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Pattern Drafting Skills Acquisition by Home Economics Undergraduates: A Case Study of 400 Level Students of Michael Okpara University of Agriculture, Umudike

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Abstract

This study focused on Pattern Drafting Skills Acquisition by Home Economics Undergraduates: A Case Study of 400 Level Students of Michael Okpara University of Agriculture, Umudike. The study identified the pattern drafting skills acquired by the students, the methods adopted in pattern drafting, the challenges the students encounter in acquiring pattern drafting skills and the possible ways of enhancing acquisition of more pattern drafting skills among the students. Survey research design was adopted for this study. The population comprised 72 400 level Home Science students of Michael Okpara University of Agriculture Umudike. Results showed that the students have acquired few pattern drafting skills which include taking accurate body measurement, pattern lay out and transferring of pattern marks among others. Methods adopted in pattern drafting were flat pattern drafting method and Grading/Modifying from a set of patterns while the students were yet to adopt the use of Computer aided - Design, pattern alteration and draping among others. Also identified by the study were the challenges hindering acquisition of skills by students which include insufficient equipment/facilities for pattern drafting, and lack of financial assistant from school management among others. The measures to enhance pattern drafting among students include; providing facilities/equipment needed for pattern drafting, Consistent involvement of students in practical lessons and the school management funding practical lessons.

Keywords: Pattern Drafting, Skills, Undergraduates Students.

Introduction

Pattern is a piece of paper drafted and cut to size a shape used for cutting out fabric pieces for sewing out dress. According to Igbo and Illoeje (2012), drafting is a term used to describe an engineering approach to producing patterns, using a set of measurement obtained from a figure while following a set of instructions. The instructions are interpreted into drawings of shapes on the paper and transferred to the fabrics. Pattern drafting involves creating pattern by taking measurements from a person, form, or model, in order to create a foundation, which is a pattern used as the basis for the design. Ombugadu (2014) pointed out that to have a perfect and fitted dress, that it is necessary to make some adjustments on the paper pattern so that the real measurements will correspond with the individual's proportions.

In most Nigerian universities that offer Home Economics as a course, Clothing and textiles is one of the major area of Home Economics taught. Saskatchewan (2000) stated that clothing and textiles help students to understand and use the terminologies applied in the field of clothing, textiles and fashion designing. Njoku (2002), pointed out that clothing and textiles as a course offer skills in tailoring or dress making, clothing repairing, dyeing, batik making, embroidery, crocheting, weaving, knitting among others which help in alleviating poverty or creating job opportunities. Clothing and textiles can equip someone with varieties of competencies needed to be self-employed thus increasing the economic standard of one's family. Learning of income generating activities such as sewing, dye- making, batik and knitting will not only help the students to raise income but it will also help them to be employers of labour instead of a job seeker.

Igbo (2001) pointed out that the first step towards job creation is that there must be proper identification of jobs available in different segments of the economy so that necessary training can be provided.

Shaeffer (2001) outlined the areas skills should be acquired before someone can enter an apparel/garment production successfully or be employed in an apparel industry. These include the ability to describe the organizational structure of an apparel/garment manufacturing industry, identify and define job opportunities in apparel/garment manufacturing, identify and describe the processes in manufacturing and describe the interaction among the design, production and marketing/sale of the products.

In like manner, Mbah, Orhewere and Osifeso (2001) pointed out that there is joy and sense of belonging in making one's own garment. However to make a good dress for self and others, one should be able to acquire the following important skills: ability to make simple basic and decorative stitches, ability to take accurate body measurement, ability to draft pattern

and lay out pattern pieces on the fabric correctly, ability to transfer and cut out pattern marks among other skills.

In Nigerian universities, clothing construction is among the courses taught under clothing and textiles to Home Economics students. Thus, Home Economics students who are unable to acquire skills in pattern drafting in school are likely to find it difficult to gain employment in garment production industry or teach clothing in schools, or sew garments after graduation from an institution.

Skill is the ability to do something expertly and well (Ezeani, 2012). One is said to be skillful, if he/she carry out a process with efficient result. To possess a skill is to exhibit the habit of thinking and behaving in a specific activity in such a way that the process becomes natural to the individual through repetition or practice. Skill is widely regarded as a core object for policy intervention in the modern global high technology.

Home Economics undergraduate students have been defined as students in higher institution who are undergoing training/course studies in Human Nutrition, Home Management, Clothing and Textile, Child development, Consumer education, Family living among others. In other words, they are students in higher institution who are being trained to deal with the economics and management of the home and community (International Federation for Home Economics (IFHE), 2004). Their training deals with the relationship between individuals, families, communities, and the environment in which they live.

According to Kane (2015), in pattern drafting, there are some basic skills which are necessary to be acquire by the pattern maker. These skills include: the ability to study, interpret drawings, written instructions or sample of design, to have good drawing skills, mathematical skills, particularly making calculations involved in measurement, excellent knowledge of pattern making and sewing terms/symbols. Fashion2apparel.blogspot,com, (2017) pointed out that the ability and skill of an average Home Economics student in pattern drafting is derived from what they have learnt and can do.

Ombugadu (2014) stated that to be able to have a perfect and fitted dress, it is necessary to make some adjustments on the paper pattern so that the real measurements may correspond with the person's proportion. Clothing fit is the most important element for consumers in determining their overall satisfaction with garments.

Bellis (1997) stated that a fitted garment should ideally provide maximum comfort and protection for the wearer. The design and fit of a garment are factors which can affect both the protection aspects of a garment as well as its comfort.

Apple (2012) stated that fitting is more than learning how to adjust patterns. She explained further that fitting is more than following rules and calculating measurements. It involves

judgments, understanding, and taste. Mastering the act of fitting is a cumulate process; expertise does not come instantly, but it does develop through experience which include trial and error. This means that when one fitting adjustment is successfully completed on one pattern, similar steps with other patterns can be taken. By so doing the pattern maker will identify additional improvements worth making.

Apple (2012) stated that fitting skills are as important as sewing skills for creating garments of quality, value and beauty. She point out that one can be an expert at fine sewing and not know how to fit and would not realize that something is wrong with the way garment fit., Skill in understanding figure, body measurements /Choosing a pattern size in case of commercial patterns, pattern adjustments, fine Tuning (fine tuning points of fit, pleats and darts, seams etc). A practical guide to adjusting patterns for a professional finish include: knowing the fact that a good pattern is a fitting tools expected that Home Economics students acquire skills in flat pattern drafting,

Based on the above, it is important that Home Economics students should acquire skills in pattern making so that they can produce well fitted garments even in large quantity for commercial purposes.

Most Home Economics students in Michael Okpara University of Agriculture, Umudike have not adequately acquired such skills in pattern making. This however is due to the fact that there are some challenges hindering majority of them from learning the basic skills in pattern drafting, which among others include inability to calculate accurately figures obtained in body measurement, unable to make accurate patterns or interpret patterns symbols, and inability to transfer pattern marks among others. They look at it as a tedious and time consuming subject/course, finance demanding nature of the course, lack of competent lecturers/technologist in impacting the practical skills on the students among others.

Based on the above facts, it is therefore, necessary to identify the skills already acquired by 400 level Home Economics students in Michael Okpara University of Agriculture, Umudike, Abia State, identify their challenges and suggest possible way of improving and sustaining skills in pattern making. Hence, this is the justification for the study.

Purpose of the Study

The main purpose of this study was to investigate pattern drafting skills acquisition by 400 level Undergraduates of Home Economics.

Specifically, this study identified:

1. pattern drafting skills already acquired by 400 levels Home Economics undergraduate student in Michael Okpara University of Agriculture, Umudike.
2. techniques/methods adopted in pattern drafting by Home Economic undergraduate students.

3. challenges encountered by the undergraduate students in acquiring pattern drafting skills.
4. possible ways of enhancing more acquisition of skills and sustaining the acquired skills among students.

Research Questions

1. What are the skills already acquired in pattern drafting by 400 level Home Economics students in Michael Okpara University of Agriculture Umudike?
2. What are the methods adopted in pattern drafting?
3. What are the challenges encountered by the student in acquiring pattern drafting skills?
4. What are the possible solutions to the challenges encountered in acquiring pattern drafting skills?

Methodology

***Design of the Study*:** Survey research design was adopted in this study.

***Area of Study*:** The study area is Michael Okpara University of Agriculture, Umudike in Abia State. Michael Okpara University of Agriculture is under Ikwuano Local Government Area of Abia state. The total landmass of Ikwuano covers eighteen (18) villages, Isiala Oboro being the headquarters. Umudike is located eight kilometer southeast of Umuahia Ibeku (Abia State Hand Book, 1997).

***Population for Study*:** The population for the study comprised 400 level Home Economics students from Home Science/Hospitality Management and Tourism Department. A total population of 72 students (*Source*: 2017/18 Departmental list of 400 level Home Science students, Michael Okpara University of Agriculture).

***Sample and Sampling Technique*:** There was no sampling. The entire population were involved in the study, because they are final year students and have gone training in all courses involving acquisition of skills in pattern drafting. More so, the population was small and of a manageable size.

***Instrument for Data Collection*:** Questionnaire was used for data collection. Through extensive review of literature, the instrument was developed based on the purpose of the study. It had a four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) and values 4, 3, 2 and 1 assigned respectively. The questionnaire had 46 items. Test retest reliability was used to test the reliability of the instrument. The coefficient of reliability obtained was 0.551, signifying that the research instrument was reliable.

Data Collection Techniques: A total of 72 copies of the questionnaires were distributed by hand to 72 400 level Home Science students during their meeting on students lecture free week. The questionnaires were correctly filled and return by the students before the end of the meeting that day. All the 72 questionnaires were completely filled and retrieved. This represent 100% return rate.

Data Analysis Techniques: The statistical tools used for data analysis were frequency, simple percentage and mean, simple percentages and standard deviation. Frequency was used to organize the data collected, while mean was used to analyze the responses to the research questions. The mean was calculated based on the 4 - points rating scale response categories of Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) and values 4, 3, 2 and 1 assigned respectively. The cut-off mean was 2.50. Any value below 2.50 is regarded as disagree while any mean score up to 2.50 and above was regarded as agreed.

Findings

Table 1: Mean Responses on Pattern Drafting Skills Already Acquired by the 400 level Home Economics Undergraduates of MOUA, Umudike

S/N	Pattern drafting skills already acquired by 400 level Home Economics undergraduates.	400 level $\bar{x}_1$	SD	Remark
1.	Taking accurate body Measurement.	2.69	0.89	A
2.	Sketching/drawing skill.	2.32	0.85	NA
3.	Laying out pattern on fabrics.	2.65	0.80	A
4.	Using computer in making pattern.	2.16	0.85	NA
5.	Transferring pattern marks on fabrics.	2.76	0.98	A
6	Adapting pattern	2.55	0.93	A
7.	Altering pattern.	2.20	0.80	NA
8.	Pattern/Symbol Interpretation.	2.32	0.85	NA
9.	Ability to do calculations involved in measurement.	2.26	0.86	NA
10	Handling pattern drafting tools.	2.69	0.98	A
11	Cutting Patterns.	2. 69	0.68	A
12	Spreading/Stacking up.	2.26	0.86	NA
13	Bundling skill	2.68	1.08	NA
14	Constructing darts.	2.32	0.85	NA
15	Handling pattern pieces.	2.65	0.80	A
16	Adding of seams & hem Allowance.	2.26	0.86	NA
17	Truing the pattern	2.23	0.85	NA
18	Fitting skill	2.26	0 86	NA

Source: Field Survey, 2018, Key $\bar{x}_1$= Mean Responses of 400 level Home Economics Students, SD = Standard Deviation. A= Acquired, NA = Not Acquired.

Table 1 above shows that 7 out of 18 enlisted pattern drafting skills have already been acquired by 400 Level Home Science undergraduate students of MOUA, Umudike, while 11 skills were yet to be acquired .This was shown on their mean scores which were up to 2.50 and above. The highest mean score was 2.76, item no. 5 (Transferring pattern marks on fabrics), the lowest

mean score was 2.16, item no. 4 (Using computer in making patterns).

Table 2: Mean Responses on Methods Adopted in Pattern Drafting.

S/N	Pattern Drafting Methods	400 level $\bar{x}_1$	SD	Remark
1.	Modelling/Draping method	2.26	0.86	NA
2.	Knock-off design method	2.26	0.86	NA
3.	Grading/Modifying from a set of patterns	2.76	0.98	A
4.	Computer aided design method	2.20	0.80	NA
5.	Flat pattern drafting method	2.95	0.80	A
6.	Dart manipulation via pivoted points.	2.68	1.08	NA
7.	Printed method	2.26	0.85	NA
8.	Perforated Method	2.32	0.85	NA
9.	Slash Spread/Close technique.	2.67	1.08	NA
10.	Marking and tracing.	2.32	0.84	NA
11.	Use of quarter scale patterns.	2.30	0.85	NA

Source: Field Survey, 2018, Key $\bar{x}_1$**=** Mean Responses of 400 Level MOUA Umudike Home Science Students, **SD** = Standard Deviation, A = Adopted, NA =Not Adopted.

Table 2 shows that, 2 items out of 11 were methods adopted for pattern drafting while 9 methods are yet to be adopted. These were shown vividly in their mean scores. However, the highest grand mean score on the methods adopted was 2.95, item no. 5 (Flat pattern drafting method) while the lowest on the methods of those yet to be adopted was 2.20, item no.4 which bothers on computer aided design method.

Table 3: Mean Responses on Challenges the Students Encounter in Acquiring Pattern Drafting Skills.

S/N	Challenges the students encounter in acquiring pattern Drafting skills.	400 Level $\bar{x}_1$	SD	Remark
1.	Insufficient equipment/facilities.	2.98	0.93	Challenge
2.	Some Lecturer's incompetency in handling the course.	2.87	0.89	Challenge
3.	Insufficient number of clothing &textile lecturers.	2.57	1.04	Challenge
4.	Cost of pattern drafting materials.	2.68	1.08	Challenge
5.	Lack of financial support from parents and guardians	2.56	1.16	Challenge
6.	Lack of financial assistance from school authority.	2.81	1.06	Challenge
7.	Lack of interest by students.	2.85	0.95	Challenge
8.	Ambiguous teaching method.	2.70	1.09	Challenge
9.	Lecturers use tedious methods	2.92	1.11	Challenge.
10.	Lack of individual supervision during practical class by the lecturer.	2.83	0.930	Challenge.

Source: Field Survey, 2018, Key $\bar{x}_1$**=** Mean Responses of 400 level MOUAU Home Science Students, SD = Standard Deviation.

Table 3 shows that the students encounter 10 challenges in acquiring pattern drafting skills. These were shown on their mean scores which were all up to 2.50 and above. However, the highest mean was 2.98, item no.1 (insufficient equipment/facilities) while the lowest was 2.56, item no.5 (Lack of financial support from parents/guardians).

Table 4: Mean Responses on Possible Ways of Enhancing and Sustaining Acquisition of more Pattern Drafting Skills among the Students.

S/N	Possible Ways of enhancing and Sustaining Acquisition of more Pattern Drafting Skills among the Students.	MOUAU 400 level		
		$\bar{x}$	SD	Remark
1.	Organizing enlightenment programme regularly eg. seminars, workshop to show - case the students' products.	3.13	0.91	Agreed
2.	Employing competent clothing and textile lecturers.	3.48	0.78	Agreed
3.	Using simplified pattern drafting text books by lecturers and students.	3.50	0.67	Agreed
4.	Creating awareness of importance of pattern drafting among students.	3.41	0.66	Agreed
5.	Providing funds, facilities/equipment needed for pattern drafting by school authorities.	3.50	0.74	Agreed
6.	Lecturers should teach more of practical lessons than theoretical lessons.	3.56	0.73	Agreed

Source: Field Survey, 2018, Key $\bar{x}_1$**=** Mean Responses of 400 Level MOUAU Home Science Students, SD = Standard Deviation.

Table 4 shows that all the 6 items statements in the above table were the possible ways of enhancing and sustaining acquisition of more patterns drafting skills. This was shown vividly in their mean scores, which were all up to the acceptable mean score of 2.50 and above. However, the highest mean score was 3.56, item no.6 (Lecturers should teach more of practical lessons than theoretical lessons) while the lowest was 3.13, item no.1 which bothers on organizing enlightenment programme regularly eg. seminars, workshop to show - case the students' products.

Discussion of findings

The finding of the study shows that the students in only one institution in Abia State had acquired some pattern drafting skills while some skills are yet to be acquired. The result of the findings in table 1 showed that the highest mean score was on transferring pattern marks on fabric. This may be an indication that pattern transfer is an age long parts and parcel of pattern drafting during

clothing construction. According to Lorenzen (2002), every pattern pieces bears markings that together constitute a pattern "sign language" which is indispensable at every stage in the process of pattern drafting. She explains that all symbols like darts, cutting lines , seam lines(stitching lines), notches among others, has special significance, so acquiring skills in transferring pattern marks is of great important in pattern drafting process. Mbah, Orhewere and Osifeso (2001) identified transferring pattern marks as a very important skill in pattern drafting.

The findings of the study showed in Table 2, the methods adopted in pattern drafting among 400 level students in Michael Okpara University of Agriculture, Umudike. The highest mean scores on the method adopted was 2.95, item no.5 (Flat pattern drafting method) which bothers on obtaining pattern by working from a set of measurement of a figure, adhering to a set of instructions and drawing a shape on a brown paper according to Igbo and Iloeje (2012) This is the most popular method of pattern drafting.

Hollen (2002) stated that Flat - Pattern has several advantages over other techniques in pattern drafting which include the ability to design patterns to fit into economical fabric layouts, the possibility of restyling old patterns and out-of-date clothing into new ones, the ease for determining causes of mistakes and how to correct them, and the flexible planning for new procedures and efficient organization of work. Igbo (2003) emphasized in her work titled ''Pattern Drafting Tasks for Effective Teachings of Pattern Drafting Techniques in Clothing and Textile Curriculum of Tertiary Institution'' that majority of the respondents in her study accepted employing the flat pattern method technique, that most of the respondents do not use the computer-aided design, knock – off designs among others but had none or little skills in other techniques like knock- off design, computer aided design, draping and so on. She pointed out that there is need for the students to know other techniques as well so that the students can acquire skills in them.

The study identified some challenges the students are facing in acquiring pattern-drafting skills as shown in table 3. However, the highest grand mean was 2.93, item no.1 (insufficient equipment/facilities).

Lack of the basic equipment and facilities for pattern drafting is a big problem to acquiring the needed skills in pattern making. Only relatively few schools has clothing laboratory or classes for pattern drafting. Nevertheless a reasonably equipped room/laboratory should have flat-topped desks at least one cutting table, a chest of drawer or ample cupboard for the storage of work, materials, tools a long or full-length mirror and pressing equipment. Aldrich (2008) pointed out that a person with blunt scissors, bent pins and a huge needle has to struggle in every step of the work. Borrowing

from a neighbor is very bad as the borrower must use whatsoever equipment that is available whenever she can get it. Not only is she inconvenience but also the person she is borrowing from is being disturbed.

The study identified the possible ways of enhancing and sustaining acquisition of more pattern drafting skills in tertiary institutions. Many suggestions were identified by the study which among others include capturing and maintaining students interest, adequate equipment/facilities, adequate supervision by the lecturer during practical lessons, adequately funding practical lessons by the school authority, provision of current and simplified clothing construction text books among others. However the highest grand mean score was 3.56, item no.6 which bothers on Lecturers teaching more of practical lessons than theoretical lessons. This finding indicates the importance of arousing and sustaining students' interest during the learning process, especially in practical oriented course like clothing and textiles. In addition, when adequate time is allocated for pattern drafting lessons, it becomes sufficient enough for the students to finish their pattern drafting work in one lecture in order to ensure good final product in pattern drafting. Pattern drafting skills for a learner can be acquired gradually or slowly for it to be mastered very well.

The above findings is in agreement with Okeke (2005) who noted that some of the measures to pattern drafting problems include involvement of students in more practical work than in theory. This is a typical example of making the teaching real and learning process for the fact that majority of students retain more of the things they see, touch and hear during any course of teaching/instruction.

Conclusion

In conclusion, the findings from this study revealed that at the time of this study, that only one university (Michael Okpara University of Agriculture, Umudike) out of 4 universities in Abia state offer Home Economics courses. The study also provided information that the 400 level Home Economics students of Michael Okpara University of Agriculture, Umudike which was used as a case study have acquired some skills in pattern drafting on graduation which among others include skills in transferring pattern marks, skill in pattern layout, handling pattern pieces and cutting skills among others. However, there are some numerous essential skills they need to acquire to enable them be efficient in any career involving clothing construction and other related careers both nationally and internationally. The most popular method they use in pattern drafting is flat method of pattern drafting. Some of these essential pattern drafting skills the students are yet to acquire include Computer - aided design, Dart manipulation via pivoted points, perforated method, and printed method among others.

In this study, it was discovered that the 400 level Home Science student of Michael Okpara University of Agriculture encountered some challenges in pattern drafting which include financial difficulties, lack of adequate facilities and Lack of interest among others.

Measures to enhance and sustain pattern drafting skills among the 400 level Home Economics undergraduate students in Michael Okpara University of Agriculture, Umudike were identified by this study to include: Lecturers should teach more of practical lessons than theoretical lessons, More competent lecturers should be involved so that individualized lessons on practical lessons could be possible, School authority should adequately equip the existing clothing laboratory. These will definitely enhance and sustain more acquisition of skills in the university.

Recommendations

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

- The lecturers in Home Science Department of Michael Okpara University of Agriculture, Umudike, should followed the approved Home Economics Curriculum for the institution strictly with emphasis on practical lessons right from 100 level students so that strong foundation should be laid from the grass root and continue up to 400 level students. This will capture students' interest and ensure proper mastery of more techniques and skills involved in pattern drafting.
- School authority should provide adequate facilities/equipment for learning clothing and textiles in the institution.
- Students see clothing and textiles as tedious, time and money consuming course, so lecturers should employ techniques as Professor C. A. Igbo of the University of Nigeria, Nsukka does to clothing and textile students in the institution by being fair and firm, in teaching her students in love, this will certainly arouse and maintain student's interest in clothing construction during theory and practical lessons.
- Lecturers that handle the courses should be dynamic, i.e. try to update and acquire skills in modern technology for teaching clothing courses in the university so that the students can compete favourablely with their counter parts internationally.
- Students and lecturers should ensure that all the techniques in pattern drafting are taught and mastered practically before graduation of every students to enable the students have knowledge of each techniques and be able to compete both locally and internationally.

References

Aldrich, W. (2008). *Metric pattern cutting for women's wear*. Oxford: Blackwell Science.

Apple (2005). *The Perfect fit, A practical Guide to Adjusting Pattern for a Professional*

Finish. Minneapolis: Apple Press, Creative Publishing International (www.creativepub.com),11 - 12

Ombugadu, A. E. (2014). *Pattern Alteration and Adaptation, A Textbook for Clothing and Textiles for Schools and Colleges.* Makurdi: Aboki Publishers.

Bellis, M. (1997). *About Guide.com Inventors. Business Sand Finances* (Textile Revolution) Accessed 29th July, 2004, 12.38am, from *www.mycustomertailors.com*

Ezeani, N. S. (2012). The Teacher and Skills Acquisition at Business Education from the Perspective of Accounting Education; from the Perspective of Accounting Skills. *Arabian Journal of Business and Management review 2(4),* 25-36

Fashion.2apparael.com (2019). *Methods of Pattern Drafting in Apparel Industry.* Retieved from www.fashion 2Apparel.

Hollen, N. R. (2002). *Pattern Making by the Flat Pattern Method,* Toronto: *Hodder* and Stoughton.

Igbo, C. A. (2001). Employment Opportunities in the Textile Industries for Senior Secondary Graduates, Research Imperatives and Challenges for Home Economics in Nigeria. *Journal of Home Economic Research 1,(1*) 146 .

Igbo, C.A. and Iloeje, C.I. (2003). *The Basics of Dress Pattern Drafting,* 1st Edition, Enugu: Nselberg Ltd.

Igbo, C.A.and Iloeje, C.I. (2012). *The Basics of Pattern Drafting*, Revised 2nd Edition Enugu: Nselberg (Nigeria) Ltd.

International Federation for Home Economics (IFHE) (2004). *Position Statement in*: *International Journal of Home Economics*; 1, (1).

Kane, A. (2015). *Pattern Drafting for Beginners,* Accessed Feb, 2017 from www.fashion2apparel.blogspot.com

Njoku, H. A. (2002). Alleviating Poverty through Inculcation of Home Economics Based Life (Survival)Skills in Rural Women in Nigeria. Research Issues in Home Economics. *Journal of Home Economics 1(1)* 176

Lorenzen, H. (2002) .*New Complete Guide to Sewing Step-by-Step Techniques for Making Clothes and Home Accessories,* Reader's Digest Association(Canada) Ltd. Montreal – Pleasantville, N. Y. 35-36

Mbah, P.E, Orhewere, G. I, and Osifeso, G. A. (2001). *Home Economics at a Glance,* Lagos: Daban Publisher Enterprises, 31 - 38

Okeke, C. A.(2005).Improving Students' Skill Acquisition Through Effective Clothing and Textile Education in Tertiary Institution in Anambra State, *Journal of Home Economics Research (6) 1* 84-89.

Shaeffer, C. B. (2001) *Sewing for the Apparel Industry.* New Jersey: Prentice – Hall, Inc.