls and young women from taking technical courses. They want these girls and young women to enter field considered "proper for women". Participants noted that women in general were persuaded to pursue courses leading to teaching and nursing.

The participants also noted that lecturers paid more attention and interacted more with the men than the women an impression that the girls need to work harder. The participants expressed that this affect their passion and interest in the

program. This is consistent with study by Ossi (2011) which found that encouraging teacher-student relationship was mentioned by all male students as one of the main element in developing interest in technology. It is clear that teacher has a very big role to play for their students and the students also demand a lot from their teachers. The action of the teachers as noted by participants indicates that some teachers are mainly stereotypes and these teachers should understand that these students are in their prime of their schooling which naturally will determine their futures and the career they will choose.

Participants also noted that male lecturers do not treat male and female students equally. It is shown from findings that this unfair treatment affect women's confidence and moral in the program. Research discovers that males receive more teacher attention than female students. However, all these treatments of male teachers are as a result of the misperception that women are not supposed to be in technical and vocational education program. To correct this misperception so as to attract more women in science related field, Hoh (2009) using notable women in environmental engineering to dispel misperception of engineers, the author carried out with 72 high school science teachers enabled them to overcome their stereotypical perceptions of engineers. The activity introduced them to notable women in environmental engineering, and raised their awareness of these female engineers' contributions to engineering and society. The result revealed that the activity was effective in countering high school teachers' misperception of engineering. Teachers and Professors can use the examples of these notable female engineers as role models to inspire their female students in technical and vocational education.

Sexual Harassment

Sexual harassment has generally been an important issue with women in academic environment, whether in a male-dominated work environment or not. The research findings from this study participants, reveals that sexual harassment is one of the most endemic problem confronting women in Nigerian institution of higher learning. Findings reveals that women in male-dominated TVE environment has been exposed or subjected to unwelcome sexual advances by their male lecturers, supervisors and request for sexual favors by their male colleagues or peers. It is a chronic stressor that profoundly and negatively affects the lives of these women (Huerta et al., (2006).

Despite worldwide prohibition, unwanted sexual attention is an unavoidable condition of work and education for significant number of Nigerian young women. This act has the effect of substantially interfering with female students academic and work performance creating an intimidating hostile or offensive academic and work environment. Jordan et al., (2014) study also arguments substantial extant evidence that sexual harassment has a deleterious impact on college women by adding academic impairment to negative health and mental health.

Given the negative effect of sexual harassment at individual (e. g. psychological well- being) and participant story that there is need for TVE environment to take action to eradicate harassment and make male-dominated technical and vocational education learning environment safe and fair to women (Holland & Cortina, 2013) by creating awareness on the behavioral manifestation of sexual harassment. Both students and lecturers should be enlightened on the different behaviors that could be interpreted as sexual harassment. This is important because an act which a lecturer takes to be a joke or plan can be harassing to female student. Both lecturers and students therefore need to be educated on behaviors that constitute sexual harassment and those that are not. Also the adverse effect of sexual harassment should be made known to all and sundry.

Findings from study participants also show the need to create effective reporting procedures. Study by (Ladebo, 2004), have shown that sexual harassment continue to spread in institutions of higher learning in Nigeria because victims are always afraid to making reports. Therefore, the creation of effective reporting procedures should be made known to both lecturers and female students and victims should be protected from further harassment. Also confidentiality is highly necessary in handling this problem

Most significantly too, counseling centers should be established in every institution of higher learning in Nigeria to help students who are sexually harassed and those having related problems. These centers should be a source of interacting or communication link between the students and the administration. Through this forum, the institution could be made more aware of female student's problems (and need) such that necessary supports are promptly provided.

Inadequate Instructional Facilities

Among the position of Nigerian women in male-dominated technical and vocational education as revealed by participants is inadequate instructional facilities. The participants also expressed that the lack of putting into practice the theoretical aspect of the classroom learning into practical application has created academic difficulties which are obstacle to women participation in this field. Studies show that quality of school facilities contribute to student's achievement in science and technology (Uline & Tschannen-Moran, 2008). Freedman (2002) stresses that equipment and laboratories learning materials are vital to student's education in science subjects both through directly educating students about area of science and technology and making them become more interested and enthusiastic to continue to study science and technology subjects. Modern well equipped laboratories and workshops are likely to influence women perception of science, engineering and technology (Freedman, 2002).

Poor facilities as found in the classrooms, workshops and laboratories prevents workshop practice and science work been undertaken and damaging the perception of technology in the minds of these young Nigerian women. Study show that women are more likely to participate in technical and vocational education when their environment is conducive to teach (Lyons, 2001). Similarly in his background paper for the education for All Global Monitoring Report Baudino (2007) raised the issue of school and classroom environment in relation to gender equity. He concluded that in African schools the "parlous state of school facilities" is significant obstacles to girl's enrollment. The Polytechnic institution of higher learning can only develop the right caliber of manpower to meet the country's future needs by providing learning facilities that promote rigorous scholarship.

Masculine Image

The majority of the participants indicated that TVE in Nigeria is a male-dominated society. Some participants expressed that Africans believe that girls/young women do not have to go into technical and vocational education (TVE) because it is masculine and better for men and this may have accounted for the misrepresentation of women in this field. The fact that technical and vocational education profession is perceived as male course has consequence for women desiring to enroll in this program. A participant recalled her experience while trying to make a career in technical and vocational education:

> I remember my teacher in my secondary school class who was not encouraging to any girl going into any technical course or science related course because that it will be too hard for us but like me when I wrote my West African Examination Council (WAEC) I had a good result in my science subjects and he tried to discourage me from going into any of these technical programs. I finally made it into this course. So I would advice that let nobody discourage you from going into vocational technical education or science related courses in higher institution of learning. There is no doubt it is male dominated but it does not mean you cannot do it because you are a woman.

The essence of what participants convey is supported in the literature. Duffy et al., (2001) posited that the stereotypical image of technical and vocational education or science, technology, engineering, mathematics (STEM) boring masculine counts for the lack of female interest in this field. Similarly, Lohan & Faulkner (2004) study on masculinities and technologies notes that the issue of misrepresentation of women in this field is as a result of male domination (numerical or structural) and assorted cultural masculinity of technical and vocational education classes and workplace and symbolic intertwining technical and vocational education and hegemonic masculinity. Lohan & Faulkner (2004) asserts that the male dominance of TVE is sustained in part by a wider cultural making of TVE as masculine. As a result of the dominant association between traditional notion of masculinities and technical and vocational education and science related programs Bagilhole et al., (2002) notes that women are seen to be unsuitable for STEM profession. Layton as far back as 1993 supported this notion. He argued then that technical and vocational education is perceived as a masculine preserve, not a place for women, who are relegated to role of users and consumers. In order to increase enrollment of women in TVE program at the polytechnic, perception of the gender of individuals in the field need to be addressed at the senior secondary school level.

Stereotyping

The argument, that women encountered consistent stereotyping in male-dominated technical and vocational education environment is among factors preventing women from considering technical and vocational education and other technical oriented programs as a career is declared and proved in the majority of the related literature regarding women in nontraditional occupation (Adya & Kaiser, 2005; Blickenstaff, 2005; Egun & Tibi, 2010; Woodfield, 2007). The respondents indicated that the gender stereotyping was subtle in form. These respondents or participants were not allowed full participation in workshop practice and technical and vocational education environment. Participants shared their encounter with this kind of discrimination where their colleagues and supervisors did not believe in their ability and competence to do the job because they think they were women.

Gender discrimination in TVE may result in lower feeling of acceptance and this could limit chances of obtaining social support from supervisors and peers (Wentling & Thomas, 2009). Fassinger et al., (2004) in their study of academic women in the chemical science pointed out that the micro-inequalities-small devolutions of women that may appear insignificant in isolation add up overtime and result in cumulated disadvantage for women. Each of these forms of differential treatment reinforces stereotypes of the appropriate behaviors and roles of boys and girls. Consequently, they convey the message that one ought to engage in appropriate behaviors and ought to aspire to sex-appropriate adult jobs. Egun & Tibi (2010) posits that sex-stereotyped occupations of the male over the female is a culture which has reinforced the notion of women into believing that technical and vocational education is an occupation that is preserved for males.

Dearth of Women in Administrative Position

The study reveals that the small number of women in TVE learning and work environment result in a situation in which women find themselves the only women in that environment. Furthermore, participants also stated that technical and vocational education institutions/organizations hardly recruit women into management position which has left them with nobody to identify with and share their feelings. This participants noted sends a wrong signal to girls and young women desiring to enroll into TVE and other technical related programs that they are not welcome. Study participants incur difficulty finding individuals that they can identify with or discuss their feeling with or have similar interest. Study by Mattis (2005) support the absence of women in leadership position in technical and vocational education field leads to isolation and exclusion and support network which have been identified as some of the key factors that stall women's interest in this field.

The fewer women in these roles, the more likely is that a male peer with equal experience and training would be seen as the more appropriate fit for the technical and vocational education. The isolation of women in TVE makes it difficult for them to form the same informal network that is formed by men. Often times this network not only provide support and encouragement, but also help advance women through their career. Gabbert & Meeker (2002) emphasize the need for network or support group for women in TVE as women are becoming more misrepresented in this field.

Gender Deprivation by Male Counterparts

Findings of this study reveal that the atmosphere in technical and vocational education environment are full with comments that are sexist in nature and whether they are intentional or not have the effect of making women in technical and vocational education feel undervalued and unwelcome. Participants revealed that intimidation by male colleagues created problem that affects their confidence and moral in the program. Study by Rose (2007) found that females that were intimidated by males in male-dominated work environment made the women feel like outsider and hindered their career development.

For girls to develop and experience new identities as technical and vocational education students within their institution, department and class, there should be shift in ways in which they talked about and negotiated their own gender identities with teachers and their male colleagues. Some participants for this study significantly become increasingly vocal about what they saw as inequitable by their teachers. In her study, why are There Few Female Computer Scientist practices in daily operation of their male colleagues as well as those they were subject to? Spertus (1991) reports that female undergraduates and graduate students majoring in science, math and technology face an onslaught of sexist comments throughout their college experience.

There is a chilly climate in technical and vocational education classrooms as experienced by participants. This kind of academic environment undermines female student's self-confidence and feeling of legitimacy in TVE and other technical related programs. Not only does the environment affect women's choices of majors, but women who decide to major in TVE are more likely than their male counterparts to change to a non technical and vocational education majors. Haynie 111 (2003) maintains that boys/men should endeavor to avoid saying things which call attention to the gender of female students or colleagues and to only emphasis the abilities and attributes which make all people valued with the profession. Therefore, creating a better classroom climate or environment for women in TVE will promote a better learning environment for all students.

Recommendations

Increase marketing of TVE program may alter the misconceptions about the program. Making society aware of the altruistic aspect of TVE through advertising and pre-vocational or vocational outreach programs will make technical and vocational education more appealing to all, but especially women. Making members of the general public and educators of these young primary school pupils and secondary school students to gain an understanding of TVE and how it contributes to our quality of life should become a high priority for various organizations like the Ministry of Women Affairs, Ministry of Education at all levels government and other agencies. Government and various agencies should provide scholarships and support for technical and vocational education and other science-related outreach in primary through secondary initiatives aimed at improving the public perception of vocational technical education. There should be a program in TVs and print Medias that is meant to get viewers and readers exited about technical and vocational education. There is need to include TVE principles early in the curriculum so as to expose girls and boys to real applications for science, technology, and mathematics.

Administrators should strive to inspire more females to enter childhood education so that positive female role models are available to females in balance with the positive male models that are available to males. Institutions of learning need to have zero-tolerance for rude behavior and rude remarks. Participants in this study provided a number of examples of classroom climate that were unwelcoming. Unfortunately, their examples include both department and students' comments and behaviors in and out of the classroom. Institutions of higher learning should convey to the department that it is their responsibility or duty to create the expectations that sexist behaviors and comments in classroom as well as outside classroom will not be tolerated.

The study found that Nigerian women view TVE field in a distorted and stereotypical manner. In order to change this perception there is a need to introduce TVE program to women students in all variations at the school level, especially in the senior secondary school. Women role models in TVE should be made more visible as they will help in promoting the interest of Nigerian women in this field. Findings from this study indicate that in order for women to find a comfortable home technical and vocational education environment, either the TVE environment will have to change its culture or the women will be forced to masculine and anglicize themselves in order to fit-in. The researcher, advocate for the creation of mechanisms that move the cultural system close to one another.
The researcher also strongly encourage stakeholders in TVE fields to consider incorporating career management courses that focuses on workplace skills and behaviors for all students, and not just women. For example courses that focus on helping students learn how to work as part of a team, how to negotiate and how to address conflicts and interpersonal differences will go a long way in helping to prepare students to pursue a successful career in technical and vocational education. Government and employers should try to take into account women's childbearing and related social roles in the arrangement of working hours, in the flexibility of the career patterns, in provision for children and in other innovations in institutional structure of TVE environment.

CONCLUSION

Since so much of this paper has concerned reporting of actual stories of women in technical and vocational education only a few conclusion will be elaborated here. The reader is encouraged to review the "findings" section and draw personal conclusions. I conclude that women have passion for technical and vocational education, but there are some problems which make them feel isolated, marginalized or otherwise uncomfortable. Many of the problems leading to these feelings of the problems as enumerated are due to attitudes an actions of men/society who hold outdated view that technical and vocational education is a male domain. Nigeria would not benefit substantially from economic empowerment without the development of their human capacity through technical and vocational education. The problems will be best eliminated if more women are encouraged to enter technical and vocational education profession

and advanced to position of leadership. It therefore imperative that the field of technical and vocational education address women position in this field in shaping new technology and the cultural equation of technical and vocational education so that women can take their rightful position.

RECOMMENDATIONS FOR FURTHER RESEARCH

The world is now over a decade into the 21st century. Unfortunately, research into how women portray their position in male-dominated TVE in Nigeria is lacking. Therefore, more studies need to be performed. A replication of this study is recommended in order to confirm these results. Repeating this study may produce similar results which would strengthen and further validate the study's transferability (Creswell, 2012). Another type of study that would add to the findings of this study would be to investigate those women who have graduated from technical and vocational education program to share their success stories or experiences. As revealed this study lacks diversity and variety. Studies that have a large population to draw a sample and campuses that have more variety in technical and vocational education discipline offered would add significantly to the literature. Because men play a large role in technical and vocational education, their voice should be heard. They also need to be interviewed to find out their position in this field, if the goal of Nigeria is to attain technological development, this population must not be ignored or forgotten. Research should be conducted to examine the implication of starting technical and vocational education at the primary school level to see if exposing female to technology education at early ages influences their interest and enrollment of females in technical and vocational education at higher level. Studies should be conducted among parents with TVE background and those parents without

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