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Development of Self-instructional Manual in Teaching Pad-stitching Tailoring Technique to Home Economics Students in Universities of North Central Nigeria

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Abstract

This study developed a self-instructional manual for teaching the application of pad-stitching technique in garment construction to Home Economics students in three Universities in order to solve the problem of lack of teachers, insufficient time for practical and expensive tailoring textbooks. Three specific objectives and a null hypothesis tested at 0.05 level of significance guided the study. The study adopted Research and Development (R&D) design. Sample for the study was 120 people comprising of Home Economics lecturers and final year students in three sampled Universities totalling 98 people and 22 purposively sampled tailors. Four sets of instruments were used for data collection. Major findings of the study include: Out of 49 items presented as the consumable materials, tools and equipment for learning pad-stitching techniques in universities, 45 items were required while 4 items were not required. 10 items out of the 15 items presented on the criteria for self-evaluation of pad-stitching processes had their means between 3.50 and 4.00 and they were referred to as most suitable, while 2 items were said to be suitable with the mean of 3.06 and 2 items returned averagely suitable between 1.50-2.49 and 1 item with mean range of 1.56 was returned not suitable. Based on the result, the study concludes that self-instructional manual is very effective in teaching pad stitching tailoring techniques. It was therefore recommended that interventions are needed from stakeholders (government and proprietors of schools) in providing the necessary materials.

Keywords: Pad-stitching, instructional manual, consumable materials, tailoring, self -instructional manual

Introduction

Clothing construction is designed to impart knowledge; attitude and skill needed to choose, design and sew clothes perfectly (Anyakoha, 1993; Igbo, 1997). Clothing construction is made up of two components- theory and practical. The practical aspect of clothing construction is tailoring. Tailoring is a method of garment construction that uses sewing techniques including pad-stitching technique used in the production of suits and other tailored garments (Henry, Fabio and Vulker; 2006). Fitzgerald (1999) &Tiger (2009) are of the revealed that perfect tailoring is obtained by achieving seam detailing following the technological development in tailoring techniques. Tailoring applies exactness and special skills to produce the crisp details, durability and smooth lines that are characteristic of a well –tailored garment. Akubue (2004) stated that poor application of tailoring techniques reduces the quality of such garments and

will not accrue as much income as it would have if it had been perfectly sewn.

Pad-stitches are used primarily in tailoring, to attach a non- fusible interfacing (hymo) to outer or fashion fabric (Kingdersley 1996). Pad-stitches Pad-stitches are permanent stitches in tailoring formed from chevron stitches. When the stitches are made short and close together, they help to form and control shape in certain garment sections, such as a collar or lapel. Longer padding stitches are used just to hold interfacing in place.

Self- instructional manual is a book of instruction, designed to improve the quality of performed tasks ((Sleight, 1997, Sang, 2010 Alpha, 2013,) and describes the resources and strategies employed in achievement of operational objectives. With the limited number of teaching staff (Home Economics lecturers and technical instructors) and the limited time allotted to practical, a self-instructional manual is needed for both the fast and slow learners to follow with little or no assistance from the instructor who will only act as a guide

Objectives of the Study

The main objective of this study was to develop a self- instructional manual for learning tailoring techniques among Home Economics students of Universities in North Central Nigeria. Specifically, the study:

1 determined the instructional materials (consumables), tools and equipment that could be utilised in learning Pad-stitching technique in University programme
2. developed a draft of self-instructional manual for learning Pad-stitching technique in University programme
3. Determine the self- evaluation guidelines that could be utilised in assessing the attainment of the Pad-stitching technique objectives in the University

Hypothesis

A null hypothesis was tested by the study at 0.05 level of significance.

1. There is no significant difference in the mean rating of the practical skill achievement of Home Economics students that used the self-instructional manual and those that used conventional lesson plan.

METHODOLOGY

Design of the Study

The study adopted Research and Development (R&D) design and the study was carried out in five phases. These phases are explained in the method of data collection. The study was carried out in three Universites found in Benue, Nassarawa and Kogi states, North Central Nigeria Geo-political zone.

Population for the Study-The population for the study was 272 persons comprising of lecturers, students and tailors.

Sample and Sampling Technique- Multi-stage sampling technique was employed in sampling for the study. Three universities were randomly sampled from three states in North Central Nigeria. Home Economics teachers and the final year students totalling 98 persons and 22 tailors purposively sampled brought the sample size to 120 persons.

Instrument for Data Collection

Three sets of instruments were used for data collection, viz:

1. Self-instructional manual in pad-stitching techniques (SIMIPT)
2. ValidatesAssessment

Questionnaire (VAQ)

3. Psycho-productive (Aptitude) test items in pad-stitching techniques (PTIIPT).

Validation of the Instruments-The following instruments- SIMIPT, VAQ, PTIIPT were developed for this study and were validated by five experts in clothing construction from the University of Nigeria, Nsukka.

Method of Data Collection- Data for the study was collected in phases.

Phase 1- Self-instructional manual in pad-stitching techniques (SIMIPT). Data gathered from the findings from the tailoring techniques need assessment questionnaire distributed were utilised by the researcher to develop Self-instructional manual in pad-stitching techniques (SIMIPT). This phase took a period of 3 months to be completed.

Phase11- Validates Assessment Questionnaire

Validation of the drafted self-instructional manual by 20 experts was carried out using Validates assessment questionnaire which was developed by the researcher. The content of the questionnaire aided the validates to vet the developed self-instructional manual in pad-stitching techniques (SIMIPT) in terms of clarity, appropriateness, utility, objectivity, format, originality and adequacy of content for use in teaching Home Economics students skills in pad-stitching. Modifications and alterations to incorporate the outcome of the experts' validation were effected to produce a standard self-instructional manual ready for trial in the field. This phase lasted for a period of 2 weeks.

Phase III – Field Trial of the self-instructional manual

Based on the analysis from the data gotten from the validates assessment questionnaire, changes were effected on the self-instructional manual and a final copy was produced which was used to teach the final year students in the three institutions in pad-stitching techniques. This phase took a period of 3 months.

Phase IV- Assessment of the draft Self-Instructional Manual

Twenty-five objectives Practical skill test items which were developed based on the skills involved in pad-stitching techniques were administered on the final year Home Economics students after they were taught with self-instructional manual. A pre-test was given to the students before they were taught. This phase lasted 3 weeks for the pre-test and 3 weeks for the post test.

Results and Discussions

Table 1A: Mean Ratings of the Respondents (Home Economics Teachers Students and Tailors) on the Instructional Materials, tools and equipment that could be Utilized in Teaching Pad-stitching Techniques.

S/N	Instructional materials	X_2	SD	Remarks
1	matching thread	4.93	0.25	Required
2	Bias tape	4.93	0.25	Required
3	Woven and non- woven interfacing	4.93	0.25	Required
4	Pressing iron	4.93	0.25	Required
5	Tracing carbon	4.93	0.25	Required
6	Pattern piece	4.78	0.42	Required
7	Basting thread	4.90	0.33	Required
8	Tailor's chalk	4.93	0.25	Required
9	Muslin fabrics	4.86	0.43	Required
10	Fashion fabrics	4.86	0.43	Required
11	Brown paper	4.87	0.41	Required
14	Biro	1.78	0.42	Not required
15	Ham	4.87	4.87	Required
16	Sleeve roll	4.90	0.33	Required
17	Water	2.94	0.54	Required
18	Magazine	4.75	0.54	Required
19	Charcoal	4.93	0.25	Required
20	Pencil	4.93	0.25	Required
21	Thimble	3.78	0.42	Required
22	Masking tape	4.93	0.25	Required
23	Hymo fibrics	4.93	0.25	Required
24	A fine hand sewing needle	4.78	0.42	Required
25	Measuring tape	5.00	0.00	Required
26	Water soluble crayon	4.86	0.43	Required
27	Tailors pin,	4.86	0.43	Required
28	Scissors,	4.87	0.41	Required
29	clip scissors,	1.78	0.42	Required
30	Table	4.87	4.87	Required

Table 1B: Mean Ratings of the Respondents (Home Economics Teachers Students and Tailors) on the Instructional Materials, tools and equipment that could be Utilized in Teaching Pad-stitching Techniques

S/N	Instructional materials	X_2	SD	Remarks
31	Ruler	4.90	0.33	Required
32	Ironing board	2.94	0.54	Required
33	Tracing wheel	4.75	0.54	Required
34	Water bottle	1.73	0.35	Not required
35	Seam gauge	5.00	0.00	Required
36	Pin cushion	5.00	0.00	Required
37	Television	1.77	0.41	Not Required
38	Video/video tapes	1,63	0.33	Not required
39	Computer	2.94	0.54	Required
40	Transparencies	4.93	0.25	Required
41	Overhead projectors	4.87	0.41	Required
42	Slides	1.78	0.42	Required
43	Films	4.87	0.37	Required
44	Chalk board	4.90	0.33	Required
45	Display board	2.94	0.54	Required
46	Charts	4.75	0.54	Required
47	Models	4.90	0.33	Required
48	Plastic automatic pressing sponge	4.87	0.37	Required

Table 1A & 1B above presents the mean data for answering research question 1. Out of 48 items presented as the consumable materials, tools and equipment for learning pad-stitching techniques in universities, 47 items were required while 4 items were not required for the learning of pad-stitching techniques.

Research question 2: Self-instructional manual draft developed**Self-instructional Manual on Pad- Stitching Technique**

Introduction on pad stitching and the composition of pad stitching explained. The followings are the learners' prior idea on the stated task. The learner has been taught how to make stitches. The learner have the skill of making both long and short basting Level of students to be taught: Final year students of 3 Universities

Objectives: With the necessary learning resources, the learner will be able to

√ Mention 3 equipment used in pad stitching a garment

√ Sew interfacing and outer fabric together with hand pad stitching

√ Sew interfacing and outer fabric together using sewing machine

Learning resources/materials

Pressing iron, Thimble, Tailors pin, Scissors, Thread, Clip scissors, Matching Thread, Hand Needle, and Magazine.

Table 2A: How to Pad-stitch

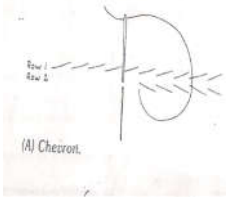
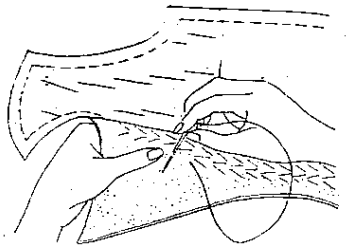
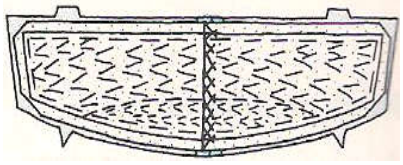
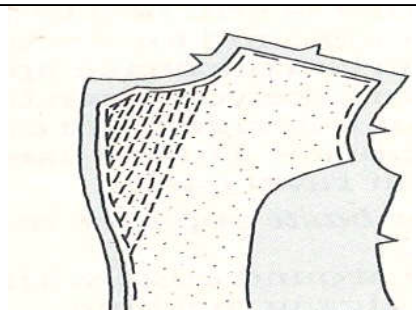
TASKS / PERFORMANCE	ILLUSTRATION
1. Cut a matching single thread,	
2. wear a thimble to protect your finger	
3. Insert a single matching thread in a fine hand needle. Do not knot the thread end but use the fastening stitch to anchor the end.	
4. Hold the garment so that the direction of the roll is parallel to the index finger of the left hand. Take tiny stitch through the interfacing, catching a yarn of the fashion fabric. Make stitches shorter.	
5. Make rows closer together in areas where it is desired more firmly such as on sharp roll lines and the points of collars and lapels.	
6. Make rows closer together in areas where it is desired more firmly such as on sharp roll lines and lapels.	

Table 2B: How to Pad-stitch

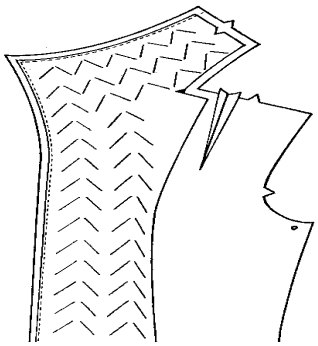
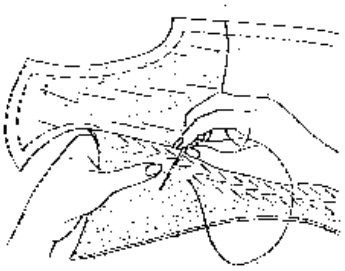
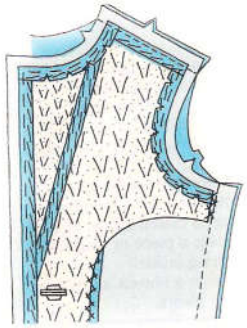
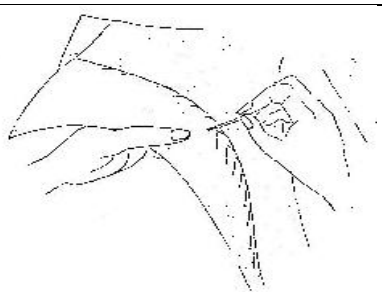
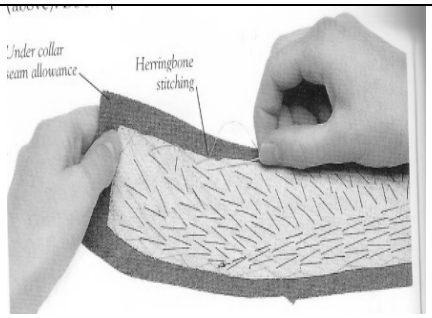
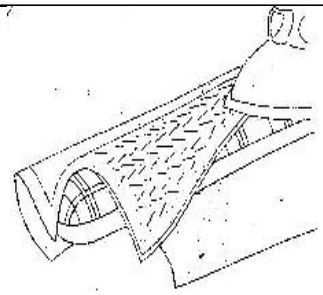
7.	Pad stitching could be done using small, medium, or large size of stitches. Do not pad stitch within the seam allowances.	
8.	Test for the amount of ease that will be necessary to allow the lapel to roll as desired. Do this by rolling the lapel over your hand or over a magazine,	
9.	Hold the garment in position Place the interfacing side of the garment on the table with the front edges of the garment away at the table edge. Now, bring the lapel forward over your hand with the thumb uppermost. Start pad stitching using either the chevron or pyramid type of stitches	
10.	Allow the interfacing to ease over the fashion fabrics. Then pin at frequent intervals along the edges. If gap between the two edges increases considerably, then you are easing too much if no gap exists, you are not easing enough and no roll is being incorporated. Remove pins before beginning to pad stitch.	
11.	After some line of stitches, press to allow the lapel lie easy over your finger as you sew.	

Table 2C: How to Pad-stitch

12.	make rolls of stitching alternately from right to left, then from left to right. Do not change the position of the lapel in your hand.	
13.	For a sharp, firm roll, make small pad stitches in the turn area. Make medium stitches in the flat part of the lapel. Check the stitching frequently to see that a smooth roll is maintained across the surface. The corner should tend to roll under slightly, so use small stitches in this area.	
14.	Place the pad-stitched lapel over a curved surface such as sleeve roll, ham, or press pad. Press to set stitches in and to smoothen the lapel as well.	

Application of knowledge by learner: Cutting lapels and collars accurately. Cutting interfacing for the lapels and collars from the same pattern piece as of the outer fabric. Sewing interfacing and outer fabric together with pad-stitching.

Table 3. Self- Evaluation By Learner

Tasks	**Activities surrounding the task- Did the learner**	**Max Score**	**Score Obtained**
Pad-stitching	- Cut the lapels and collars on a diagonal grain. - Cut the lapels and interface using the same pattern piece. - Sew pad-stitching with the appropriate stitch length/size. - Hand pad-stitching hidden at the right side of the outer fabric. - Use chevron pad-stitch to sew woven canvas interfacing on outer fabric. - Press the pad-stitched lapel after sewing. Total score	5 5 5 5 5 5 30	

Table 4: Mean Ratings of the Respondents (Home Economics Teachers Students and Tailors) on the Self-evaluation Criteria appropriate for pad-stitching.

s/n	The following should be included in the self-evaluation criteria appropriate for a self-instructional manual on pad-stitching techniques for Home Economics students	Mean	SD	Remark
1	Cut the woven interfacing on a diagonal grain.	**3.96**	**0.19**	**M S**
2	Used thimble to protect the finger	**4.00**	**0.00**	**M S**
3	Use the press cloth in fixing interfacing	**1.89**	**0.31**	**A S**
4	Pre-shrink the interfacing before cutting	**3.76**	**0.52**	**M S**
5	Used short stitch length especially at the roll line	**3.06**	**0.88**	**S**
6	Cut the lapels and collars on a diagonal grain.	3.76	0.52	MS
7	Cut the lapels and interface using the same pattern piece.	3.76	0.52	MS
8	Sew pad-stitching with the appropriate stitch length/size.	3.76	0.52	MS
9	Hand pad-stitching hidden at the right side of the outer fabric.	3.76	0.52	M S
10	Use chevron pad-stitch to sew woven canvas interfacing on outer fabric.	3.76	0.52	M S
11	Press the pad-stitched lapel after sewing.	3.76	0.52	MS
12	Check the roll line of the lapel	3.76	0.52	MS
13		1.56	0.50	NS
14	Correct use of tools and equipment	3.06	0.88	S
15	Dependability in handling tailoring jobs	2.81	0.82	AS

Most suitable MS, suitable S, Averagely suitable AS, and Not suitable NS

Data for providing answers to this research question are presented in Table 4. The data in the table 4 above states that 10 items out of the 15 items presented on the criteria for self-evaluation of pad-stitching processes had their means between 3.50 and 4.00 and they were referred to be most suitable, while 2 items were said to be suitable with the mean of 3.06 and 2 items returned averagely suitable between 1.50-2.49 and 1 item with mean range of 1.56 was returned not suitable and so it was rejected or dropped.

Table 6: ANCOVA Test on students' achievement/performance for those taught with self-instructional manual and those taught using conventional method

Source	Type III Sum of squares	Df	Mean Square	F	Sig
Corrected Model	1200.06	2	600.03	6.978	0.074
Intercept	35340.216	1	35340.216	410.818	.000
Pretest	21.698	1	21.698	0.252	1.448
Group	1198.672	1	1198.672	13.934*	.022
Error	9806.74	114	172.048		
Total	473776.00	120			
Corrected total	110068.00	118			

*Significant at sig of F<0.05

The F-calculated value for the group is 13.934 with a significance of F at 0.022, which is less than 0.05, implying that the null hypothesis is not accepted at 0.05 level of significance

Discussion

The result of the study on the instructional materials, conforms with Ogbuanya & Fakorede (2008) who in carrying out a study to determine the

effect of learning mode on the psychomotor achievement of automobile technology students in Technical Colleges, used -instructional materials and found out that students taught with cooperative learning mode performed better. It is also in line with the findings of Njoku (1994) who developed Sixty-eight (68) item basic clothing construction techniques in self- evaluation rating scales. The present study developed a self-instructional manual that will help the students to meet up with the limited time available as well as being very competent in the application of pad-stitching techniques. Furthermore, the findings of the study agrees with Donkor (2010) who conducted a comparative research to determine the effectiveness of print and video instructional manuals for teaching practical skills in block laying and concreting. The researcher used an experimental design, with a population of 150 learners, who registered for Block-laying and concreting during the 2007/ 2008 academic year, at five learning centres in Ghana. The findings revealed that, the video-based instructional materials are pedagogically superior to the print-based instructional materials, as they exhibited superior skills acquisition and craftsmanship. The result of the study is also in agreement with that of Anyakoha (1986) who carried out a study on the identification of essential traits and tasks of selecting clothing occupations for senior secondary school students in Anambra and Imo States of Nigeria utilising the competency based approach using quasi-experimental research design. The findings of the study were to help teachers improve on their competencies in the area of clothing and textile as well as equip students with skills to be gainfully employed in clothing occupations on graduation. The study identified a total of 45 clothing occupations, 33 traits and 109 tasks. This is in accordance with this study as it simplified the instructions on the skills or tasks involved in tailoring and supported it with pictorial diagrams so that learners can carry out successful practical work with or without instructors.

Njoku (1994) developed a self-evaluation instrument which students in tertiary institutions can use to evaluate basic clothing construction skills. Igbo (1997) developed and validated a psycho productive skill test for assessing senior secondary school student in clothing and textile. Result from her study showed that tasks and skills such as pattern selection, pattern drafting, choosing commercial patterns, pattern alteration, transferring pattern marks, cutting out pattern pieces are lacking.

Conclusion and Recommendation

Pad-stitching techniques are not easily learnt by the students within a short time, therefore enough time is being demanded by both the teachers and students to be able to impact and acquire these skills. The study concludes that self-instructional manual is very effective.

Based on the findings from the study the following recommendations were made-

1. Stakeholders in education (Government & school proprietors) should provide adequate tools, facilities and fund for the consumables to the teaching and learning of Home Economics.

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