



Factors Affecting the Choice of Automobile Technology Education Among Female Students North Eastern Nigeria Colleges Of Education And Polytechnics

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ABSTRACT

The purpose of this study was to identify factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics. The study involved 150 subjects in colleges of education and polytechnics offering automobile technology as a course of study. Three (3) research questions and two (2) hypotheses were formulated which guided the researchers in carrying out the study. Survey research design was adopted for the study. Structured questionnaire was the instrument used for data collection. The instrument was validated by two (2) experts, their comments; advice and suggestion were used to draft the final instrument. Mean and standard deviation were used as statistical tools for data analysis, while z-test was used in testing the hypotheses. The findings of the study revealed among others that, there was low enrolment among female students in automobile technology education in northeast Nigeria colleges of education and polytechnics. Hence, it was recommended that Federal, state and local governments should encourage females through provision of incentives as scholarship, free education so that females can be attracted towards developing interest in automobile technology as a course of study.

Keywords: Attitude, Socio-cultural, Automobile Technology Education

INTRODUCTION

Attitude deals with the interest of learner, the interest of the learners are of vital importance for success and progress in the program. According to Salami (1999) learner's interest is of relevance because interest is a drive that moves one to make a choice of something willingly. Technical education provides skills, attitudes and knowledge in different fields which demand one to develop interest and willingness to acquire such education. Technical education includes automobile technology which deals with servicing, repair and maintenance of motor vehicle. Students (both males and females) are expected to develop interest and consider their aptitude in choosing automobile technology education as a course or career. It is therefore of interest to educators to understand some of the key factors that affect student's interest in any education program such as individual choice, background, learning environment, facilities, and teacher and teaching quality. In all these factors the individual choice appear to be fundamental as one need to choose what do before thinking of other success factors. Technical Educators like Salami (1999), Issa and Nwalo (2008) stated that choosing a career or course by the individual is one of the most important, yet difficult decisions to make in a life time. Everyone reserves that right to make the choice irrespective of sex. The trend of events in terms of choice of career among students in vocational and technical education is influenced by certain factors such as parents, friends, teachers, scholarships, printed

and media information, religion and sex (Okorie and Ezeji, 1988). On factors that affect female career choice in technical education, Oneubunwa (2000) enumerated factors such as family, institutional, organizational, social-cultural and personal factors and negative attitude of some parents towards the education of their daughters. Some parents viewed the education of their daughters as a waste of money since a female would marry and leave the family. Oneubunwa further observed that institutions like technical colleges initially started with only male students to undergo technical courses. Discrimination by preferring male employees as against female in some organizations served as a factor.

Socio-cultural in terms of culture and belief affect female career choice. Certain practices believed that female roles are child bearing and rearing, and so female should not acquire technical education (Choima, 2002). The cultural belief held by the society made the female inferior to the male as they tends to hold the notion that certain courses in technical education should be under taken by male. These courses include automobile technology education and so on. Malgwi and Mbayah (2010) stated that some individuals often make choice of career or work easily during training, while other persons find it difficult to make such decisions as to which career is to be chosen among given courses. Furthermore, information about scientific equipment and technology in formal sector of the economy make the choice of career in occupations difficult among persons. In order to make wise choice in any given occupations or course of study, Okorie and Ezeji (1988) suggested the following:

1. An insight of the individual's self-aptitudes, abilities, interest, ambitions resources and their causes.
2. A knowledge of the requirements and conditions, advantages, disadvantages, compensation, opportunities and prospects in each occupations;
3. Choice of career in occupations is influenced by parents, religion, sex, among other factors.

The influence of sex in choice of career among students can be seen from the enrolment of students in technical education programmes at Federal College of Education (Technical) Potiskum 2007-2013 as presented in Table 1 below,

Table 1. Technical Education Enrolment Programmed FCE (T) Potiskum 2007-2013

S/N	Year	No. of Male Students	No of Female Students	Total
1.	2007/2008	180	11	191
2.	2008/2009	198	16	214
3.	2009/2010	154	13	157
4.	2010/2011	166	7	173
5.	2011/2012	115	12	127
6.	2012/2013	163	17	180
	Total	976	76	1,052

Source: Federal College of Education (Tech) Potiskum Statistics Yearly Digests (2016)

Table 1 shows the enrolment of both female and male students in technical education courses in the period 2007-2013. The total number of female student's enrolment falling below 10% of the male students. This shows that less number of female students made the choice of technical education as a career. In the different course areas automobile technology was worst in terms of female enrolment as shown in Table 2 below.

Table 2. Technical Education Enrolment by Courses NCE 2007-2013

Years	Auto		E/E		W/W		M/W		B/D	
	M	F	M	F	M	F	M	F	M	F
2007/2008	20	2	25	4	8	3	5	0	23	2
2008/2009	27	0	30	2	10	4	8	4	25	2
2009/2010	33	3	20	2	11	3	15	3	30	1
2010/2011	25	0	25	1	13	0	17	0	35	2
2011/2012	40	1	35	4	17	5	13	4	40	4
2012/2013	38	2	40	5	20	4	11	5	45	5
Total	183	8	175	18	79	19	69	15	198	16

Auto= Automobile, E/E = Electronic/ Electricity, WW = Woodwork, MW = Metalwork, and BD = Building
 Source: Federal College of Education (FCE) Gombe statistic yearly digests (2016)
 Note: M = Male, F = Female

Automobile technology education involves the application of scientific knowledge in the design, selection of materials, construction, operation, repairs, maintenance of tools and equipment (Owoso, Jimoh and Olayinka 2006). The admission requirements of candidates wishing to study automobile technology education include: National Technical Certificate (NTC) with three credits which must include mathematics, English language and two other relevant subjects, city and guilds/intermediate certificate with credit/merit in at least four subjects. It is therefore clear from the sample enrolment data from FCE (T) Gombe that while female enrolment in all the technical based courses are low, that of automobile technology courses is lower. This suggests that there may be some other factors that affect female students in choosing technical education programme at NCE (T) levels.

Statement of the Problem

There appears to be general low enrolment of female students in technical courses at Nigeria Certificate in Education (NCE) level. For instance the students enrolment at Federal College of Education (Technical), Potiskum between 2007-2013 stood at 976 males and 76 females FCE (T) Gombe 704 males and 76 females. (FCE (T) Potiskum and Gombe yearly digest, 2016). While at the Technical Education Department of Ramat Polytechnic Maiduguri in 2007-2013 the enrolment stood at 31 males and 7 females (Ramat Polytechnic Exams and Records Unit, 2013).

The low female enrolment into technical courses which includes automobile technology education in Colleges of Education and Polytechnics is a serious concern. Thus, the low female enrolment into automobile technology education needs to be addressed. Lack of addressing low female enrolment if not checked could result in female students not choosing automobile technology education as a career. This could imply that female students would not have the opportunity of acquiring skills, knowledge and attitudes in automobile technology education. The National Policy on Education (FRN, 2008) emphasize equal opportunity be given to citizens irrespective of sex to acquired education including automobile technology education. The study sought to identify factors affecting the choice of automobile technology education among female students in North Eastern Nigeria Colleges of Education and Polytechnics.

Purpose of the Study

The main purpose of the study was to identify factors affecting the choice of automobile technology education among female students in North Eastern Nigeria Colleges of Education and Polytechnics. Specifically the study sought to:

1. Identify enrolment status of female students into automobile technology education in north eastern Nigeria colleges of education and polytechnics.
2. Identify basic factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics.
3. Identify societal factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics.

Research Questions

1. What is the enrolment status of female students in automobile technology education in north eastern Nigeria colleges of education and polytechnics?
2. What are the basic factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics?
3. What are the societal factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics?

Hypotheses

The following hypotheses were tested at 0.05 level of significance.

Ho₁: There is no significant difference between the mean ratings of students and automobile technology education lecturers on the basic factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics.

Ho₂: There is no significant difference between the mean ratings of students and automobile technology lecturers on the effect of societal factors affecting the choice of automobile technology education among female students in north eastern colleges of education and polytechnics.

METHODOLOGY

This study was conducted in North Eastern Nigeria colleges of education and polytechnics comprising, college of education Hong, college of education Azare, Abubakar Tatari polytechnic Bauchi, Ramat polytechnic Maiduguri, federal college of education (technical) Gombe and federal college of education (technical) Potiskum. The population of the study was made up of all automobile students in the colleges of education and polytechnics and their lecturers of automobile technology education within the North Eastern States of Nigeria. The total number of students and automobile lecturers was 150. There was sampling technique used as the entire population of one hundred and fifty respondents (150) was used for the study. Thirty two items structured questionnaire developed by the researchers and validated by two (2) experts in Madibo Adama University of Technology, Yola. The questionnaire was structured with a five point Likert Scale, Strongly Agree=5points, Agree=4points, Undecided=3points, Disagree=2points and Strongly Disagree=1points. Mean and standard deviation were used as statistical tools for data analysis; z-test was used to test the hypotheses at 0.05 level of significance and cut – off point of 3.50.

Table 3: Enrolment Status of Female Students in north eastern Nigeria Colleges of Education and Polytechnics from 2007-2013

S/N	Institutions	F	M	Total	Percentage (Female)	Percentage (Male)
1	COE Hong Adamawa	9	57	66	13.6%	86.3%
2	COE Azare Bauchi	8	57	65	12.3%	87.6%
3	ATAP Polytechnic Bauchi	17	63	80	21.2%	78.6%
4	Ramat Polytechnic Borno	15	52	67	22.3%	77.6%
5	FCE (T) Gombe, Gombe	76	704	780	9.7%	115.9%
6	FCE (T) Potiskum, Yobe	76	976	1,052	7.2%	92.8%
	Total	201	1,909	2,110		

Table 3 shows that the enrolment of female students in automobile technology education in north eastern Nigeria colleges of education and polytechnics were 13.6%, 12.3%, 21.2%, 22.3%, 9.7% and 7.2% respectively from 2007-2013 sessions. The total number of female students was 201 compared to 1,909 males. This indicated that less female students choose automobile technology education as a career. 22.3% indicated an increase in female student's enrolment in Ramat polytechnics while 7.2% of female enrolment in FCE (T) Potiskum was a less decrease. The percentage of female enrolment in FCE (T) Potiskum in automobile technology education indicated that low female students enrolled in automobile technology education as a career. The findings from Table 3 revealed that there is low enrolment of female students in automobile technology education in north eastern Nigeria colleges of education and polytechnics.

Table 4: Mean Responses of Students and Lecturers on Basic Factors Affecting the Choice of Automobile Technology Education among Female Students

$N_1=113$ $N_2=37$

S/N	Items	\bar{X}_S	\bar{X}_T	\bar{X}_G	SD	Remarks
1.	Academic Qualification	2.15	2.57	2.36	0.15	Disagreed
2.	Nature of practical work	3.50	3.84	3.67	0.12	Agreed
3.	Duration of the training	3.36	3.76	3.56	0.14	Agreed
4.	Parental background	3.65	3.70	3.67	0.02	Agreed
5.	Parental influence/choice	3.33	3.30	3.31	0.01	Disagreed
6.	Financial status of students/parents	3.38	3.54	3.46	0.06	Disagreed
7.	Societal demand/bias	3.67	3.51	3.59	0.06	Agreed
8.	Religious beliefs	3.73	3.70	3.71	0.01	Agreed
9.	Availability of training programme	2.32	3.76	3.04	0.51	Disagreed
10.	Cost of the training	3.67	3.62	3.65	0.02	Agreed
11.	Availability of automobile workshop	2.41	3.30	2.85	0.31	Disagreed
12.	Inadequacy of automobile equipment/tools	3.65	3.78	3.72	0.05	Agreed
13.	Availability of qualified automobile teachers	2.12	2.22	2.17	0.04	Disagreed
14.	Availability of supporting staff	2.14	2.16	2.15	0.01	Disagreed
15.	Lack of scholarship	3.79	3.51	3.65	0.10	Agreed

Table 4 showed that items 15, 8, 7, 12,13,4 and 2 had Grand Mean ratings from 3.56 and above indicating the basic factors affecting female student's choice of automobile technology education in north eastern Nigeria colleges of education and polytechnics. While items 1, 5, 6, 9, 11, 13, and 14 with Grand Mean ratings of 3.46 and below were disagreed by respondents. These indicated that the basic factors affecting the choice of automobile technology education among

female students in north eastern Nigeria colleges of education and polytechnics were nature of practical work, duration of training, parental background, societal demand, cost of training, inadequacy of automobile equipment, religious beliefs and lack of scholarships.

Table 5: Mean Responses of Students and Lectures on Societal Factors Affecting the Choice of Automobile Technology Education among Female Students.

N₁=113 N₂=37

S/N	Items	\bar{X}_S	\bar{X}_T	\bar{X}_G	SD	Remarks
1.	Gender disparity between girls and boys affect career choice in automobile technology education.	3.62	3.78	3.70	0.06	Agreed
2.	Cultural beliefs affect female career choice in automobile technology education.	3.68	3.65	3.67	0.01	Agreed
3.	Employment opportunities affect female career choice of automobile course.	3.96	3.03	3.50	0.33	Agreed
4.	Stereotyping of feminine duties like child care, water and firewood fetching affect female career choice of automobile technology education.	3.65	3.95	3.80	0.10	Agreed
5.	Some religious practices do not encourage female career choice in automobile technology education.	3.50	3.49	3.50	0.01	Agreed
6.	Societal norms and values affect female career choice in automobile technology education.	3.73	3.57	3.65	0.06	Agreed
7.	Parental pressure for early marriage affects female career choice in automobile technology education.	2.41	3.51	2.96	0.39	Disagreed
8.	Parents viewed female career choice in automobile technology education as unprofitable.	3.86	3.70	3.78	0.06	Agreed
9.	Lack of giving female students leadership role in colleges affect their career choice in automobile technology education.	3.79	2.49	3.14	0.46	Disagreed
10.	Friends are influential in female career choice in automobile technology education.	3.66	3.97	3.82	0.11	Agreed
11.	Apathy towards vocational and technical education by society.	3.83	3.49	3.82	0.12	Agreed
12.	None provision of scholarship affects female career choice in automobile technology education.	3.88	3.03	3.46	0.30	Disagreed
13.	Inadequate finance for feeding affects female career choice in automobile technology education.	4.15	4.24	4.20	0.03	Agreed
14.	Family financial status affects female career choice in automobile technology education.	3.77	3.70	3.74	0.02	Agreed
15.	The social status of parent affects female students career choice in automobile technology education.	3.06	3.84	3.45	0.27	Disagreed
16.	Lack of parental support affects female career choice in automobile technology education.	3.26	3.76	3.51	0.18	Agreed
17.	Insufficient financial resources for purchase of textbook and learning of parents affect female career choice.	3.63	3.70	3.67	0.03	Agreed

Table 5 showed that items with Grand Mean ratings of 3.50 and above are societal factors affecting choice of automobile technology education among female students in north eastern Nigeria colleges of

education and polytechnics. Items with Grand Mean ratings of 3.46 and below were disagreed by the respondents. Apathy towards VTE, influence of friends, parent views, stereotyping of female duties had high Grand Mean ratings. Parental pressure for early marriage had the lower Grand Mean of 2.9. Findings on societal factors affecting choice of automobile technology education among female students. The result revealed that cultural beliefs, employment opportunities, religious practices, lack of parental support, financial status of parents, peer group influence are some relevant societal factors.

Table 6: z – test Analysis on the Mean Ratings of Students and Automobile Technology Education Lecturers on Basic Factors affecting Choice of Automobile Technology Education among Female Student in north eastern Nigeria Colleges of Education and Polytechnics

Categories	N	\bar{x}	SD	z-calculated	z-critical	Remarks
Students	113	3.12	0.45	-1.00	±1.96	Accepted
Lecturers	37	3.35	0.32			

Table 6 showed the calculated z was -1.00 while the critical z was 1.96. Since z-calculated was found to be less than z-critical the null hypothesis was therefore accepted. This implied that there is no significant difference in the mean ratings on the basic factors affecting female student's choice of automobile technology education as a career in colleges of education and polytechnics.

Table 7: z – test Analysis on the Mean Ratings of Students and Automobile Technology Education Lecturers on societal Factors affecting Choice of Automobile Technology Education among Female Student in north eastern Nigeria Colleges of Education and Polytechnics

Categories	N	\bar{x}	SD	z-calculated	z-critical	Remarks
Students	113	3.61	0.16	-0.24	±1.96	Accepted
Lecturers	37	3.58	0.17			

From table 7 the calculated z was -1.19 while the critical z was 1.96. Since z-calculated was found to be less than z-critical the null hypothesis was therefore accepted. This implied that there was no significant difference in the mean ratings of respondents on the students and automobile technology education lecturers on the effect of societal factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics.

Findings

1. There was low enrolment among female students in automobile technology education in northeast Nigeria colleges of education and polytechnics.
2. The basic factors that affect the choice of automobile technology education on eight items agreed among female students in north eastern Nigeria colleges of education and polytechnics. They are: nature of practical work, duration of the training, parental background, societal demand/bias, religious believe, cost of training, adequacy of automobile equipment and lack of scholarship. However, the mean response in 7 items disagreed.
3. The societal factors that affect the choice of automobile technology education among females students in north eastern Nigeria colleges of and polytechnics on thirteen items agreed. They are gender disparity between girls and boys, cultural beliefs, employment opportunities, stereotyping of feminine duties, some religious practices do not encourage female career choice of automobile technology education, societal norms and values, parent viewed female career choice in automobile as unprofitable, friends are influential in female career choice, apathy towards

vocational technical education (VTE) by society, family financial status, inadequate finance for feeding female students, insufficient financial resources for purchase of textbook and lack of parental support.

DISCUSSION OF THE FINDINGS

Based on the issues raised in the purpose of this study, the findings were discussed. In table 3, the result shows the enrolment of female students in automobile technology education in north eastern Nigeria colleges of education and polytechnics were 13.6%, 12.3%, 21.2%, 22.3%, 9.7% and 7.2% respectively from 2007-2013 sessions. The total number of female students was 201 compared to 1,909 males. This indicated that less female students choose automobile technology education as a career. 22.3% indicated an increase in female student's enrolment in Ramat polytechnics while 7.2% of female enrolment in FCE (T) Potiskum was a less decrease. The percentage of female enrolment in FCE (T) Potiskum in automobile technology education indicated that low female students enrolled in automobile technology education as a career.

This finding was supported by Okworie (2008) who reported that low enrolment of students including female students is not only peculiar to colleges of education and polytechnics but also the whole of technical education system. Halima (2008) in agreement observes that it was indicated that entrance into colleges of education and polytechnics recorded 320,000 candidates including both female and male candidates. The low enrolment of female students into automobile technology education could also be a reflection of low enrolment of student's technical education system. Table 4 showed that items 15, 8, 7, 12, 13, 4 and 2 had Grand Mean ratings from 3.56 and above indicating the basic factors affecting female students choice of automobile technology education in north eastern Nigeria colleges of education and polytechnics. While items 1, 5, 6, 9, 11, 13, and 14 with Grand Mean ratings of 3.46 and below were disagreed by respondents. These indicated that the basic factors affecting the choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics were nature of practical work, duration of training, parental background, societal demand, cost of training, inadequacy of automobile equipment, religious beliefs and lack of scholarships. The findings indicated that parental background, duration of training, societal demand, religious belief, inadequacy of automobile equipments affect students choice of automobile technology education as a career. This finding was in agreement with the outcome of Chioma (2000) who found that factors such as cultural beliefs, interest, gender, personal qualities and parental background have influenced on career choice of females. This was supported by Ezeji and Okorie (1988), who enumerated factors such as personal qualities, sex influence; religious and cultural beliefs, interest and parental background can influence career choice of individuals. This finding was supported by Olaitan (1996) who found that some institutions offering vocational and technical education lack adequate equipment and are experiencing shortage of training facilities. Adequate facilities for training students in vocational and technical education are vital. Facilities such as workshops, equipment and tools could promote teaching and learning automobile technology education in colleges of education and polytechnics. Table 5 showed that items with Grand Mean ratings of 3.50 and above are societal factors affecting choice of automobile technology education among female students in north eastern Nigeria colleges of education and polytechnics. Items with Grand Mean ratings of 3.46 and below were disagreed by the respondents. Apathy towards VTE, influence of friends, parent views, stereotyping of famine duties had high Grand Mean ratings. Parental pressure for early marriage had the lower Grand Mean of 2.9. The result revealed that cultural beliefs, employment opportunities, religious practices, lack of parental support, financial status of parents, peer group influence are some relevant societal factors. This finding was supported by Astin (1993) who found that student's peer is the single most potent source of influence on growth and development during the undergraduate year. Astin noted that members of the peer group act as a model to the other. The type of career chosen by the first people always influences the rest. Also, this finding was in agreement with that of Igbinedion (2011) who found that classmates chose courses the same as of their friends. The findings revealed that culture is another societal factor that influences female choice of career. This was in agreement with Okonkwo (1999) who found that Nigerian culture demands that

female be separated from males in classrooms. This finding was supported by Dopemu (1995) who found that African culture assume that women are physically inferior and could not cope with some industrial jobs which require physical efforts, therefore restricting females from attending vocational and technological schools, thus, influencing career choice of female students in colleges and polytechnics. Flishak, Yilji & Daze (2004) supported the finding above by reporting that females are badly affected by societal factors of culture and religious practices when it comes to female involvement in vocational and technical education. Mom, Tama and Abaya (2009) supported that societal factors consisting of religious and cultural beliefs affect female choice of vocational and technical education. Automobile technology education as a course in vocational and technical education is a career which choice is affected among female students in Colleges of Education and Polytechnics due to societal factors.

CONCLUSION

This study focused on factors affecting the choice of automobile technology education among female students in north eastern Nigeria Colleges of Education Polytechnics. Based on the findings of the study, it was concluded that there was low enrolment among female students in automobile technology education in northeast Nigeria colleges of education and polytechnics.

The basic factors that affect the choice of automobile technology education as a course of study are: nature of practical work, duration of the training, parental background, societal demand/bias, religious believe, cost of training, adequacy of automobile equipment and lack of scholarship. While societal factors that affect the choice of automobile technology education among females students in north eastern Nigeria colleges of and polytechnics are gender disparity between girls and boys, cultural beliefs, employment opportunities, stereotyping of feminine duties, some religious practices do not encourage female career choice of automobile technology education, societal norms and values, parent viewed female career choice in automobile as unprofitable, friends are influential in female career choice, apathy towards vocational technical education (VTE) by society, family financial status, inadequate finance for feeding female students, insufficient financial resources for purchase of textbook and lack of parental support.

RECOMMENDATIONS

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

1. Federal, state and local governments should encourage females through provision of incentives as scholarship, free education so that females can be attracted towards developing interest in automobile technology as a course of study.
2. Government and public private partnership should provide adequate modern tools to colleges of education and polytechnics.
3. Federal, state and local government should shows apathy toward the importance of technical education for both males and females. National orientation agency should employ the services of media like newspapers, radio broadcast, television broadcast and mass literacy to enlighten parents on the importance of female education that includes automobile technology education .This enlightenment would solve some of the problems such as cultural beliefs, societal norms and values, religious practices that discourage female career choice of automobile technology education in north eastern Nigeria colleges of education and polytechnics.

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