TITLE PAGE

DEVELOPMENT OF SELF-INSTRUCTIONAL MANUAL IN TEACHING TAILORING TECHNIQUES FOR HOME ECONOMICS STUDENTS IN UNIVERSITIES OF NORTH CENTRAL NIGERIA

BY

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APPROVAL PAGE

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SHAILONG, CALISTA NWAMAKA, a postgraduate student in the Department of Vocational Teacher Education, Faculty of Education, University of Nigeria Nsukka with Registration Number: PG/Ph.D/07/43319, has satisfactorily completed the requirements for the award of the degree of Doctor of Philosophy in Home Economics Education. The work embodied in the thesis is original and has not been submitted in part or full for any other diploma or degree in this or any other University.

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DEDICATION

This work is dedicated to God Almighty whose grace guided my path to the completion of this research work.

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Shailong, C.N.

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ABSTRACT

This study developed a self-instructional manual for teaching tailoring techniques to home economics students in universities. The study is aimed at enhancing studentsô acquisitions of some skills in tailoring techniques. The students were found to be facing some technical challenges in acquiring these skills largely because of the following reasons: too few teachers that lack the competence in tailoring skills impacting the to the students; technical instructor who are unwilling to devote enough time to instruct the students; competing demands on the time of the students which resulted in not allotting enough time to the course; Clothing construction and tailoring textbooks which could have been of help are scarce to come by and are too costly for the students to afford. The purpose of this study therefore was to develop self-instructional manual in tailoring techniques for Home Economics students in universities. Eight specific purposes guided the study. The study answered eight research questions and tested only one hypothesis at 0.05 level of significance. The area of the study was north central geo-political zone of Nigeria. The study adopted Research and Development (R&D) design. It was carried out in five phases as follows; Phase 1- Development of Tailoring Technique Need Assessment Questionnaire, Phase II- Development of the self-instructional manual on tailoring techniques, Phase III ï validation of the self-instructional manual, Phase 1V- teaching students tailoring techniques with the draft self-instructional Manual and Phase V- Testing the effectiveness of the self-instructional manual. The study was conducted in three universities out of seven universities that offer clothing construction courses. The population was 4052 comprising all the Home Economics lecturers, all the technical instructors, all registered tailors in the area, and all final year Home Economics students offering clothing and textile in the universities in the area of study. Purposive sampling technique was used to sample three universities as well as tailors. All the Home Economics lecturers in the three sampled universities totalling 14 and the 3 technical instructors- one from each university and all the final year students in the sampled universities totalling 139 students were entirely studied including 116 sampled tailors. Four sets of instruments were used for data collection. They are as follows-Tailoring Technique Need Assessment Questionnaire (TTNAQ), Self-instructional manual in tailoring techniques (SIMITT), Validates Assessment Questionnaire (VAQ), Practical skill test items in tailoring techniques (PSTIITT). Mean, ANCOVA and t-test were used to analyze the data collected. Major findings of the study include: self-instructional manual with pictorial views, Developed in students saleable skills suitable for successful careers in tailoring and develop in studentsô positive attitudes and proper working habits for sustainable employment among others. A total of 97 tasks for achieving the specific objectives of tailoring techniques were determined, A total of 21 consumable materials and 35 instructional tools and equipment were required for the study, A total of 80 step by step procedure and 33 self- evaluation guidelines were developed for the study. The study found out that effective skill acquisition is possible with repeated exercises. The null hypothesis was rejected because those students that used the SIM performed better than those that used conventional method. Based on the findings, it was recommended among others, that in order to stimulate meaningful understanding and skill acquisition, students and teachers should adopt the use of self- instructional manuals. University council should organize workshops, seminars and conferences for the teachers to enlighten them on the importance and use of instructional manuals. The Nigerian government is encouraged to make good use of the information generated in this study either in print or in electronics in facilitating skill acquisition in Nigeria.

CHAPTER ONE

INTRODUCTION

Background of the Study

The need for human resource training and development is indispensable for any nation aspiring to achieve greatness in vocational development. Central to human resource training and development is the role of vocational technical education in Universities. University education is charged with the responsibility of training skilled manpower for economic development of the country (Dangana, 2010).

Home Economics is one of the programmes in vocational education in universities in Nigeria. It has the following components: food and nutrition, child development, consumer education, home management, textile and clothing. All the components are designed to impart practical skills to the students in the different areas with a major aim of addressing seriously challenging unemployment facing individuals, families and the country at large. According to Lemchi (2006), Nigerian educational system is expected to device appropriate strategies for equipping individuals with skills to cope with this situation. Similarly, United Nations Educational Scientific and Cultural Organisation (UNESCO) (1997) stated that one of the solutions to unemployment is the generation of self-employment. Home Economics as a broad based field of study have so many components that are skilful enough for

individuals to be self-employed. Among those components is the textile and clothing construction. Clothing construction is one of the courses offered in Home Economics programme which exposes the students to the knowledge of some skills in garment construction. Clothing construction is designed to impart knowledge; attitude and skill needed to choose, design and sew clothes perfectly (Anyakoha, 1993; Igbo, 1997). It acquaints the students with skills in clothing, costume designing, construction and tailoring for self reliance and gainful employment (Igbo 2002). Skilled university graduates engaging in clothing construction will reduce unemployment and at the same time increase the volume of Nigerian made garment to replace costly, banned foreign ready-to-wear garments in the country. Clothing construction is made up of two components- theory and practical. A component of the practical aspect of clothing construction is the tailoring.

Tailoring is a method of garment construction that uses all sewing techniques that give perfect results after sewing. Such techniques include- cutting, underling, lining, interlining, interfacing, pad-stitching, application of tape among others used in the production of suits and other tailored garments (Henry, Fabio and Vulker; 2006 and Gawne and Bess, 1975). Fitzgerald (1999) and Tiger (2009) are of the opinion that perfect tailoring is obtained by achieving seam detailing and following the technological development in tailoring techniques, to meet the changing human needs in clothing. Tailoring applies exactness and special skills to produce the crisp details, durability and smooth lines that are characteristic of a well ï tailored garment.

Tailoring techniques are applied in the development and construction of tailored outfits, ranging from the simplest technique used in industries for mass production of tailored suits to the most refined techniques of haute couture (Milva, 2009). Tailoring techniques, according to Kindersly (1996) are the techniques needed for dress making and sewing for homes and industries, which include choosing the right fabrics, pleating and lining, to

achieving couture finishes among others. Akubue (2004) stated that poor application of tailoring techniques in garment construction reduces the quality of such garments and will not fetch as much income as it would have if it had been perfectly sewn; therefore there is need to impart tailoring skills to the students adequately. The tailoring techniques in this study include- interfacing, underlining, lining, taping and pad-stitching techniques.

Interfacing is the third layer of fabric applied between two other layers to provide shape, stability and structure to garments and to enhance durability. It is used in buttonhole areas to keep them from stretching and distortion. According to Barlup (2006), interfacings are used in collars and cuffs to add crispness and in facing to give stability. In tailoring, interfacing allows the garment to retain the shape that is built in during the construction process (Henry et al 2006). It can equally be used for special dramatic effects in construction.

Underlining is a multipurpose technique in garment construction. Underlining according to Henry et al (2006) and Betzina (2009), adds stability and strength to light weight fabrics and reduces wrinkling. They also noted that underlining enables one to use a fabric that may be too flimsy by itself for the garment one may have in mind. Underlining reduces the transparency of white or pastel fabrics, which prevents seam allowances from showing through. It can eliminate the shadow from a brightly coloured blouse tucked into light-coloured pants, and it hides panty lines. During garment construction, underlining fabrics are cut from the same pattern pieces used for cutting fashion fabric (Vanderhoff, et al 1985). This is because, when they are cut from the same pattern piece, they will fit neatly without giving the designer much stress.

Lining the garment is the final steps in the construction process and one of the most exciting steps in tailoring. This is to say that another type of fabric comes into use while constructing a garment. Such fabric could be elegant in colour, design or weave. Lining is generally used to give a finished look to the inside of the garment, prevents seams from

ravelling, reduce wrinkling, help conceal some figures faults and makes a garments easier to slip on and off.

Taping is one of the construction techniques in tailoring process. Tapes especially the cotton firmly woven and stable type is used mainly for staying and strengthening seams, especially in tailored jackets and coat (Ledbetter and Lansing, 1981). There are two types of tapes used in tailoring- the iron on tape and the non-iron tape also known as cotton tapes which could only be attached using sewing machine or hand sewing (basting).

Pad-stitches are used primarily in tailoring, to attach a non fusible interfacing (hymo) to outer or fashion fabric (Kingdersley 1996). Pad-stitches are best formed from chevron stitches. When the stitches are made short and close together, they are also helping to form and control shape in certain garment section, such as a collar or lapel. Longer padding stitches are used just to hold interfacing in place. Pad-stitches are permanent stitches in tailoring. Care must be taken when pad-stitching to avoid accident and so, thimbles are worn in the centre finger to protect it from the needle injury.

All these tailoring techniques application can only be achieved, when instructors (Home Economics lecturers and Technical Instructors) who teach the dressmakers have the required skills to impart the skills to the learners or to the pre-service Home Economists in the universities also known as the final year Home economics students.

Pre-service Home Economists in universities in North Central States of Nigeria as in other states in Nigeria are prepared so that they become proficient and skilled in all areas of clothing construction. To achieve this they are exposed to many courses since Home Economics is inter-disciplinary subject which includes clothing construction. This involves a lot of time and energy. Presently the way the time table in these tertiary institutions are structured do not give enough time for acquisition of the required knowledge, attitude and

skills in tailoring to students. These students are made up of both slow and fast learners that all need to be attended to. Moreover, books on tailoring are not easily available. Also, available personnel (Home Economics lecturers and Technical Instructors) to teach the skills involved in tailoring are few and thus making effective instruction for the students a big challenge. Instruction refers to deliberate effort to present learning experiences in a way that will help the learner achieve a desirable change in behaviour (Nworgu, 1992). One way towards deliberate effort for effective instructions, is to provide a guide to fall back on both within and outside the classroom period. Such guide could be self-instructional manual.

Self- instructional manual is a training or instructional guide that allows learnersô active participation in learning on their own by using the manual as a guide (Sleight, 1997). Self- instructional manual could be used by both the learner and the teacher either to learn or to teach respectively. Self- instructional manual is step-by-step information for carrying out practical skills which contains brief explanations and pictorial illustrations of performance of that particular skill. It requires the user to perform each step before going to the next (Dangana, 2010). According to Sang, (2010), Self- instructional manual is a guide that provides series of instructions aimed at teaching and learning. It is a book or booklet of instruction, designed to improve the quality of performed tasks (Alpha, 2013). Self-instructional manual, therefore, is a booklet of planned activities which sp ecifies or describes the resources and strategies employed in achievement of operational objectives.

A well articulated self- instructional manual should spell out in specific measurable terms of the overall goal of the manual. In tailoring techniques, identification of skills involved in application of each activity in garment construction and the specific objectives for each application is of basic importance to the achievement of overall goal of tailoring. Objectives generally provide information on what is to be evaluated. For objectives to be

achieved teaching and learning must be vigorously and effectively carried out, this includes employing appropriate training material in the course of teaching and learning.

Application of tailoring techniques in garment construction involves practical and as such, training for practical skill acquisition obviously involves training materials such as tools, equipment and facilities. Where practical skills are learnt without the required equipment and facilities, the skills turn out to be theoretical one which cannot equip recipient for employability. Oranu (2003) stated that, where relevant materials are not available or used in teaching /learning of practical skills teacher and learners tend to theorize the topic just to ensure that the learners pass examination. Alpha (2013) pointed out the need to use extensively the visual devices in training manuals. This is to avoid training materials being too windy. Such visual devices include- drawing, photographs, diagrams, maps among others.

Visual devices need to be thought of as an integral part of the training manual design and development process, and should be given the same degree of attention as written words (Rowtree,1998). As a written document, it provides a planned and logical organisation of practical content and the instructional process designed to meet the given educational goal. Dangana (2010) affirms that one of the most important contributions of self- instructional manual is the specification of how and the order in which the elements of the practical content is to be learnt which will be subject to evaluation by the learner.

Self-evaluation of objectives is a very important step in training oneself. According to Okoro (2006) self-evaluation is the appraisal of certain actions and the making of appropriate decision. Okoro further emphasised that the purpose of self-evaluation includes improving the learnersô performance and promoting achievement of the overall objective of the programme. Frequent self-evaluation reinforces positive behaviours, effective job performance and continued effective performance (Gail, 2002). Tasks in application of

tailoring techniques should be frequently evaluated so that the learner knows when a step is performed properly.

National University Commission (NUC) curriculum for Home Economics include among others the application of some selected tailoring techniques in garment construction in the advanced clothing course for the final year Home Economics students. Curriculum is an educational tool for achieving the desired objective. Thus, it aims at the total educational development of the individual through the acquisition of skills, knowledge and attitudes. According to Lemchi (2006), it is very important to follow the NUC curriculum in developing any instructional material for the university programme. Using the curriculum designed for the universities will enhance uniformity.

Curriculum design refers to the arrangement of the elements or components of a curriculum. It is a statement which identifies the elements of a curriculum, states what their relationships are to each other and indicates the principles for the administrative conditions under which it is to operate (Olaitan, 2003). According to Gay (1991), curriculum design is the organizational pattern or structure of a curriculum. Curriculum design is not a process. It is a plan which shows how the components or elements of a curriculum are brought together for the school to follow in providing learning activities.

In North Central Nigeria there are many Universities where textile and clothing and its related courses are offered but it is pertinent to note that the final year students of Home Economics that choose textile and clothing options are diminishing year after year due to the challenges that they face in acquiring tailoring skills which leads to their poor performance in the course (Result records from the exams office in North Central Universities 20012).

Since essential skills can only be acquired through repeated practice which will equally consume time, a self-instructional manual should be designed to assist the learner (fast and slow learners) in achieving the objective of learning by allowing the learner access to the

materials at will and convenience. Therefore, the use of self-instructional manual in tailoring techniques application will go a long way in facilitating skill acquisition among Nigerian students and graduates.

Statement of problem

The diminishing number of students choosing textile and clothing option in final year is alarming due to the technical challenges they are facing acquiring the skills in tailoring. Clothing and textile is made up of both theoretical and practical components. Among the practical components of clothing is the tailoring. Tailoring involves many sewing techniques ranging from underlining, lining, interfacing, pad-stitching to variety of other techniques. Studentsô acquisitions of the skills in tailoring techniques are facing some technical challenges.

The practical personnel (Home Economics Lecturers and the Technical instructors) to teach these courses to students are very few. Many of the available ones lack the competence in imparting the tailoring skills to the students and also those instructors who are well versed in tailoring skills, may not be willing and ready to spend extra hours in the tailoring laboratory with the students.

Clothing construction and tailoring textbooks which could be of a help to students are not easy to come by and the little ones available are very costly in the market thereby making it difficult for students to lay hands on. Home Economics being a multi disciplinary subject require that the students take on some courses in food and nutrition, Home management, chemistry, biology among others. The students are therefore faced with many subjects competing for their time which make them to be left with no other option order than to give little time to clothing practical to enable them acquire these skills. These tailoring techniques are not easily learnt by the students within a short time, thus, contributing to their poor performance in acquiring these skills.

The quantity of time allocated to clothing practical is too short and so, there is need for a practical manuals to convey the skills appropriately. With the limited number of skilled teaching staff on ground (Home Economics lecturers and technical instructors), a self-instructional manual is needed for both the fast and slow learner to follow with little or no assistance from their instructors who will only act as guides. This will go a long way in solving the issue of time scarcity for the learners as they can easily fall back to the manual any time they wish without restriction. A well developed self-instructional manual will guide the learner in making progress even when the teacher is not available.

Purpose of study

The main purpose 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 specific objectives of self-instructional manual in tailoring techniques within clothing construction course in Home Economics programme of the Universities.
2 determined tasks necessary for achieving skills in tailoring techniques (interfacing, underlining, lining, taping and pad-stitching among others)
3 determined step by step procedure of performing tasks in tailoring techniques (interfacing, underlining, lining, taping and pad-stitching among others) simplified from the existing literature.
4 determined the instructional materials (consumables) that could be utilised in learning tailoring techniques in university programme
5 determined the instructional tools and equipment for performing tailoring techniques tasks

6 determined the self evaluation guidelines that could be utilised in assessing the attainment of the tailoring techniques objectives in the university programme.

7 developed a draft of self-instructional manual for learning tailoring techniques in university programme

8 Validated the drafted self-instructional manual for learning tailoring techniques.

9 determined the effect of the developed self-instructional manual on Home Economics students in universities.

Significance of the Study

The contributions of this study are going to be of great importance to Home economics students, Home economics lecturers, technical instructors, Curriculum Planners, (NUC) Nigeria University Commission, families and Tailors.

It is expected that the findings of this study will be of great importance to the students of Home economics most especially in their clothing construction and textile course. This manual will assist them by helping them to work at their own individual pace. It will help the students to bridge the gap of insufficient time allocated to clothing theory and practical which has never been enough. Constant use of the manual will greatly help students to achieve perfection easily in the application of tailoring techniques as they will always find it as a text to consult when confusion on the next step to take arises.

The universities offering clothing course is expected to benefit from this study, as the use of the manual will assist the students minimize their damage to tools and equipment, wastage of fabrics and accidents in the laboratory. This is because; the manual is going to provide a step by step and systematic approach to carrying out every tailoring technique operation.

Home economics lecturers will equally benefit from this study as the developed self-instructional manual will greatly assist them in impacting tailoring skills to the students much

easier because the students will not rely only or wait on the teacher for some clearance to some applications in tailoring techniques skills but have the self-instructional manual for consultation and reference. This manual could serve as a reference point for the lecturers in carrying out seminars, conferences and workshops on application skills in tailoring techniques.

When the self-instructional manual is tested and found appropriate will serve as a reliable manual for learning practical skills in tailoring easily. The manual will be a valuable material to new and experienced technical instructors who will make use of it, for training and retraining of technical instructors. The technical instructors will find it easy to teach students by using the self-instructional manual. This manual will go a long way in making students to meet up with the little time allocated to practical clothing.

This study will also be beneficial to Nigeria University Commission (NUC) as it could adopt the result of the study to achieve uniformed instructional process for teaching and learning practical skills in tailoring in all the Universities that are offering clothing and textile course. This uniformity will ensure quality of instruction thus assisting in production of high quality garments among the garment production industries especially now that importations of ready-to-wear garments are banned in Nigeria.

Hopefully, tailors will benefit from this study. The manual is expected to be useful to training centres in garment making, in training their apprentices the skill in tailoring techniques. This will enhance their professionalism, thereby helping them in constructing well tailored garments that will really appreciate the test of time and demand which could bridge the quest our populace make towards ready to wear costly garments imported from other countries thereby saving the economy of this great Nation Nigeria

Above all , the issue of looking for white collarsô jobs for family members who under-went training with this manual will be minimised as they will not only help themselves but

will also be employer of others, thereby increasing their family income. Home makers can through the use of this manual recycle some garments which could have been wasted due to lack of knowledge thus saving money for the family.

Theoretical significance of this study was not left out. Derry (1993) propounded a theory that the development of a self-instructional manual is to help in managing large groups of students with a range of individual differences, who are working at several tasks. To achieve this, the author maintained that instructional sheets must be easily read and contain accurate information. With these advantages, the need for the development of instructional manual for teaching tailoring techniques is justified because the advantages it offers have positive implications in providing the needed focus for effective teaching and learning.

Research Questions

The following formulated research questions guided the study

1) What are the specific objectives of the self-instructional manual for teaching tailoring techniques to Home Economics students in universities?
2) What are the tasks necessary for achieving skills in tailoring techniques ï interfacing, underlining, lining, taping and pad-stitching?
3) What are the step by step procedure of performing tasks in tailoring techniques -interfacing, underlining, lining, taping and pad-stitching?
4) What are the instructional materials (consumables) that could be utilised in learning tailoring techniques in university programme?
5) What are the instructional tools and equipment for performing tailoring techniques tasks?
6) What are the self- evaluation guidelines that could be utilised in assessing the attainment of the tailoring techniques objectives in the university programme?

7) How do the Home Economics lecturers, technical instructors and expert tailors rate the developed self-instructional manual?
8) What is the effectiveness of the developed self-instructional manual on Home Economics students in universities?

Hypothesis

A null hypothesis was tested by the stu dy 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.

Scope of the Study

The study was delimited to self-instructional manual for learning tailoring techniques in universities as is contained in the National University commission curriculum, particularly, the study is delimited to the Universities in the North Central Nigeria- Federal University of Agriculture Makurdi, Benue State, Nasarwa State University, Keffi and Kogi State University . while University of Jos, Plateau State was used for a pilot study. This study was as well delimited to the task objectives of the manual, training materials, tools, equipment and task based inventory required for effective learning of tailoring technique skills were determined. The practical skills required for tailoring technique application- cutting, interfacing, underlining, lining, taping and pad-stitching were also determined

CHAPTER TWO

REVIEW OF LITERATURE

The literature reviewed for this study is organized and presented under the following subheadings: conceptual frame work, theoretical framework of the study, related empirical studies and summary of literature reviewed

Conceptual framework

- Concept of self-instructional manual
- Concept of tailoring techniques
- Concept of instructional methods
- Materials/ facilities for learning tailoring techniques
- Self-evaluation criteria appropriate for assessing the application of tailoring techniques,
- The Challenges the Instructional Guide Developer do encounter

Theoretical framework

- Curriculum theories/models
- Models for instructional guide development

Related Empirical Studies

Summary of Literature Reviewed

Conceptual Framework

A conceptual framework identifies research variables, and clarifies relationships among the variables. In this study the refore, the variables associated with the research were identified and discussed accordingly.

Concept of self-instructional manual

Self- instructional manual also known as instructional guide are instructional strategies developed to help the user or learner acquire mastery of certain vocational tasks. Instructional manual in form of workbooks, Self-paced guides, Reference manuals, Handouts, Job Aids, among others are in use to facilitate learning and ensure consistency. Fatimah, (2012) defined training manual as a book or booklet of instructions, designed to improve the quality of a performed task.

According to Barlup (2006), Self- instructional manual is a practical guide, which helps to direct students on how best to carry out a process in the absence of an instructor. Self instructional manual may be understood as a self-directed learning in which an individual student or trainee work with instructional material at his or her own time, without direct supervision or guidance from either instructor or fellow students (Johana, 2010). The component for such individual study materials may range widely, from print materials through audio tapes to interactive video, both in school and industry settings. According to

Dangana, (2010), self-directed learning, or self- instruction focuses on the skills and the abilities which individuals employ to guide their cognitive experiences in learning situations. Alpha (2013) added that, a training manual may be particularly useful as: an introduction to subject matter prior to training, an outline to be followed during training, a reference to subject matter after training, and as a general reference document. A training manual may form an important part of a formal training programme. For example, it may help ensure consistency in presentation of content. It may also ensure that all training information on skills, processes, and other information necessary to perform tasks is together in one place. Training manual can be designed to be used as: Work books ï used in training sessions to provide basic information, examples and exercises, Self-paced guides: designed for trainees to work through on their own, Reference manuals: for containing detailed information on processes and procedures, Handouts: provide general information to support training done during the session and Job aids: provides step-by-step instruction to be used in the work place.

Sleight, (1997) is of the opinion that, self-instruction is more efficient than classroom instruction in terms of development and teaching time. Once a self- instructional course is developed, only minimal time needs to be spent on it to maintain it. Instructors may spend some time coaching or mentoring learners taking the self instruction, but even then, they have more time to spend on other training projects.

One of the identified benefits of self-instruction is the capability of providing learners some control over the instruction. The type of learner control can range from simple controlling the pace of the instruction to letting learners set their own learning goals and find their own instructional materials. In computer-based training (CBT) learner control has often meant letting learners control only the pace of instruction. In hypermedia-based instruction it often means letting learners not only set their own pace of instruction, but also decide what

part of the instruction to take, and in what sequence. Self-instruction that permits learners to control the sequence of instruction is called non-linear instruction. However, Rodrich, (2011) observed that, self-instruction has it attending disadvantages such as the lack of an instructor to facilitate learning and the lack of other students with whom to share ideas. Self-instruction by its nature requires more from a learner then teacher-led instruction, since a learner motivates him/herself to begin and continue the instruction, let alone makes sense of it. Another noticeable disadvantage is that the instruction is often static, which means that it does not adapt to learnerôs progress. Though research is being done on intelligent tutors that can adapt the instruction to the learnerôs needs, but currently this is not easily done.

Self-instruction in Basic and Advanced Motor Skill Acquisition (BAMSA), using a print and video training manual, has been shown to be a short, simple demonstration. It may even be possible to become competent in trades without having to have teacher around you. Competency seems feasible by self-training using a poster and practice on skills alone, at least if the trainee has basic skills already (International Skills Federation,2007).

Self-instructional manual allows the learner access to instruction and at will and pace, thus making the appropriateness of its use in learning of skill-related tasks. The use of instructional manual in teaching and learning in formal or informal setup is in agreement with Guthrieôs skill acquisition model as stated in Alpha (2013). Guthrie skill model stated that, skill consists in the ability to bring about some end result with maximum certainty and minimum outlay of energy, or of time and energy. This great author identified four (4) properties of skills as; 1. It is goal-oriented, 2. It meets a performance goal with maximum certainty, 3. Use and application of energy is minimised, and 4. Skills are learned through practice.

Objectives of self-instructional Manuals

Objectives gives focus to every activity or process in teaching and learning situation, objectives gives direction to teaching and evaluation. Alpha (2013) pointed out that objectives should serve as bases for all evaluation in occupational programme whether focused in total programmes, or on the achievement of the individual student learners enrolled in a programme. The objectives of most value, if serving as a bases for assessing studentsô achievement in occupational programmes. Such objectives as application of tailoring techniques should be stated in performance form. The objectives must contain the task to be performed, the condition at which it will be performed and the criterion for assessment (Umoh, 2000).

Performance objective represent the intentions, expectation and aspiration of both the instructor and the student as related to the content of the instruction (Alpha, 2013). Performance objective provide a guide and create room for improvement of the instruction if not attained. Well written performance objectives help to reduce the confusion often associated with instructional planning. The less ambiguity surrounding a statement of instructional outcomes, the easier it is to develop effective instruction (Amuludum, 2011). A clear statement of objectives, the author further explained; help the instructor to better select appropriate activities to be used in instructional courses and programmes. Objectives help both the student and the instructor to better organise activities and efforts leading to the desired outcome. Performance objectives address what task, in the case of this study, tailoring techniques task the student can perform at a given instruction.

The objectives of the application of tailoring techniques in garment construction among others include equipping the students with saleable skills that can enable them to be self-reliant or be employable and live a productive life. All the necessary activities that will enable this lofty goal to be achieved are expected to be carried out by the teachers, students, school authority and even the larger society. These activities are presented to the learner in

form of learning experiences. Selection of learning experiences according to Offorma, (2012) can only be possible and effective if the objective is well known. Objectives are like the pillar that holds the whole gamut of instruction. In the case of application of tailoring techniques in garment construction, all the instructions a University student receives for four whole years plus the six months industrial experience are all meant to equip him/her with adequate skill that can afford him/her employability opportunity. In other words whatever skill that will make the student after graduation perform creditably, that is, produce garments that are well tailored-good quality, durable, beautiful and meet the taste of people is a primary objective. As stated before now, objective guides evaluation.

At evaluation level the teacher will look out or check whether the stated objective has been achieved. Defining goals and objectives serve as the foundation for the development of any activity. It will help in planning a logical chain of activities that will take place during the course of the training, lays the foundation for the assessment of the effectiveness of the training, helps the trainer establish a rapport with the participants, giving the opportunity to correlate the expectations of the participants with the programme of the training (Donkor, 2010).

Self-evaluation Techniques for Assessing the Attainment of Educational Objectives-

Self-evaluation can be referred to as an assessment a learner makes in order to achieve the skills as stated in the objective. For the purposes of this study, there are chances for the learner to assess him/herself to see the extent a progress is made. This self assessment will help the learner to make amend if at the point of evaluation and the skill was not accurately performed. This is in agreement to what Olaitan (2003) which referred evaluation to be defined evaluation as the process of determining the degree to which the objectives of an educational activity have been achieved.

Evaluation is also a means of ascertaining the success or failure of educational enterprise by means of some measurement or assessment (Wheeler, 1980). It enables the comparison of actual outcomes with the expected outcomes, and to arrive at conclusions about this comparison with a view to future action. Furthermore, Tyler (1975) stated that self-evaluation is a process for an individual to find out how far he/she have learnt from the developed and organized learning experiences and to see if what he/she learnt are actually producing the desired results. The above definitions can be regarded as broad representations of the term evaluation.

According to Gronlund (1985) self-evaluation can be seen from the instructional standpoint as a systematic process of determining the extent to which instructional objectives are achieved by learners. Oberg (1991) and Ezeugwu, (2006) similarly noted that self-evaluation is a judgment of oneself about the value of the degree and type of learning that has taken place. Self-evaluation is thus very important because without the learnerôs quantitative and qualitative comparisons of actual and expected outcomes, it is impossible for the learner to know whether objectives have been realized, and if they have been, to what extent.

In addition to assessing behavioural changes in individuals, it is necessary to make judgments about the objectives, suitability of learning experiences and content, organization, and the techniques used to attain them. Furthermore, Tyler, (1975) suggested that since it is a change in behaviour that an individual sought in education, then, there is every need to obtain evidence regarding whether the right attitudes, skills and values are acquired and this involves the use of appropriate self- evaluation techniques.

The techniques, instruments, methods, tools, or devices for self-evaluation, are means of obtaining information about changes that have taken place in an individual (Nzurumike, 1990). Various self-evaluation techniques are employed to show evidence, or lack of evidence of the behaviours indicated in the objectives. However, Tyler (1975) suggested that

self-evaluation instruments ought to satisfy three important criteria as follows; objectivity, reliability and validity.

1. Objectivity: an evaluation instrument is objective when two different persons who are competent in the use of the instrument, use it and obtain similar results in the assessment of the behaviour.
2. Reliability: This describes the quality o f the evaluation instrument in being consistent in measuring what it measures. Some authors refer to this criterion as ócconsistencyô (Wheeler, 1980; Ndubuisi, 1981; Gbamanja, 2002).
3. Validity: Tyler opined that this is the most important criteria and it refers to the capacity of an evaluation device to provide evidence to describe the behaviour which it was designed to describe.

In the selection of self-evaluation techniques or instruments, apart from considering the above mentioned criteria of validity, objectivity and reliability, the specific objectives to be evaluated or type of evidence required must be taken into consideration (Lemchi, 2006; Offorma, 1994; Nbubuisi, 1981). Certain techniques may be appropriate for self-evaluating cognitive objectives, but may not be suitable for affective or psychomotor objectives. A combination of various self-evaluation techniques is thus necessary so that they will complement each other in assessing the attainment of objectives.

Various authors have outlined various self-evaluation techniques, as appropriate for assessing the attainment of educational objectives. In this study, the following self-evaluation techniques were most appropriate-

(a) Use of pre-test and post-test technique or 'revised pre-trained ability'

(b) Use of finished product

(c) Projects and

(d) Rating scales

Offorma suggested that all the techniques mentioned above are very appropriate in evaluating or assessing the psychomotor behaviour of an individual and as such were found very appropriate for this study. According to Tarek (2013), the use of pre and post test is a useful tool and helpful illustration of the challenge in measuring improvement in ability after training, using self-assessment. A vital element within the tool is the assessment called 'revised pre-trained ability', which is carried out after training. The 'revised pre-trained ability' is a reassessment to be carried out after training of the ability level that existed before training with a self-instructional manual. This will commonly be significantly different to the ability assessment made before training with the self-instructional manual because by implication, we do not fully understand competence and ability in a skill/area before we are trained in it. People commonly over-estimate their ability before training. After training many people realize that they actually had lower competence than they first believed (i.e., before receiving the training).

Additionally, in many situations after training, people's ideas of competence in a particular skill/area can expand hugely. They realize how big and complex the subject is and they become more conscious of their real ability and opportunities to improve. Because of this it is possible for a person before training to imagine (in ignorance) that they have a competence level of say 7 out of 10. After training their ability typically improves, but also so does their awareness of the true nature of competency, and so they may then judge themselves - after training - only to be say 8 or 7 or even 'lower' at 6 out of 10. This looks like a regression. It's not of course, which is why a reassessment of the pre-trained ability is important. Extending the example, a person's revised assessment of their pre-trained ability could be say 3 or 4 out of 10 (revised downwards from 7/10), because now the person can make an informed (revised) assessment of their actual competence before training (Tarek, 2013).

This is important because without knowing where the learners are at the beginning, it would be difficult to ascertain what behavioural changes that have taken place as a result of the course of the use of self-instructional manual.

Development of self-instructional manuals

To develop an instructional manual, Ajayi (2000) outlines a general guide as follows:

i. The objectives of the modules must be clearly and simply defined so that they are completely understood by both the implementer (teacher) and the consumer (student). Furthermore, they should be objectives that are intellectually empirically attained, and are possibly measurable. The objectives may fall in three major categories: a. cognitive b. psychomotor c. affective.

ii. The most effective learning experience that will contribute directly to achieving the objectives are those that involve materials with which the implementer (teacher) and the consumer (student) are familiar.

iii. The evaluation of student achievement should be frequent and the student should receive information (feedback) promptly about results so that corrective measure can be taken. To some extent, the sizes of the modules are influenced by the need for prompt feedback.

Two models for instructional manual development were reviewed under this study. To develop an instructional manual suitable for learning practical skills in tailoring, the researcher will be guided by the principles outlined by the experts above. These principles are Analysis, Design, Development, Implementation, and Evaluation. Furthermore, the practical advice of the experts to determine the major units, listing the doing content, listing the knowing content, listing the steps in doing content, and outlining the knowledge related content will also be very helpful for this study.

According to Olaitan, et.al (1999), a functional philosophy of vocational education should lend it towards an effective link between man and job. They affirmed that the philosophy has the following characteristics

- Vocational education only functions in proportion as it will enable an individual to actually perfect in doing a job.
- Vocational education must establish appropriate work habits
- Instructional content are specific
- The basis of admission of interested candidates will be based on the ability of these candidates to benefit from the instruction.
- Vocational education is meant for all groups of people irrespective of age.

They emphasized that success in vocational education can only be achieved when all these characteristics are met.

Self-instructional manual development theory is based on learning theory. This theory is an aspect of psychology which forms the basic foundation of all the works the instructional developers do. In nut-shell, the role of instructional manual development theory is the guidance it provides to the developers to overcome problems in developing process. This position is consistent with Reigeluthôs (1987) assertion that instruction is anything that is done to help someone learn, and instructional manual development theory is anything that offers guidance for improving the quality of that help. It is important to know that instructional manual development theory is a designed science, because, it provides guidance on the tasks of designing learning experiences as well as providing a bridge to the descriptive science of learning theory.

Instructional development theories are categorized into two- conceptual theories which are explained as the relationship between variables, and procedural theories which explains how to accomplish a certain procedure (Dangana 2010 and Seels 1997). Summarily,

the descriptive sciences develop conceptual theories while design science make theories that will explain how various procedures work and as well, link these theories back to the more conceptual theories of learning theory and psychology.

The introduction and subsequent ñsorting-outò of the various learning theories and associated instructional manual design strategies can be somewhat confusing. This state of cognitive dissonance is resolved by the use of Schunkôs (1990) six question for distinguishing one learning theory from another. The last two questions were added for the instructional manual developers. The six questions include-

1. How does learning occur?
2. Which factor influence learning?
3. What is the role of memory?
4. How does transfer occur?
5. What type of learning is best explained by the theory?
6. How should instruction be structured to facilitate learning?

Concept of Tailoring Techniques

A tailor is referred to as a person whose job is to make suits and jackets for individual consumption**.** Tailors have been well trained in construction of garments for their use and for the use of others. Tailoring is seen as a process of acquiring skills and it needs intensive teaching with an organized practical guide to impart the necessary skill and knowledge. Tailoring is a skill oriented programme.

According to Nwabunwanne (2001) verbal instruction only will not promote skills development in any practically oriented programme like tailoring programme. Olaintan (2003) suggested that the teacher should play the active role in teaching and illustration since effective learning is guaranteed when the teacher injects actions into verbal instructions.

Nwabunwanne (2006) stated that when students observed the teacher demonstrating the use of equipment that is available, they tend to learn faster.

Molokwu (2000) also noted that demonstration of skills during practical classes gives room for students to pursue technological, innovation and entrepreneurial development. In teaching of tailoring, students must be made to understand the need for demonstrational techniques. Ezeoguine and Nyong (2008) pointed out that in practical oriented courses like garment construction, students should be made to do more work with their hands. This, they claimed will make skill acquisition easier and faster to obtain. They further suggested that grouping techniques should be employed to make work faster for the teacher and much easier for the students. To do this according to Awosika (2002), a good knowledge of the most appropriate, stimulating challenging and effective strategy should be employed to put concepts across the students.

In teaching of tailoring, grouping techniques with the use of demonstrations are the best and fastest techniques that help the learner in acquiring the skill. This is because students working in small groups would survey the problems of their fellow individuals and formulate acceptable common solutions out of various available options to solve the problems. Working in-groups would help members to be purposeful, proceed in orderly manners, identity problem, find common fronts to solve them and ensure individual growth. Several design construction techniques are involved in the constructions of tailored garments some of these techniques include underlining, lining, interlining, interfacing, application of tape among others (Frings 1992).

Underlining: is a multipurpose technique in garment construction. It gives the designer more control with fabrics and more options for their use, Betzina (2009) stated some important functions of underlining in garments as follows:

1) It helps to stabilize loosely woven fabrics.

2) It strengthens delicate fabrics

3) Eliminates seam allowance show-through.

4) Hides hand stitching.

5) Adds warmth to garments

6) Adds bulk to fabrics and

7) Reduces wrinkling.

Often people do get confused with underlining and lining. Lining and underlining in garment construction are two different procedures, and depending on their purpose, one or both can be use in a single piece of clothing. The steps for applying underlining are the same of every combination of underlining material and fashion fabric. (Betzina 2009.) Underlining could be described as jack-of-all-trades. This is because it serves many functions in garment production.

Underlining according to Henry et al (2006) and Betzina (2009), adds stability and strength to light weight fabrics and reduces wrinkling. They also noted that underlining enables one to use a fabric that may be too flimsy by itself for the garment one may have in mind. Underlining reduces the transparency of white or pastel fabrics, which prevents seam allowances from showing through. It can eliminate the shadow from a brightly coloured blouse tucked into light-coloured pants, and it hides panty lines. During garment construction, underlining fabrics are cut from the same pattern pieces used for cutting fashion fabric (Vanderhoff, et al 1985). This is because, when they are cut from the same pattern piece, they will fit neatly without giving the designer much stress.

Lining: Lining the garment is the final steps in the construction process and one of the most exciting steps in tailoring. This is to say that another type of fabric comes into use while constructing a garment. Such fabric could be elegant in colour, design or weave. Lining is generally used to give a finished look to the inside of the garment, prevents seams from

ravelling, reduce wrinkling, help conceal some figures faults and makes a garments easier to slip on and off.

Interfacing: Interfacing is the third layer of fabric applied between two other layers to provide shape, stability and structure to garments and to enhance durability. It is used in buttonhole areas to keep them from stretching and distortion. According to Barlup (2006), interfacings are used in collars and cuffs to add crispness and in facing to give stability. In tailoring, interfacing allows the garment to retain the shape that is built in during the construction process (Henry et al 2006). It can equally be used for special dramatic effects in construction. To understand interfacing, one has to know that it has different types and one of different fibre quality (Buarlup 2006). Woven interfacings are stable. They offer firm support and are available in many weighted. Weft and Warp insertion interfacings are made of synthetic fibres. They are neither woven nor knit and are not suitable for quality garments, but for craft projects. .

Taping: Taping is one of the construction techniques in tailoring process. Tapes especially the cotton firmly woven and stable type is used mainly for staying and strengthening seams, especially in tailored jackets and coat. It is available in black and white, in width of 6,12,20 and 25mm.

Pad-stitching operation

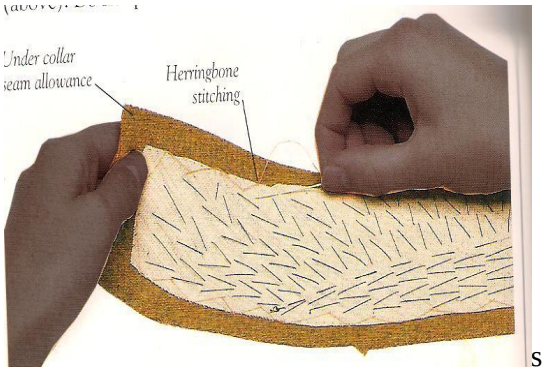

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Fig. 1 Pad-stitching application process

Pad-stitching: pad-stitches are used primarily in tailoring, to attach interfacing to out fabric. When the stitches are made short and close together, they are also helping to form and control shape in certain garment section, such as a collar or lapel. Longer padding stitches are used just to hold interfacing in place: they are like diagonal tacking expects that they are permanent and stitches are shorter.

Characteristics of a well-tailored garment: In tertiary institutions, students are being trained to be equipped with the necessary tailoring techniques for practical capability. They are to have all the necessary steps for well-tailored garments at the tip of their fingers. This will make them professionals on the job. (Ledbetter and Lansing 1981). The following are the specific characteristics of well-tailored garments:

- Collar and lapels that is firm, roll smoothly, sharp edges without the steams around the outer edge being obvious, and are identical on both sides.
- Lapels rolls lines being firm, stable and conforms to the body; does not gap or stand away. The front edge should be firm, straight and perpendicular to the floor.
- Buttonholes should be identical, firm, and flat, have straight edges, square corners and show no sign of ravelling.
- Pockets should be firm and have crops edges, straight lines are straight and or curves, which are smooth and even, and they should be smooth when worn.
- Shoulder should be firm enough to be smooth and allow ease of movement without stress on the fabric.
- The sleeve should hang straight, and the sleeve cap smoothly rounded without any wrinkles.

- The sleeve and the button hence are invisible from the right side and are smooth, firm and flat.
- Vent should be straight, smooth and firm, and have no obvious steams along the edges.

Concepts of Instructional Materials/Facilities

In teaching tailoring skill, there are tools that are being used to make teaching and learning of tailoring easy. Sewing tools ideally are equipments used during the different stages of sewing. These tools can be divided into six groups according to their uses measuring, pining, marking, cutting, stitching and pressing.

Measuring Equipment: Measuring tools are among the most important items in tailoring. They include; Tape measure, Sewing or seam gauge and yardstick or meter sticks, others include transparent ruler, Hem gauge, and French curve and skirt marker.

Pining equipment: Pins are necessary for many stages of sewing from laying out patterns, to holding layers of fabrics together while stitching to marking the hem line. Weber (1990) suggested that pins should be sharp slender and smoothly finished to avoid damaging your fabric when used. Pins are of different categories. They include silk pins, ball ï headed pins, T ï pins and pin cushion which some tailors can wear around their west to avoid the swallowing of pin or prevent the frustration or spoiling of the whole pin box to search for the appropriate pin to use.

Cutting equipment: Cutting tools are used for cutting out your fabric pieces, trimming, clipping and other detail work. Henry et al (2009), Weber (1990) and Vanderhoff et al (1985), cutting tool should be sharp to avoid inaccurate cutting. Cutting tools in tailoring include; Shears, Scissors, Pinking or Scalloping Shears, Embroidery Scissors, Seam Ripper and Tread Clipper.

Marking equipment: In garment construction, marking tools are needed to transfer symbols and lines from pattern piece to the fabric. Long (1997) and Weber (1990) suggested that accurate marking help to make construction easier. Different marking equipments are used in different fabrics. Marking equipment include; Tracing Wheel, Tracing Paper, Tailors Chalk and Ordinary Thread. When markings are strictly utilized in tailoring, well-tailored garments are usually produced.

Stitching equipment: In tailoring. most projects can be made almost entirely by machine stitching, though, some hand sewing are usually needed to complete the project (Henry et al 2006). The most stitching tool is the needle that can come in different sizes and types. It has long been observed that the smaller the number, the coarser the needle. Finer needles are most appropriate for delicate fabrics. Other stitching equipment includes; Thimble, Needle-threader, Bodkin, Loop Turner, pointer, Sewing Tape and Basting Tape.

Pressing equipment: In teaching tailoring, pressing equipment is always stressed upon. This is because every beat of the construction need to be helped out with pressing. Pressing helps to give a professional finish to a garment, so, it is very important to always press as you sew. The most essential pressing equipment we need in tailoring are; Iron, Ironing Board, and Press Cloth. Other special items used in pressing include; Tailorôs Ham, Sleeve Board, Pressing Mitt, Seam Roll, Point Presser and Pounding Block or Clapper. (Webber, 1990)

Instructional facilities can be referred to as the physical means by which the teacher extends his/her thinking to the learners (Agwasim and Agwasim, 1995). Instructional facilities are also referred to as instructional materials and as curriculum materials (Olaitan and Agusiobo, 1981). Instructional facilities/materials serve many purposes in the teaching and learning process, and are not just additional devices to be used if time permits.

According to Olaitan and Agusiobo (1981), they are carefully planned and integrated part of the teaching and learning process. Instructional facilities are an essential part of an effective

curriculum. When they are well planned, they are significant adjusts to meaningful learning experience (Agwasim and Agwasim, 1995). There are several types of instructional facilities/materials available, thus Alpha (2013) rightly noted that the list is in-exhaustive.

Furthermore instructional materials could be locally produced, and these are either made by the teacher, or the teacher and the learners. Also, there are commercially produced materials, which are available in large quantities from the manufacturing firms. However, whatever the type, there are some criteria that should be considered in their selection. These according to Olaitan and Agusiobo (1981) include;

(a) Purpose: The specific instructional or informative purposes the material will fulfil should be considered. For instance, will it be required to provide useful information to assist in developing skills, to build appreciation or other important objectives?

(b) Content: Whether the material is appropriate for the content of the curriculum, whether it is accurate, up-to-date and pitched at the proper level of difficulty for the learner who will use it.

(c) Appropriateness: Whether the material is suitable for the lesson, demonstration or field trips.

(d) Cost: Whether the material is within budget limitations, and whether less expensive or less complex materials could possibly produce similar or better results.

(e) Circumstances for use: Whether the instructional material will function effectively in the circumstances or environment in which they are likely to be used, and whether materials will work for small or large groups or for individual study.

There are also certain factors that affect the use of instructional materials and these include;

(a) Financial constraints: Lack of enough funds to teachers for the preparation or purchasing of relevant instructional materials.

(b) Examination consciousness: The system of education whereby efforts are mainly geared towards passing examination, results in teachers using most of the time the lecture method, concentrating on giving notes which the learners copy and produce back during examination.

(c) Neglect: Adequate emphasis is not usually given to the u of instructional materials in curriculum planning and implementation.

(d) Lack of expertise: Most teachers and educators do not posses adequate experience in the planning, preparation, and use of instructional materials.

Furthermore, instructional materials have been classified in various ways by authors. Agwasim and Agwasim (1995) classified instructional materials into the following seven categories:-

(a) Printed materials e.g textbooks, teachers guide, workbooks, dictionaries, encyclopaedias, atlas magazine, newspapers etc

(b) Flat pictures e.g photographs, study prints, illustrations etc

(c) Projected pictures e.g slides and film strips, opaque projections, over head projections, motion pictures, television programmes etc

(d) Auditory materials e.g microphones, public address system, radio, tape recorders, phonographs, earphones etc

(e) Graphic materials e.g graphs, diagraphs, sketches, cartoons, maps etc

(f) Community resources e.g resource persons, manufacturing firms, museums etc

(g) Miscellaneous instructional materials e.g chalkboards, felt boards, magnetic boards, real objects, models etc

Mbossoh (1994) also grouped instructional materials into three groups ï audio, visual, and audio-visual, depending on the senses they appeal to. Mbossoh opined that audio instructional materials include tape cassettes, phonograph records, radio sets, telephone etc.

The visual instructional materials mat etc. The visual instructional materials illustrate visual stimuli and symbols, and include slides, filmstrips, overhead transparencies etc, that are commonly referred to as projected visuals. Non-projected visuals include still pictures, chalkboard, bulletin board, drawings, charts, models, posters, and real-life specimens or objects. The audio-visual materials, on the other hand, illustrate both audio and visual stimuli and symbols simultaneously. These include videotapes and machines, sound filmstrips, television etc.

Similarly, Olaitan and Agusiobo (1981) classified instructional materials into three categories and presented this diagrammatically as shown below;

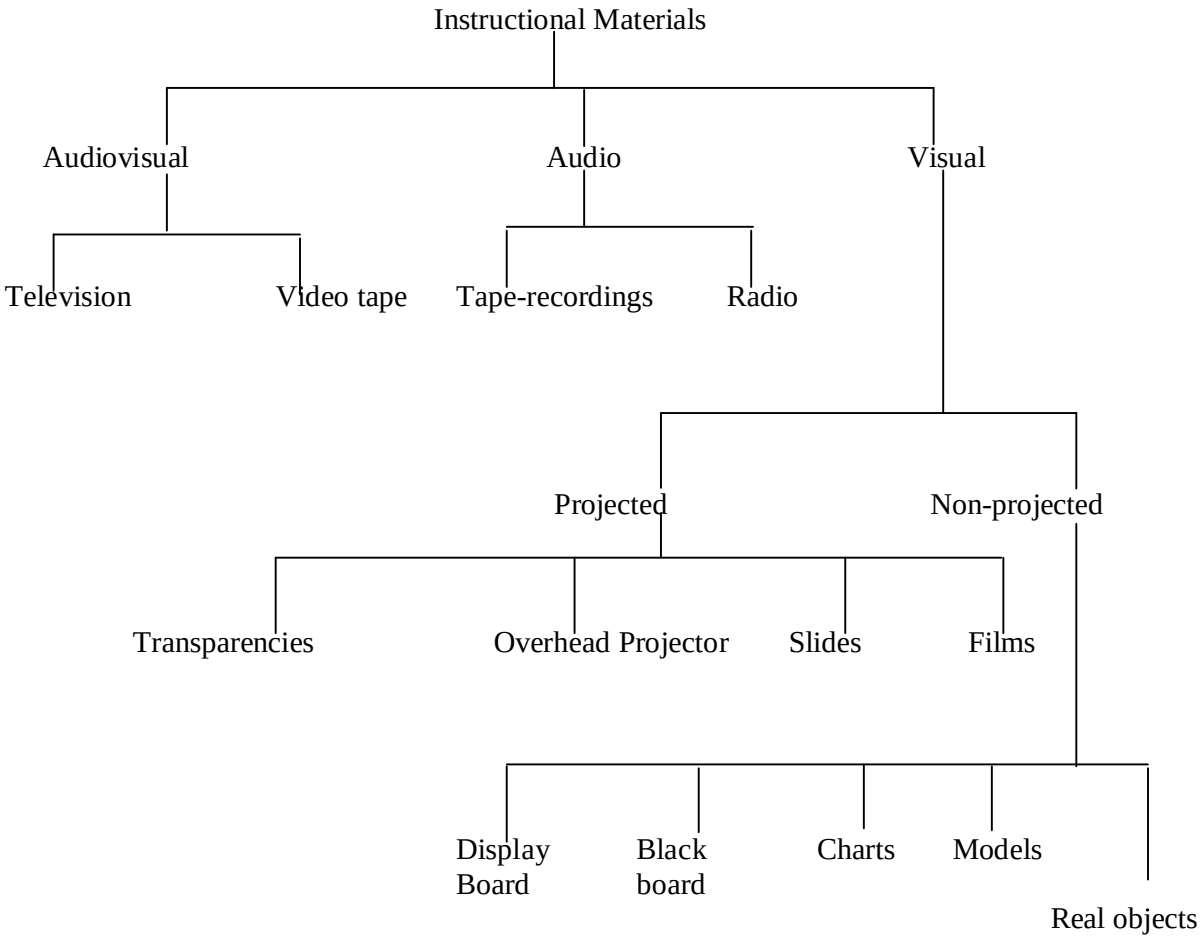


Fig. 5: Classification of Basic Instructional materials. Source: Olaitan and Agusiobo (1981)

From the foregoing, it is obvious that a wide variety of instructional materials are available for teaching and learning in various fields of learning. Undoubtedly, these materials are very useful in providing meaningful learning experiences. However, Agwasim and Agwasim (1995) cautioned that for the materials to be effective, they must be wisely selected, prospered and intelligently used. Olaitan and Agusiobo (1981) regretted that adequate emphasis is not usually given to the use of instructional materials in curriculum development and implementation.

Consequently, determination of the appropriate instructional facilities/materials that could be employed in providing the acquisition of skills in tailoring techniques in the Home Economics programme was deemed necessary as an aspect of this study.

Tailoring techniques application processes

In garment construction, there are some specific construction processes that are supposed to be taught in tailoring class. These specific construction processes are what determines the quality of a garment. When they are poorly constructed, the consumers will look at such garment as inferior. If adequate teaching and learning take place in the study of these specific construction techniques, garments produced here in Nigeria will challenge their counterparts in other developed countries. The specific construction techniques include: application of underlining, lining, interfacing, tapping and pad-stitching techniques.

Application of Underlining-

In applying underlining in garment constructions the following steps or guidelines will help the teaching and learning of underlining application:

Experiment and find out the right underlining fabric that is suitable for garment under construction. Preshrink both the fashion fabrics and underling fabrics and cut both of them out from the same pattern pieces. Trim the underlining along the marked hemline and pin it to

the fashion fabric. Adjust for turn of cloth along the lengthwise edges and hands baste the pieces together. Finally, baste along the centre of the darts to prevent them from shifting when sewn. Once the pieces are basted together, treat them as a single fabric when constructing the garment (Betzina 2006).

It is very important to note that while the basting, one has to place curved pieces, right side up, over a curved surface, such as a pressing ham or oneôs thigh. This will help to distribute ease and baste from the right side. It is also important to know that the use of machine basting is faster than the use of hand but it is not advisable because according to Betzina (2009) and Cream (1996), machine basting causes the fabric to draw up slightly, creating puckers in the completed garmentôs seams. The use of dots of glue in the seam allowance to attach the underlining to the fashion fabrics is faster but it is not advisable because it makes seam allowance stiff.

Application of Lining:

There are three means of applying lining to garments in clothing construction. These means are: (1) By hand (2) by machine (3) by a combination of the two.

The machine method is popular for those who are interested in a quick application. Those tailors that are producing ready- to- wear apparel mostly use this method; especially in less expensive garments which are usually poorly fitted.

Hand method of lining garments is the best among the three. Ledbetter and Lansing (1985) noted that application of lining by hand is more carefully done. This is because; each separate piece of lining is sewn with hand to its counterpart fabric or garment. A minimum amount of machine stitching is involved and it is done primarily on lengthwise sleeve seams, dart and tucks. Hand method is durable and probably produces the best fit (Henry et al 2006).

Lining of a garment should match with the outer fabric in weight, quality and cleaning

requirements. For ease of wear and removal, Cream (1996) emphasized that the designer should make pleats of the centre back in case of jacket construction.

Application of Interfacing:

Fig: 3 Interfacing process

Interfacing is of two types. There is sew-in interfacing and fusible interfacing. Sew-in interfacing are stitched by hand or machine to the garment while fusible interfacing have a resin coating on the back that fuses to the fabric when steam, heat and pressure are applied. Fusible interfacing is quick and easy to use, and it gives a crisper look after fusing.

Fusible interfacings are for stabilizing small areas such as buttonholes, slashes and plackets. Fusible interfacing is an excellent choice for interfacing fabrics that fray because they ñsetò the yarns. When choosing interfacing, one needs to consider the weight of the

fashion fabric, the area in which it will be used, the amount of shaping or stiffness desired as well as the type of care the fabric will receive.

The interfacing should not be heavier in weight than the garment fabric, although it can be crisper. Ideally, the interfacing should be slightly lighter in weight than the fashion fabric. To determine whether or not an interfacing is compatible with the fashion fabric, one drapes it and the fabric into a shape that resembles how they would be used; such as a cuff or hem edge to check for the crispness and shaping desired. One should not forget to preshrink the interfacing in the same manner as the outer fabric. For washable interfacings, one folds it loosely and immense in a tub of hot water for 15 ï 20mins or a tub of water at room temperature, removes excess moisture with towel and air dry.

When applying on garment, one places resin side down over the wrong side of garment piece one should hold the iron about 2.5cm or 5cm above the piece and steam for 5 ï 7 seconds. Alternatively when interfacing, glue side is laid on top the wrong side of the fashion fabric, interfacing is dampened spray bottle filled with water. This is because the interfacing will only get shrink when it come in contact with water.

Peggy (2008) noted that one has to dampen the interfacing prior to adhesion or else interfacing will shrink after adhesion and cause fabric to bubble. Set iron for temperature compactable to the fabric. Starting at one end of the fabric one should press 10 seconds, beat by beat until all areas have been adhered. Then the right side of the fabric it ironed to be sure interfacing has adhered (Vanderhoff 1998).

Application of Tapping:

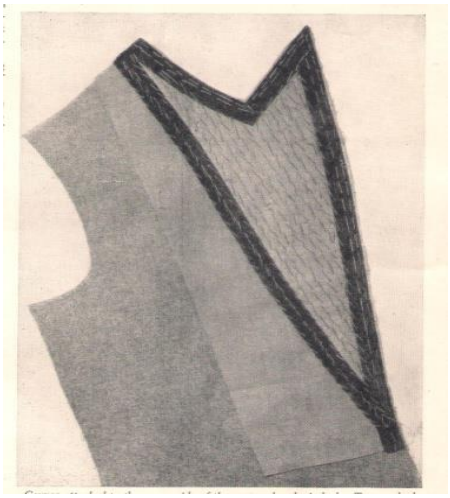


Fig: 4 Taping the lapel

Procedures for taping a garment

Lay the garment flat on the table with the interfacing up.

Pin the tape in place, starting 1cm beyond the end of the gorge line and placing it so that the tape edges covers the edges of the interfacing by a little less than 3mm. Slightly ease the tape over the point or curve of the lapel and down to 1.3cm above the lower end of the roll line.

Then, place pins at right angels to the tape edges. Ease tapes more for 2.5cm across the roll line. From that point to the button of the garment, hold the tape taut. If there is a curve at the lower edges, slightly ease the tape around the curve, keeping the outer edges of the tape smooth. At this point, the inter edges will ripple. When this happens, stop tape at the hemline for a right-angled front corner. Baste the tape in place. Pull along the edges of the garment and make necessarily the front curves outward, the tape is too loose but if it curves inward, the tape is too tight (Vanderhoff 1986). If lapel does not roll at the roll line, the tape may not be ease enough across the end of the roll line. With stitches about 6mm long, hand-stitch the outer edge of the tape to the fashion fabric by picking up a few fibres of the fashion fabric.

Mitre the tape at the point of the lapel by trimming the excess tape but do not clip through the outer edge of the tape at any time. Notch the tape around the lower curve to allow it to lie flat. Keep both sides of the garment identical.

Concept of Instructional Methods:

According to Onwuka (1981), various methods have been tried or used by educators in different parts of the world in the attempt to achieve desired objectives. Selection of the appropriate method to be used in teaching and learning is very important because the method adopted by the teacher may promote or hinder learning. Onwuka further noted that instructional methods used may sharpen mental activities, or may discourage initiative and curiosity thus making self-reliance and survival difficult.

Sailor et al. (1981) identified some teaching methods and these include, lecture, discussing, questioning, group investigation, independent learning, programmed instruction, role-playing, simulation and games, synaptic, viewing-listening, community activities, among others. Similarly, Agwasim and Agwasim (1995) outlined 18 instructional methods that can be employed in teaching and learning. These are as follows; demonstration, lecture, storytelling, reading, use of resource person, interview, role-playing, discussion/group discussion, laboratory method, case study, game, survey, field trip, motion picture method, supervised study, independent study, learning packages, and programmed instruction.

However, Olaitan and Agusiobo (1981) grouped the instructional methods into three distinct areas as follows;-

1. Group methods or techniques: These include the following; (a) Discussion method, (b) Buzz method, (c) Brain storming method, and (d) Problem solving method
2. Teacher-Initiated methods or techniques: These include; (a) Lecture method (b) Demonstration method (c) Question and Answer method, and (d) Field trip method.

3. Dramatic method or techniques: These include the following; (a) Role playing method, and (b) Socio-drama method.

A brief explanation of each of the instructional methods by Olaitan and Agusiobo (1981) is summarized as follows:

Discussion method: Involves group interaction in which an individual expresses herself and listens also to the opinion of others. It is one of the most effective techniques for stimulating the teaching and learning process. It is also believed to be superior in contributing to the application of the material learned and in building attitudes that are important in shaping behaviour patterns.

Buzz method: Refers to a group activity designed to divide a large class into smaller groups for discussion purposes. Groups are usually composed of five to eight members, depending on the size of the entire class. This method is regarded as effective in dealing with difficult questions, problems or controversial issues. This is because small groups stimulate individual thinking and increase flow of ideas and freedom of expression.

Brainstorming: Valuable for stimulating and generating ideas and improving studentsô ability to express themselves. It involves co-operative thinking by a association, spirit of competition, free use of imagination, and makes for active participation.

Problem solving: Method of correlating sense, experience and already accepted or established thought. It involves identifying the problem, planning alternative behaviours that may resolve the problem, activating the most promising of these behaviours, evaluating the consequences, and applying the process to new problems as they arise. It contributes to the development of reflective thinking, creative expression, critical analysis, and logical reasoning. It is also capable of providing valuable benefits with respect to application to future individual and group problems.

Lecture method: A technique by which the teacher seeks to create interest, influence, stimulate, or to develop critical thinking. This is done mainly by use of lectures, with minimum class participation. Also a number of related instructional materials are used to supplement the lecture method. This is because of the tendency of the method to bore the learners.

Demonstration: Involves the presentation of procedures and processes to be learned. In addition to providing concise information, demonstration is a means of exemplifying high standards for the process being presented. It creates a high degree of attention concentration and interest and is particularly valuable in learning specific skills.

Questions and answers method: Usually developed in a discussion typesetting and encourages participation of learners. It can also be used in conjunction with other methods. It is especially valuable in situations that need clarification.

Field trip method: Involves trips to various places in the community to obtain information directly by seeing things as they really are. It provides an on-the-spot observation of some specific process or activity. Field trips help to bridge the gap between the school and the community, and afford learners the opportunity of understanding of a range of occupations or professions. Critical thinking is developed and horizons are broadened by seeing how people work in different occupations. Furthermore, personal traits of responsibility, cooperation, dependability, and courtesy are developed.

Role-playing method: Involves spontaneous acting out of a situation. It is a form of improvisation in which the participants assume the identity of the other persons and then react, as they think their assumed character would, to a particular set of circumstances. It assists the learners the opportunity to explore human relations problems, including feelings, attitudes, values and problem-solving strategies.

Socio-drama method: Another dramatic technique characterized by unrehearsed and spontaneous dramatization dealing with problems or issues of significance in a social relations situation. It thus addresses social problems which are acted out by the group. It can be used to help develop desirable social skills and behaviour patterns, such as loyalty, leadership etc. Olaitan and Agusiobo (1981) further recommended that a variety of these teaching methods should be used in teaching and learning in order to achieve specified objectives. Bello and Willey (1981) equally added that teachers should not confine their teaching to the use of only one method, but that a variety of methods should be used for effectiveness. Below is a summary of other instructional methods outlined by Sailor et al (1981), and Agwasim and Agwasim (1995).

Interview method: Prepares learners to develop interest, ability and skills to talk with people outside the college community. The teacher usually helps the learners to draw up some questions, and the learners either in small groups the learners to draw up some questions, and the learners either in small groups or individually go out and conduct the interview on the pre-selected topic. It affords the learners the opportunity to learn the art of questioning, listening, and collating results to enable them generalize.

Story telling method: May involve telling a fictional or a factual story. The important thing is that the story should be relevant to the curriculum objectives. Agwasim and Agwasim (1995) however, observed that although the technique seems to have been overwhelmed by modern methods of teaching that stress the use of technology, its importance is not completely lost.

Teaching through a resource person: Involves using an outside, usually an expert in a particular field to teach the learners in the area or topic where he/she has expertise.

Case study method: involves a carefully written record of facts from the observations or experiences of a person or group of persons. The case is read to the learners and in the light

of the facts, a general discussion will be carried out. The class may be divided into groups for purposes of identifying the important points. However, Agwasim and Agwasim (1995) warned that conclusions and possible solutions must be drawn cautiously.

Simulations and Games: Simulation is a representation of selected aspects of social and physical reality, with which learners may interact. It provides a learner an opportunity to respond to a lifelike situation and enable him through feedback of information to see the consequences of his action. On the other hand, games are used to simulate life like situation and problems, hence their being discussed together. They are both similarly guided by a set of rules. After a simulation, the teacher usually leads a group discussion exploring insights gained from the simulation. Agwasim and Agwasim (1995) reported that some business executives use games to simulate actual problems and situations.

Supervised study method: Here the class chooses a broad topic for exhaustive study and is later broken down to sub-topics and assigned to individual learners to carry out a thorough study, and then report to the entire group. The teacher supervises each learner, helps to suggest the resources the learners could use, ways to collect important information, and ways topic organize the reports such that the reports when integrated, will give an exhaustive picture of the topic being studied.

Independent study method: Involves the learner proposing a study, project, investigation, research or production of something which he/she will carry on largely independently but with the approval of the teacher. The method gives the learner maximum freedom with minimum supervision and direction. Sometimes self-evaluation devices are used to monitor the learners progress. The method is capable of helping learners develop a specialized talent or capability and also self-defectiveness.

Programmed Instruction method: Involves a carefully planned programme which allows the lear ner to proceed at her own pace, and to discover relationship on her own. It is an

individualized activity. Although a group of learners may be using the same programme, they usually progress at different rates due to individual differences. However, the teacher is responsible for selecting programmed materials and monitoring of the learners progress through the material.

Task Analysis

Related concept upon which development of instructional guide for teaching practical skills in tailoring techniques is based on task analysis. Before materials could be developed for training people to perform specific tasks, a thorough understanding of the nature of the task must be achieved. Giachino and Gallington (1979) noted that the process of identifying the major learning activities of a job is referred to as task analysis. In the same way, Finch and Crunkilton (1979) defined task analysis as a process where tasks performed by workers employed in a particular job are identified. Hershbach (1985), also indicated that task analysis lends validity to the content selection process, provide a means of effectively incorporating learning theory and practice into instruction development and methodology. He further noted that it yields results application to specifying performance objectives, designing instructional activities, and determining teaching strategies and evaluating performance.

Silvius and Curry (1971) and Dangana (2010) viewed task analysis as the systematic analysis of the behaviour required to carry out a task with a view to identifying difficulty and the appropriate training techniques and learning aids necessary for successful instruction. The essence of tasks analysis is to avoid the indefinite job description which could not provide insight on what should be taught to prepare a student for a skill/job. Therefore, task analysis describes the specific task in a logical sequence that covers a skill/job. Task analysis has long served as the primary means of deriving instructional content for occupational education curricular. Through task analysis, work activity is broken down into fundamental element which in turn forms the substance of organizing the pattern of instruction or evaluation. The

advantages of task analysis in instructional materials development according to Olaitan, Nwachukwu, Igbo, Onyemaechi, and Ekong (1999), includes:

1. It provides basis for collecting interrelated information about work in order to allocate priorities.
2. It helps to make decisions about structuring a learning environment.
3. It makes content selection process in any work valid.
4. It helps in specifying objectives.
5. It is useful in designing of instructional objectives.
6. It helps in determining teaching strategy.
7. It is useful in evaluating performance.

According to Dangana (2010) and Onweh (2003) a task would have been fully analyzed when the following are written down.

- All the distinct procedural elements.
- The fact concepts and other knowledge and
- The actual values and attitudes that when learned by the trainee will make them competent in that task at a trainee level.

Onweh further noted that most tasks have six major components (for instructional purposes) that are essential to performing a task on the job in a competent manner. They are:

1. Actual steps in performing task from start to finish.
2. Technical knowledge needed to perform steps accurately.
3. Related mathematics, science or background information needed to understand or perform task competently.
4. Safety knowledge or skill.
5. Use of any special tool, equipment and instrument needed to perform a particular task.

6. Attitudes critical to performing the task competently on the job.

Various methods of analyzing a task in industrial education exist. A review of the basic steps as proposed by Gianchino and Gallington, (1977); Butler,(1972); Finch and Crunkliton, (1997) and Garba, (1993) include:

- Review relevant literature in the occupational area to develop list or inventory of task associated with the broad categories of an occupational area.
- Construction of questionnaire (instrument) using the test of inventory.
- Validation of the test of task through review by job incumbent (in this cases, clothing construction experts).
- Administering the instrument to a selected sample of workers for response. In this case (tailors that are expert in suits and jackets)
- Estimating the importance of each task as part of the job.
- Analyzing and interpreting the data collected to yield the task that is most important for the performance of the job being studied.

In order to develop an instructional manual for learning tailoring techniques, the application of the principles of task analysis was inevitable, hence a review of the concept.

The Challenges the Instructional Guide Developer do encounter: The challenge of the instructional guide developer is ñsorting outò all the learning theories and associated instructional guide design strategies that can provide guidance on the task of designing learning experience. The difficulty that the instructional guide developer may face is solved by the use of Schunkôs (1991) six questions for distinguishing one learning theory from the other. These questions are:

1) How does learning occur?
2) Which factors influence learning?
3) What is the role of memory?

4) How does transfer occur?

5) What type of learning is best explained by the theory?

6) How should instruction be structured to facilitate learning?

The theories of learning that are relevant and their instructional roles in vocational education were included in the study.

In addition too, there are some theories that are of specific importance to learning in Vocational Education programmes. These theories developed by Charles A. Prosser as cited in Okoro (2006) include:

i. Vocational education will be efficient in proportion as the environment in which the learner is trained is a replica of the environment in which he must subsequently work.

ii. Effective vocational training can only be given where the training jobs are carried out in the same way, with the same operations, the same tools, and the same machines as in the occupations itself.

iii. Vocational education will be effective in proportion as it trains the individual directly and specifically in the thinking habits and manipulative habits required in the occupation itself.

iv. Vocational education will be effective in proportion as it enables each individual to capitalize his or her interests, aptitude and intrinsic intelligence to the highest possible degree.

v. Vocational education will be effective in proportion as the specific training experiences for forming right habits of doing are in those of her finished skills necessary for gainful employment.

vi. For every occupation there is a minimum of productive ability, which an individual must possess in order to secure or retain employment in that occupation. If vocational

education is not carried out to that point with that individual, it is neither personally nor socially effective.

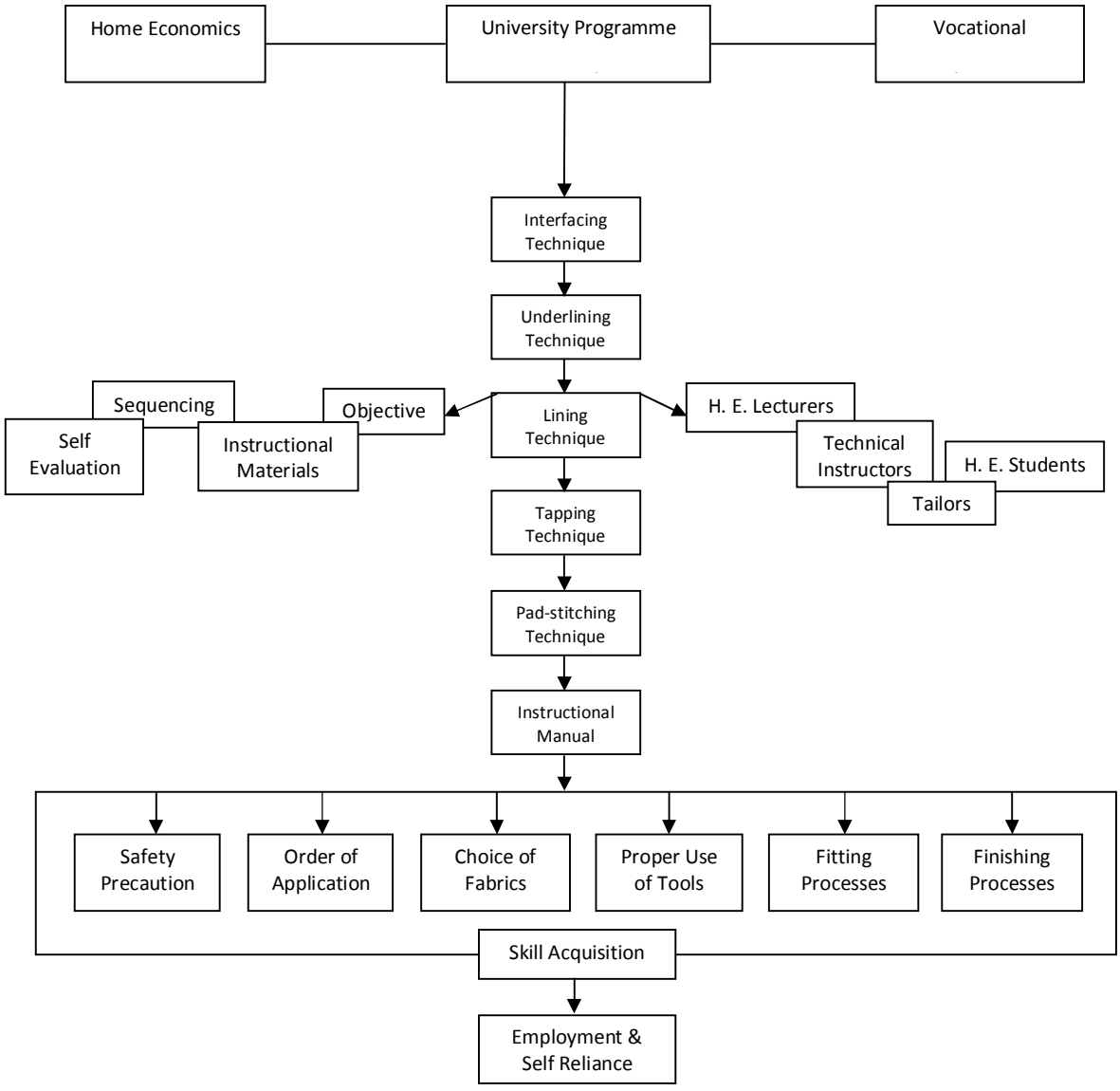
vii. Vocational education will be socially efficient in proportion as in its methods of instruction and its personal relations with learners it takes into consideration the particular characteristics of any particular group, which it serves.

Commenting on these theories, Ogwo and Oranu (2006) assert that these theories are appropriate in guiding the instructional efforts of trainers in vocational education programmes. These theories according to the authors specify minimum standards below which effective vocational education cannot be offered. Furthermore, they point to the fact that activities carried out in an occupational education programme must be done in the name of and be directly related to specific job training. The staffing, the curriculum, the training methods and the training facilities must all lead to this objective. The relevance of these theories to the present work is on its emphasis on habit formation and skill acquisition using the right tools and methods. These theories if allowed to guide practice in vocational education will be capable of stimulating more employment opportunities and upgrade the skills and adaptability of the workforce.

Actually in practice, theory is taught prior to the practical work. Facts, concepts and principles are necessary in order to provide a thorough understanding of the practical work and in order to provide information necessary for applying judgment as practical situation changes.

figure 5- conceptual framework for tailoring techniques.

Schema for the study as developed by the researcher (2013)



Theoretical Framework

A theory is an explanation that is generally accepted to be true. Theory could be said to be an organised set of ideas, principles and propositions that serves as a framework for interpreting facts or findings and a guide to scientific research. The theoretical framework of this study is based on the theory of skill acquisition by Dreyfus and Dreyfus (2003) which states that acquisition of skills are through instruction and experience of the learner.

Dreyfus model of skill acquisition

The concept of learning and skill acquisition proposed by Hubert and Stuart Dreyfus stated that human beings acquire a skill through instruction and experience; they do not appear to leap suddenly from rule-guided (knowing that) to experience (knowing how). The main idea behind this theory of skill acquisition is the distinction they make between ókowing thatô and ókowing howô. They argue that many skills could not simply be reduced to knowing that. The reason that many of us are not conscious of our knowing how, is possibly because we take our knowing how for granted. Hubert and Stuart believe that there is a gradual process involved for an individual to go through in order for him to preach the stage of expertise or knowing how. Their skill acquisition process shows that a person goes through five stages of different knowledge of specific task and ways of decision making as he improves his skill. Dreyfus hypothesized that, skill acquisition is a process characterized by 5 progressive developmental stages, named:

Stage 1: Novice

At novice stage it is all about following the rules. The novice thinks in terms of rules but has no context or ability to modify rules. At this stage the energy is focusing on following the rules rather than thinking. A novice is all about following rules ï specific rules, without context or modification. You donôt need to ñthinkò you just need to ñdoò. A rule is absolute, and must never be violated. The main thing to do here is to get experience following directions and doing the new skill.

You can follow the instructions to join piece of fabrics together and hopefully produce a good garment. All you are responsible for is following directions.

ñTo improve, the novice needs monitoring, either by self-observation or instructional feedback, so as to bring his/her behaviour more and more completely into conformity with the ruleò.

Stage 2: Advanced Beginner

Still rules based, but rules start to have situational conditions. In one situation you use one rule, in other situations you use another. The advanced beginner needs to be able to identify the limited need to selectively apply different rules. So if you want to join piece of fabrics together, follow the construction rule(s), if you want to pad-stitch hymo to the lapel, follow the pad-stitching rule(s). They are all construction processes, but have a few decision points. Again, follow the different ñbranchesò of instructions and you should be fine. It is easy to see how this could collapse into a large Novice category, but it is a step before the much larger step to Competence.

Stage 3: Competent

You realize that your skill or domain is more complex than a series of rules and branches. You start to see patterns and principles (or aspects) rather than a discrete set of rules ï rules become ñrules of thumbò. You are lead more by your experience and active decision-making than by strictly following rules. What is developed now are guidelines that help direct

competent individuals at a higher level. You now are accountable for your decisions as you are not following the strict rules and context of the previous stages. Youôve made a lot of constructions and have a number of types. When asked to make a construction of a different type you pull from experience the best way to put a new joint together. If the new joint doesnôt work out, you are responsible. This is the critical tipping point for most people when learning a new skill ï and why most people never really become ñcompetentò in most things they learn. Here you either need to decide to just ñfollow the rulesò or spend the time to get fully involved with and take responsibility. ñCompetence comes only after considerable experience actually coping with real situationsé ò

Stage 4: Proficient

At this point your understanding of your skill or domain has become more of an instinct or intuition. You will do and try things because it just seems like the right thing to do (and you will most often be right). Instead of a discrete set of different parts you can perceive a complete system. A large amount of real-world experience will show you that there are often multiple competing solutions to a specific problem and you have a ñgut feelingò about which is correct. ñCalculations and rational analysis seem to disappearò. Will quickly know ñwhatò needs to be done and then formulate how to do it. Proficiency is developed by exposure to a ñwide variety of typical whole situations.ò

Stage 5: Expert

At this point you are not solving problems or making conscious decisions about things, you just ñdoò and it works. ñOptimal performance becomes second nature.ò People may ask you why you decided to do things ñthat wayò and you may not know how to explain to them the 10 steps necessary to get from ñAò to ñBò because to you it was really just one step. Forcing an expert to detail the steps necessary before proceeding will often cause them to fail or second-guess. Here you think of grandma getting up at 6:00am and making biscuits

from scratch for many, many years. She doesnôt measure, time, or probably even think about baking ï she just does it, and it works. Very few people will attain this level in a particular skill or domain. Some estimates say 10 ï 15 years in a particular area is required.

At this stage it is intuitively appropriate action without being conscious of your skills. An expert has experience that ñis so vast that normally each specific situation immediately dictates an intuitive appropriate action.ò The Dreyfusô model of skill acquisition is widely used in various fields to develop instruction material for training new skills. As an instructor, if you understand the model you can work on your own skills better.

The Dreyfusô skill acquisition model is developmental, based on situated performance and experiential learning (Benner, 2004). It has been adopted by researchers to study expertise development in areas like nursing and teaching as noted in (Berliner, 1988) and (Crawford, 2003). Berliner, (1988) pointed out that teachers at various levels of experience and expertise differed in their ability to interpret classroom phenomena, discern the importance of events, use routines, predict classroom phenomena, judge typical and atypical events, and evaluate teaching performance. Empirical data in Berlinerôs studies revealed that ñdevelopmental differences ñhave important implications for the policies we adopt for the education of teachersò.

Findings from Berlinerôs studies help justify the appropriateness of adopting the Dreyfusô skill acquisition model as a theoretical framework for studying teaching expertise. In the context of elementary Home Economics education, elementary teachers more often need to develop their practical Home Economics teaching expertise from scratch. The novice-to-expertise continuum of the Dreyfusôs skill acquisition model provided the researchers with insightful guidance in understanding Home Economics practical teaching expertise development.

However, between 1987 ï 1990, an Oxford professor, Bent Flyvbjerg, (1991) interviewed Stuart Dreyfus and Hubert Dreyfus and observed that, the Dreyfusô model in its original form does not account for innovation, i.e. how new skills come into being and outcompete old ones. This lack in the original model makes it relatively undynamic and unable to grasp skill acquisition in full, according to Flyvbjerg, who proposed as a remedy, a sixth stage for innovation. Flyvbjerg also questioned the way phronesis (practical wisdom) seemed to be conflated with techne (craft) in Hubert and Stuart Dreyfusô thinking about skills. At first the Dreyfus brothers rejected additional stages to the five-stage model on the grounds that they did not understand innovation. By 1990, Flyvbjerg published an evaluation and extension of the model including a sixth stage for innovation. Later, Hubert Dreyfus embraced both a sixth and a seventh stage taking into account innovation and practical wisdom in the Dreyfusô model of skill acquisition. Eraut, (1994) observed that, each of the

Dreyfusô Model stage has some identifiable key characteristics associated with it, which he elaborated as thus:

Characteristics of Dreyfus' Model of Skill Acquisition Stages (Eraut, 1994)

Novice	Rigid adherence to taught rules or plans Little situational perception No discretionary judgment
Advanced Beginner	Guidelines for action based on attributes or aspects Situational perception still limited All attributes and aspects are treated separately and given equal importance
Competent	Coping with ñcrowdednessò Now sees actions as least partly in terms of longer-term goals Conscious deliberate planning Standardized and routinized procedures
Proficient	Sees situations holistically rather than in terms of aspects Sees what is most important in a situation Perceives deviations from the normal pattern Decision-making less labored Uses maxims for guidance, whose meaning varies according to the situation
Expert	No longer relies on rules, guidelines or maxims Intuitive grasp of situations based on deep tacit understanding

	Analytical approaches used only in novel situations or when problems occur Vision of what is possible

Theories of Accelerated Learning

Accelerated learning is a comprehensive approach theory to school change, developed in 1986 at Stanford University. The accelerated learning theory assumes that at-risk students have ólearning gapsô in areas valued by schools and mainstream economic and social institutions (Hopfenberg, Wendy, and Levin, Henry, 1990). The program also assumes that remedial approaches fail to close these gaps because they donôt build on the studentsô strengths and they donôt tap into the resources of teachers, parents, and the community. Itôs a total system for speeding and enhancing both the design process and learning processes.

Based on the latest brain research, it has been proved that, increase learning effectiveness thus help in saving time and money. What makes accelerated learning so effective is that itôs based on the way concepts are presented and learnt. Accelerated learning unlocks much of the potential for learning that has been left largely untapped by most conventional learning methods. It does this by actively involving the whole person, using physical activity, creativity, music, images, color, and other methods designed to get people deeply involved in their own learning. According to Deporter, (2001) a proponent of accelerated learning what people need for an optimal learning environment as:

A Positive Learning Environment: This is a situation in which people learn best in a positive physical, emotional, and social environment, one that is both relaxed and stimulating. A sense of wholeness, safety, interest, and enjoyment is essential for optimizing human learning.

Total Learning Involvement: People learn best when they are totally and actively involved and take full responsibility for their own learning. Learning is not a spectator sport but a participatory one. Knowledge is not something a learner passively absorbs, but something a learner actively creates. This A. I. tends to be more activity-based rather than materials-based or presentations-based.

Collaboration Among Learners: People generally learn best in an environment of collaboration. All good learning tends to be social. Whereas traditional learning emphasizes competition between isolated individuals, A. L. emphasizes collaboration between learners in a learning community.

Variety that appeals to all learning styles: People learn best when they have a rich variety of learning options that allows them to use all their senses and exercises their preferred learning style. Rather than thinking of a learning program as a one-dish meal, A. L. thinks of it as a results driven, learner-centred smorgasbord.

Contextual Learning: People learn best in context. Facts and skills learned in isolation and hard to absorb and quick to evaporate. The best learning comes from doing the work itself in a continual process of órеal-worldô immersion, feedback, reflection, evaluation, and reimmersion.

The Guiding Principles of Accelerated Learning

1) Learning Involves the Whole Mind and Body: Learning is not all merely ñheadò learning (conscious, rational, ñleft-brained,ò and verbal) but involves the whole body/mind with all its emotions, senses, and receptors.
2) Learning is Creation, Not Consumption: Knowledge is not something a learner absorbs, but something a learner creates. Learning happens when a learner integrates new knowledge and skill into his or her existing structure of self. Learning is literally

a matter of creating new meanings, new neutral networks, and new patterns of electro/chemical interactions within oneôs total brain/body system.

3) Collaboration Aids Learning: All good learning has a social base. We often lean more by interacting with peers than we learn by any other means. Competition between learners slows learning, cooperation among learners speeds it. A genuine learning community is always better for learning than a collection of isolated individuals.
4) Learning Takes Place on many Level Simultaneously: Learning is not a matter of absorbing one little thing at a time in linear fashion, but absorbing many things at once. Good learning engages people in many levels simultaneously (conscious and paraconscious, mental and physical) and uses all the receptors and senses and paths it can into a personôs total brain/body system. The brain, after all, it not a sequential, but a parallel processor and thrives when it is challenged to do many things at once.
5) Learning Comes From Doing the Work Itself (With Feedback): People learn best in context. Things learned in isolation are hard to remember and quick to evaporate. We learn how to swim by swimming, how to manage by managing, how to sing by singing, how to sell by selling, and how to care for customers by caring for customers. The real and the concrete are far better teachers than the hypothetical and abstract-provided there is time for total immersion, feedback, reflection, and reimmersion.
6) Positive Emotions Greatly Improve Learning: Feelings determine both the quality and quantity of oneôs learning. Negative feelings inhibit learning. Positive feelings accelerate it. Learning that is stressful, painful, and dreary canôt hold a candle to learning that is joyful, relaxed, and engaging.
7) The Image Brain Absorbs Information Instantly and Automatically: The human nervous system is more of an image processor than word processor. Concrete images are much easier to grasp and retain than are verbal abstractions. Translating verbal

abstractions into concrete images of all kinds will make those verbal abstractions faster to learn and easier to remember.

Relationship of the Accelerated Learning Theory to Present Study

Deficiencies have for sometimes been noticed in the teaching method used for impacting practical skills to students in textile and clothing in the Universities. This is a result of the students lacking in practical competencies required of the construction of a well tailored garments. This type of deficiency is what accelerated learning theory (AL) regard as skill acquisition gap. This gap will hopefully be remedied if the appropriate teaching/coaching technique is adopted for teaching tailoring techniques. Thus a critical look at the guiding principles of AL reveal the relationship of the theory to the present study, in that AL advocate that optimum learning occur when students are allowed to learn together (collaborative learning). It also advocates physical activities as opposed to the teaching of abstract concepts. It also supports creativity. Hence, the use of instructional manuals to enhance skill acquisition in application of tailoring techniques will hopefully and positively affect the psychomotor achievement, interest, ability and retention of students and graduates of Home Economics in Universities, in order to fill the skill gaps identified.

Curriculum Development Theories

Theories of curriculum development reflect the models of curriculum development. They are a careful incorporation of stages which presents the curriculum development process. Curriculum models are based on a body of theory about teaching and learning, targeted to needs and characteristics of a particular group of learners, and outline approaches, methods and procedures of implementation. Louis, Manion and Morrison (2007) view models as the use of analogies to give more graphic or visual representation of a particular phenomenon, when used they help in focusing on key issues in the nature of phenomena.

Tyler's Curriculum Model

Tylerôs four fundamental questions represent the four-step sequence of curriculum planning:

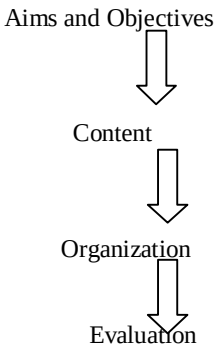


fig. 6 Tylerôs Curriculum Model

Tylerôs model presented a linear relationship between the four steps and that they are sequential. This gives the impression that specifying aims and objectives precedes a curriculum design while evaluation comes at the end. According to Tyler (1950) this linear representation of curriculum design was accepted and practices by scholars for providing the comprehensiveness of the planning activities and led to refinements such as system analysis and taxonomies of learning. Tylerôs model suggested that educational objectives should describe studentsô behavior and not the teachers. Specifically, objectives should specify how students are to behave at the end of a particular teaching unit, and content of that behavior.

Tylerôs model however was criticized by scholars for portraying curriculum development process as involving rigidly sequential steps hence it failed to make distinction between content and learning experiences which were regarded as educational experiences, and also failed to show the necessary interdependencies of the four problem areas emerging from the four fundamental questions.

This study adopted a competency-based model of curriculum development which involves identification of all tasks to be learnt and determining what one needs to know for mastery of each knowledge or skill. This model conceives the fact that each stage is interrelated to the other. In this context, the final stage evaluation, affects the initial stage, which are the objectives rather than terminate the programme.

Nicholls and Nicholls' Model

Nicholls and Nicholls (1978) developed a five step cyclical model, which recognized situational analysis as the first phase in curriculum development. Nicholls and Nichollsô model contains steps as:

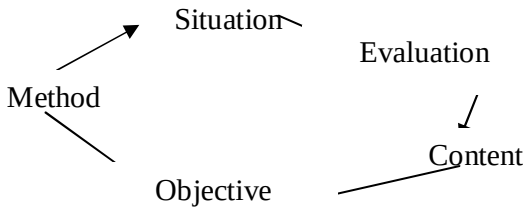


Fig. 7 Nicholls and Nichollsô Model

Nicholls and Nicholls (1978) model shows a cyclic and continuous process like Wheelerôs with an addition of the situation analysis. Nicholls and Nichollsô opinion is that teachers should have a wide range of objectives, which are very well expressed. Then the objectives should be used to plan the learning opportunities for the pupils and to device means of assessing the extent to maintain them.

This study adopted the competency-based model in which required behaviours, skills, attitudes for successful performance of task were identified and then instructions designed to produce the skills according to Hamilton in Olaitan (2003). The study, however, applies some ideas from Taba (1962), Tyler (1974), Wheeler (1976) and Nicholls and Nicholls (1978) on objectives, content, learning experiences and evaluation.

Wheelers' Model of Curriculum Theory

Wheeler's 5-Step Model of Curriculum Development Theory

Wheeler, (1976) developed a five-phase curriculum design which relates to each other in a cyclical form. This is why it is said to be a process.In Wheelerôs model, the final phase, evaluation, does not terminate the curriculum planning, rather it affects the initial phase, objectives. The model shows a cyclical and continuous process, which indicates that the curriculum development process goes on and on, from step to the other as against Tylerôs static view. It also shows that curriculum development should always be dynamic rather than static and never stops as far as the needs of the society and the objectives are changing. Wheeler suggested that the end of education is to change behavior and that the end of education is always the same anywhere. According to Wheeler, his model increases the probability of attainment of the aims, goals, and objectives. Wheeler separated learning experiences and content but organized them together.

Wheeler (1980) suggested that there are five phases of curriculum design which are referred to as the curriculum process. The five phases of Wheelersô curriculum process are as follows:

1. The selection of aims, goals and objectives.
2. The selection of learning experiences calculated to help in the attainment of these aims, goals, and objectives.
3. The selection of content (subject matter) through which certain types of experience may be offered.
4. The organization and integration of learning experiences and content with respect to the teaching-learning process within the school and classroom.
5. Evaluation of the effectiveness of all aspects of phases 2,3 and 4 in attaining the goals detailed in phase 1.

Wheeler (1980) noted that the phase are related, interdependent and combine to form a cyclical process so that over time, the final phase affects the initial one (Figure 4). Wheeler asserted that each phase is a logical development from the preceding one for, most

commonly, work in one phase cannot be attempted until some work has been done in a preceding phase. Wheeler rested his assumption on the belief that the end of education is to change behaviour and that the end of education is always the same everywhere. Wheeler advocated that his model be used for curriculum development at any level of learning as it will increase the probability of attainment of aims and objectives.

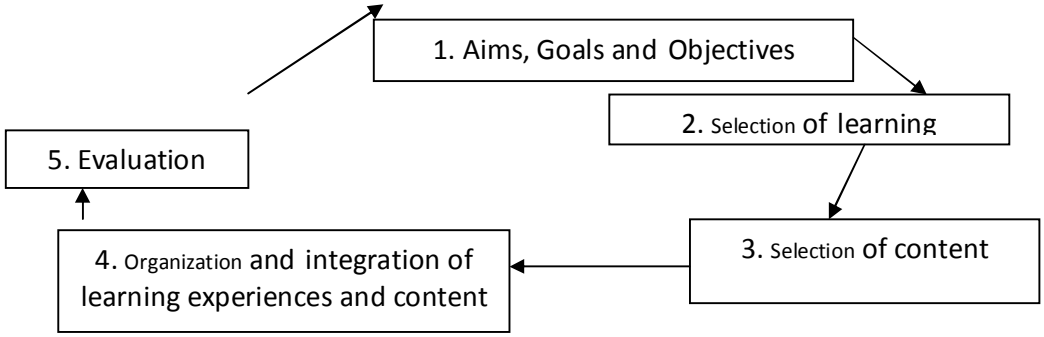


Fig. 8: Wheelers Curriculum Theory Source: Wheeler (1980)

Selection of Specific Objectives

Specific objectives are specified statements of behavioural expectations of the learners at the end of each learning sequence (Offorma, 1994). Similarly, Eraut (1991) pointed out that specific objectives normally refers to the intended and pre-specified outcome of a planned programme of teaching and is expressed in terms of what it is hoped the student will have learned. Specific objectives answer the question, ówhat will the pupils be doing at the end of a course of instruction?ô Thus, they begin with action verbs such as describe, identify, define, plan, draw, label etc. In other words, specific objectives are stated in terms of the behaviour expected of the learner after going through some planned experiences.

According to Offorma (1994), and Olaitan and Ali (1997), specific objectives are also called instructional objectives, since they are classroom objectives. Furthermore, specific

objectives are referred to as behavioural objectives (Offorma, 1994; Onyike, 1981; Tyler, 1975). This is attributed to the fact that specific objectives specify the actual student behaviour at the end of an instruction. The specific level objectives are viewed as very important guide in curriculum development. Olaitan and Ali (1997) pointed out that clear definition of objectives brings essential clarity into curriculum design and implementation.

Specific objectives are very helpful in selecting learning experiences and in guiding learning (Lemchi, 2006). Tyler (1975) equally noted that curriculum objectives are the criteria by which instructional materials are selected, instructional content outlined, procedure is developed and final test and examination prepared. As a matter of fact, specific objectives must be formulated with sufficient specify to guide evaluation. Various reasons have however been confirmed for complexity in selecting curriculum objectives. Among these include the fact that there are many desirable things that students could learn, far more than the time available in the school permits. Hence, selecting objectives involves assigning priorities among possible ones.

Another consideration according to Tyler (1991a) derives from the responsibility of the school to serve in the socialization of young people, that is, helping them to learn those things that will enable them to participate constructively in their society. This requires information about the knowledge, skills and dispositions required for effective participation in that society, and those opportunities the society offers for the employment of individual talents. Consequently, Tyler (1991a) suggested that resources for curriculum objectives are as follows;

- Investigations of the contemporary society to identify or suggest the knowledge, skills, and dispositions required to participate effectively in that society, and to take advantages of the opportunities it offers,

- Reviews and examinations of the various subject matters that suggest resources on which students can helpfully draw in carrying on their daily activities, and in achieving their own goals,
- Studies of children and youth in general, and of the particular students for which the curriculum is being developed to identify relevant knowledge, skills, and dispositions already possessed, and those lacking that the students need to learn.

Similarly, Offorma (1994) noted that the considerations for selecting curriculum objectives include; the learner, the contemporary society and the subject specialists.

Offorma added that the three should be screened psychologically and philosophically to ensure that they conform to the developmental needs of the learner and the philosophy of the society for which the curriculum is being planned.

(a) Studying the philosophy of the society for which the curriculum is being planned and formulating educational objectives based on the values indicated by the society;

(b) Using the philosophy of the society to screen the objectives already formulated based on the three sources, the learner, the society and the subject specialists.

Use of Psychology of learning: Facts considered here include the feasibility or attainability of the objectives, the appropriateness of the objectives in terms of the learners age, the sequencing of the objectives, the relatedness of the objectives, the required time limit to attain the objectives, and the justification of the objectives based on the theory of learning among others (Oforma, 1994).

The selected objectives have to be feasible and attainable in terms of the time limit, and the maturational level of the learners. This relates to the concept of readiness, which is one of the law propounded by Thorndike cited in Gagne (1977). Two aspects of readiness include the maturational level (age) and mental alertness of the learner. Furthermore, the selected objectives ought to be presented in a sequential order, starting with the simplest and

graduating with the more difficult. This is because learning is cumulative. Use of psychology of learning help to ensure that objectives are not compartmentalized, but reinforce each other, and also make for economy of time and energy (Oforma, 1994).

Another important issue in relation to statement of specific objectives, which cannot be over emphasized, is the relationship of specific objectives to the three domains of learning- cognitive domain, psychomotor domain and affective domain. In Wheelerôs model, evaluation involves the ability to make a judgment or decision on an issue being communicated. Some criteria are considered in making the judgment and may involve the five sub-categories of the cognitive domain as were stated by Olaitan (2003), that the learner should be able to recall some information that have been communicated, comprehend it, analyze it, synthesize it, and finally pronounce judgment on the matter.

Pyschomoter domain: This domain is viewed by curricum speciailists as involving manipulative abilities. Olaitan (2003) equally pointed out that psychomotor involves observable operational activities. According to Saylor et al (1981), psychomotor objects, or some act which requires neuromuscular coordination. Saylor et al related example to physical education, vocational education, handwriting and speech. Furthermore, Olaitan and Ali (1997) noted that psychomotor objectives are those intended to develop manipulative and motor skills. Olaitan and Ali (1997) noted that psychomotor objective are derived from the concept of operationalism and make use of constructs which are operational when assessed.

The psychomotor domain emphasized four major elements in ascending order as follows (1) observing (2) imitating (3) practicing and (4) adapting (Olaitan, 2003).

1. Observing: Involves maintaining very close attention to the skill performance of an experienced person on a job or in a workshop/laboratory.
2. Imitating: Involves an attempt to perform certain activities in the same way that they are performed by an experienced worker or trainer

3. Practicing: Involves repetition of a group of learned skills with little or no supervision.
4. Adapting: Involves a situation where the skills learned are adapted by the learner, and demonstrated outside the laboratory or training ground frequently to achieve similar accepted result.

Simpson (1972) recommended a classification system for objectives in the psychomotor domain. This system consist of categories which from lowest to highest are as follows:- (a) perception, (b) set, (c) guided response, (d) mechanism, (e) complex overt response (f) adaptation, and (g) origination

However, both system of classification have same idea, and each succeeding category is more complex and demands a higher degree of skill.

Affective domain: This domain concentrates on the development of feedings, interests, and values of individual. The interest, feelings and values of an individual become energized as the individual puts into practice or test successfully, the concepts, principles and skills learned about what interests him/her (Olaitan, 2003). The affective domain thus reveals the level of appreciation, practice, valuing of concept, principles, and acquired skills. Bjectives in this domain, deal with feelings, interests, and values. According to Olaitan and Ali (1997), the individual becomes aware of the value he holds of concepts and ideas, internalize these feelings, which the final analysis leads him to respond to, and conceptualize such stimuli.

The affective domain is categorized from the simplest to the highest into the following;

1. Receiving: Refers to sensitively to the existence of certain situations or values
2. Responding: Involves paying active attention to a situation or phenomena, including active participation by the leaner.
3. Valuing: Involves perception of worth or benefit in a situation or phenomena.

4. Organization: Means arrangement of values or benefit or interests into an acceptable form, or development of an internally consistent value system.
5. Characterization: Involves the development and internalization of the tenets of a value system, and consistently acting in accordance with the values developed.

The classification of educational objectives into the three domains, cognitive, psychomotor, and affective, reflect an attempt to satisfy the intellectual, motor and attitudinal needs of the students who take part in the learning processes. The satisfaction of these needs is however, manifested in the type of behaviour exhibited by the students after taking part in a learning process. If the needs are satisfied, the studentsô achievement level (cognitive objectives) with their performance level (psychomotor objectives) will be high, and the attitude of the students (affective objectives) will improve (Olaitan and Ali, 1997). Bloomsô (1956) taxonomy of objectives is thus very useful in selecting instructional objectives that reflect studentsô needs, and also help teachers properly assess achievement and psychomotor levels of the learners in the learning process.

Accordingly, the objectives selected in this study reflect the various domains in the taxonomy of objectives, and it is believed that the selected objectives will enhance the achievement, performance, and attitudinal levels of the university Home Economics students in the area of tailoring skills.

Selection of Learning Experiences

Learning experience refers to the interaction between the learner and the external conditions in the environment to which he can react (Tyler, 1975). Offorma (1994) equally pointed out that learning experiences can be regarded as the activities the learners engage in, in the process of learning. Furthermore, Gbamanja (2002), viewed learning experiences as the activities or interactions given to the learner to enrich learning. A close analysis of the above definitions reveal that learning experience is not the same as content with which a course

deals, not the activities performed by the teacher. Rather, learning is believed to be facilitated through the actives behaviour of the student. Thus, for any meaningful learning to take place, the leaner must be exposed to active behaviour (Gbamanja, 2002). This suggests why several authors stressed that it is what the learner does that he learns, and not what the teacher does.

Tyler (1975) explained that it is possible for two students to be in the same class, and for them to be having two different experiences. He illustrated that as a teacher is making an explanation, one student may be very much interested in the problem, and follow the explanation mentally, seeing the connections and taking from his own experience certain illustrations as the teacher goes along with the explanation. On the other hand, it is possible for the second student to be engrossed in thoughts of a forth coming football match. Thus, obviously though the two students are in the same class, they are not having the same experience.

The problem of selecting learning experiences is therefore the problem of determining the kinds of experience likely to produce desired educational objectives, and also the problem of how to set up situations that will evoke or provide within the students the kinds of learning experiences desired (Lemchi, 2006). To be able to select appropriate learning experiences, modern principle of learning need to be considered. Some of these principles according to Wheeler (1980) include the following;

1. Learning results from active involvement of the learner
2. learning proceeds more effectively if as well as being an active participant, the learners understands what heôs learning and accepts the purposes to be fulfilled.
3. Learning is considerably affected by individual goals, interest, values and motives.
4. The wider the range of experiences presented to the learner, the more likely are generalizations and discrimination to occur

5. Behavour is a function of the learners perception
6. The Possible relation of new ideas to those already gained is an essential bridge in the process of learning
7. Similar situations may elicit different reactions from different learners.
8. All learningôs are multiple. Though focus may be on one particular desired outcomes, other learningôs take place simultaneously.

Tyler (1975) similarly, highlighted some general principles that apply to the selection of learning experiences. In doing this, Tyler (1975) laid emphasis on the important relationship of learning experiences with specified objectives.

- The first is that, for a given objective to be attained, a learner must have experiences that give him an opportunity to practice the kind of behaviour implied by the objective.
- Secondly, learning experiences must be such that the learner obtains satisfaction from carrying on the kind of behaviour implied by the objectives.
- Thirdly, the reactions desired in the experience should be within the range of possibility for the learners involved.
- The fourth principles is that there are many particular experiences that can be used to attain the same specific objectives. Hence, a wide range of creativity is required in panning learning experiences.
- The fifth, and last of Tylers principles is that, the same learning experience will usually bring about several outcomes.

Furthermore, several authors (Offorma, 1994; Onyike, 1981; Wheeler, 1980) have outlined certain criteria for selecting learning experiences. These criteria however seem to have been derived from the principles of learning. They include the following:-

1. **Validity:** This criterion ensures that the learning experiences are closely related to the desired objectives. The question here is, ôDoes the learning experience result in changed behaviour with respect to the objectives should be borne in mind, otherwise the activities which will not facilitate the achievement of the objectives. Offorma (1994) added that to satisfy this criterion, learning experiences should be in line with the three behavioural domains cognitive, psychomotor, and affective domains.
2. **Comprehensiveness:** This criterion requires that all the objectives which are enunciated in the curriculum should have corresponding learning experiences. Offorma (1994) asserted that objectives without learning experiences make no contribution to behaviour change. Objectives stated in various domains. Olaitan and Ali (1997) thus rightly pointed out that learning experiences could only be comprehensive if they enable the learner to learn different things including information, intellectual skills, motor skills, social skills, beliefs, attitudes, and values.
3. **Variety:** Research has shown that people do not only learn in different ways, they also learn at different rates. This underscores the need for variety in selecting learning experiences. The greater the variety of experiences presented, the more likely the learner is to find satisfying activities that will enable him to progress towards the required learningôs. Variety is thus helpful in catering for a wide range of students (Olaitan and Ali, 1997).
4. **Suitability:** Learning experiences ought to be appropriate both to the general level of development of the group of learners, and to the general and particular levels of development of the individuals within the group. Wheeler (1980) emphasized that

learning proceeds most effectively when the learner is physiologically, psychologically and socially ready for an experience.

5. **Relevance to life:** This relates more to the functionality of learning experiences. Learning experiences will be perceived as meaningful by the learners if they relate directly to life. Olaitain and Ali (1997) argued that where learning experiences are relevant to life, then the subsequent transfer of the experiences to situations where they would be used is made much easier Onyike (1981) supported this fact by stating that transfer of learning is greatest when the learning situation is most like the situation in which the earning is to be used.
6. **Pattern:** This criterion is associated with concepts such as balance, continuity. Cumulation, repetition of experience and multiple learning.

Balance deals with the relationship between developmental needs of the learners and societal needs and demands. Both ought to be considered in selecting learning experiences so as to produce functional members of the society (Offorma, 1994). Continuity refers to the fact that learning is a continuous process and as such, in the progression from one idea or set of ideas to another of greater complexity, there must be some continuity in development, so that later experience bears a relation to what had been done before. Cummulation requires that learning experiences reinforce each other.

Experiences which though differ in nature and content but that are related towards the same end should be provided. The essential issues here is to provide for progressively more demanding performance, greater depth and breadth of ideas, to understand, to relate and to apply. Repetition of experiences enhances the learners comprehension and his power of recall and makes learning permanent. Olaitan and Ali (1997) pointed out that education does not merely aim at forming certain behaviour patterns but more importantly, it aims at making the exercise of such habitual.

Lastly, it is important to note that learning experiences usually bring about several outcomes, some of which are though not intended. This is what Wheeler (1980) refers to as multiple learning. This necessitates that any experience to be used must be carefully considered not only from the point of view of the main objectives, but with regard to the multiple or concomitant learning which are likely to occur. Onyike (1981) warned that because multiple learning do occur, experiences should be carefully selected. Onyike suggested that all experiences which though likely to lead to attainment of objectives, but may probably produce undesirable behaviour should be eliminated.

Selection of the tailoring techniques learning experiences for this study was based on the various principles recommended by Wheeler (1980) and Tyler (1975) as important for appropriate selection of learning experiences. Equally considered while selecting the learning experiences were the six criteria suggested by Olaitan and Ali (1997), Offorma (1994), Onyike (1981) and Wheeler (1980). It is believed that the learning experiences selected in this study will greatly enhance the attainment of the stated objectives and produce desirable behaviour in the learners.

Organization of Learning Experiences:

After selecting the objectives and learning experiences, another important step in curriculum development is the organization of the selected learning experiences in such a way as to produce major changes in the learners, in the direction of the stated objectives. Onyike (1981) and Tyler (1975) observed that organization is a crucial task in curriculum development because it greatly influences the efficiency of instruction and the amount of learning that takes place in any educational setting. According to Olaitan and Ali (1997), effective and desirable learning can only take place when learning experiences are appropriately organized.

Furthermore, Tyler (1991b) noted that the purpose of organizing learning experiences is to maximize their cumulative effect in helping the learner attain the curriculum objectives. The learner needs to perceive the relation of what he is learning in one subject to his learning in other subjects, and to situations outside the classroom, so that he can draw upon learning in the various subjects whenever they are appropriate rather than being restricted to narrow compartmentalization of his knowledge, skills and dispositions.

Learning experiences ought to be organized in such a way that they facilitate and reinforce each other (Gbamanja, 2002; Onyike, 1981). This involves a careful consideration of two types of organization or relationship. These are vertical and horizontal organization. Vertical organization refers to the arrangement of the learning experiences in such a way that they are related overtime, within the same subject or in different subject areas. For example, the learning experiences in year I Textiles and Clothing area of Home Economics are arranged in such a way that they are related to year II Textiles and Clothing courses.

Horizontal organization on the other hand refers to the arrangement of learning experiences in such a way that they are related at the same level but in different subject areas. For example, arranging learning experiences provided in year I Textiles and Clothing course, so that at they will relate to year I Home management course. Or arranging experiences provided in SS I Biology to bear some relationship with those provided in Agriculture at the same level (i.e SSI Agriculture).

Vertical organization or relationship of learning experiences help to rein-force learning and increase the chances of building on what is learned by providing greater depth and breadth of knowledge (Olaitan and Ali, 1997, Onyike, 1981; Tyler, 1975). Similarly, horizontal organization or relationship may provide for larger significance and unified view of learning. The above explains why various authors emphasized that learning experiences should essentially be organized to bear both relationship.

Certain criteria have been identified as crucial for building an effectively organized group of learning experiences. These are; (a) continuity, (b) sequence, and (c) integration.

(A). **Continuity:** This refers to vertical reiteration of major curriculum elements within any field of study. Curriculum elements include the knowledge, skills, attitudes, values etc that education tries to enable learners to acquire. Changes in ways of thinking, in major operation concepts, in attitudes and the like develop slowly with time. If over time, similar experiences are brought into continuing operation, then they will very likely produce a cumulative effect which will bring about changes in the learner (Onyike, 1981). Continuity is thus noted to be of utmost importance in effective organization of learning experiences (Tyler, 1975). Offorma (1994) added that continuity ensures that there is always some relationship between the learners previous learning and his future learning and this facilitates learning, making it more meaningful to the learner.

(B). **Sequence:** This is another aspect of vertical organization just like continuity. It is also related to continuity but goes beyond it. According to Onyike (1981), the criterion of sequence not only emphasizes the importance of having each successive learning experience build upon the preceding on, it in addition requires that experiences be planned so that there is an increasing complexity of material to deal with. It also ensures an enlargement of the concepts or skills built from previous experiences accompanied by more mature mental reactions on the part of the learners. Thus, sequence implies continuity, as well as progression from the lower to the higher levels of treatment of curriculum elements.

Onyike (1981) also suggested some general principles that apply in planning any learning sequence. These include; chronological-going from the known to the unknown; moving from the simple to the complex; moving from concrete objects and experiences to the development of abstract concepts and generalizations. Onyike recommended that curriculum

developers should utilize these principles in coping with the problem of sequence in curriculum organization.

(C). **Integration:** This criterion refers to the utilization of curriculum elements from one subject area to other subject areas of the curriculum so that they buttress one another (Onyike, 1981). Unlike both continuity and sequence, integration refers to the horizontal relationship between experiences. Integration helps the students to get a unified view of the elements dealt with in the various areas of the curriculum. Onyike further added that integration helps to make it clear to the learner that the knowledge, skill or attitude in question is not simply an isolated behaviour related to a single course, but one of the many capacities he needs in the varied situations of his dial life.

Offorma (1994) however contended that integration can be horizontal or vertical. It is horizontal when the curriculum elements in one subject are related to those in another subject but at the same level. On the other hand, vertical integration refers to the relationship between curriculum elements in one subject area with those in the same or different subject areas, but at a higher level. Wheeler (1980) supported the above view stating that integration increases students opportunities for seeing relationships, both vertical and horizontal, of various subject areas. Wheeler however concluded that, although integration is not something which can be easily produced for the learner, he can be helped by suitable arrangement of learning experiences which basically involves identifying the basic ideas, concepts, knowledge, principles, methods, skills, values among others (referred to as integrative threads) which are common to the various areas of knowledge that need to be unified.

Apart from considering the various criteria or principles outlined as crucial for effective organization of learning experiences, it is also necessary to consider the main structural elements into which the learning experiences can be organized. According to Tyler (1975), learning experiences can be effectively organized using some structures. The

structures include, units, lessons, courses an subjects among others. These structures represent organization at various levels viz; lowest, intermediate and largest levels.

At the lowest level, structures used include lessons, topics and units (Tyler, 1975). A lesson usually lasts for a single period in a day. A topic may last for couple of days or weeks while a unit usually covers several weeks and is usually organized around particular objectives.

At the intermediate levels, the structure used is the course. One way of doing this is to organize related units sequentially to make a course, for example, Entrepreneurship education I, Entrepreneurship education II etc, each forming a base for the subsequent one. Another way is to organize courses into semester or year units without sequential relationship between the courses, that mean treating each course as a discrete unit.

The largest organizational level include the arrangement of learning experiences into subjects or disciplines, commonly referred to as the subject curriculum organization. Gbamanja (2002), and Olaitan and Ali (1997) observed that it is the oldest and most widely employed approach to organization of learning experiences, and is characterized by sharply defined subject divisions, for example, Mathematics, History, Biology etc. Other organizational structures used at this level include; the broad fields curriculum organization, the core curriculum organization, the activity curriculum organization, and the integrated curriculum organization (Gbamanja, 2002; Olaitan and Ali, 1997; Wheeler, 1980; Tyler, 1975).

However, although Gbamanja (2002) believes that the subject curriculum organization suits the type of educational system in most Africa countries, Wheeler (1980) noted that the various structures can be used to good effect and that the best form of organizational structure has not been settled. As a matter of fact, each of these organizational

structures have their merits and demerits. Wheeller added that it is possible to use different structures at the same time as they are not mutually exclusive.

Models for Instructional Guide Development

According to Wilson (1997), model is defined as the representation of a theory or principle, and is regarded as a simplified representation of reality. To Ogwo and Oranu (2006) model is the conceptualization of principles or theories; on the other hand, Dorin, Demin and Gael (1990) see it as mental picture that helps us to understand something we cannot see or experience directly. Models like myths and metaphors help us to make sense of our world. Whether derived from whim or serious research, a model provides an avenue for the users to comprehend an incomprehensible problem.

Instructional guide development model gives structure and meaning to an instructional guide development problem; enabling the developer to negotiate his/her design task with a semblance of conscious understanding. Furthermore, models help us to visualize the problem, to break it down into discrete manageable units.

The value of a specific model is determined within the context of use. Like any other instrument, a model assumes a specific intention of its user. Therefore, it should be judged by how it mediates the design intention, how well it can share a workload and how effectively it shift focus away from itself towards the objective of the design activity.

There are many instructional guide development models for the guidance of the developer. These models are categorized in accordance with the dominant learning theory

that forms its foundation. Accordingly, Ryles (2003) identified (1) the behaviourist/cognitive and (2) constructivist as the learning theory categories upon which models for developing instruction guides are based.

Even though there are several approaches to instructional guide development, they all agree on some elements. These common elements include:

1. Competency based (job related). The learners are required to master a skill, knowledge, or attitude. The training focuses on the job by having the learners achieve the criteria or standards necessary for proper task performance.
2. Sequential. Lessons are logically and sequentially integrated.
3. Tracked. A tracking system is established that allows changes and updates to the training materials to be performed efficiently.
4. Evaluated. Evaluation and corrective action allows continuous improvement and maintenance of training information that reflects current status and conditions.

In deciding what model to adopt, Romiszowski (1984) suggests five questions the instructional guide developer must answer. These are:

a) When? - sequence of units, and lessons that should occur.
b) How? - the strategies, methods and tactics that should be used.
c) Who? - the structure and grouping to be used.
d) With what? - the instrument and media to be used.
e) How well? - the test and control mechanism needs.

In this study, the models that are reviewed include:

1) ADDIE (Analysis, Design, Development, Implementation, Evaluation) model and
2) Dick and Carey Instructional Materials Development Model

The ADDIE Model

The ADDIE model of instructional guide development by McGrif (2000) also called System Approach to Training (SAT), provides a means for sound decision making to determine the who, what, why, and how of training. The concept is based on obtaining an overall view of the training process. It is characterized by an orderly process of gathering and analyzing collective and individual performance requirements, and by the ability to respond to identified training needs. Furthermore, McGrif (2000) asserts that the application of a system approach to training insures that training programmes and the required support materials are continually developed in an effective and efficient manner to match the variety of needs in an ever rapidly changing environment.

This ADDIE model therefore, becomes a tool for solving many types of performance problems. The five phases in this model sometimes overlap and can be interrelated; however, they provide a dynamic, flexible guideline for developing effective and efficient instructional material.

The five phases of the model are:

1. Analyze

- The analyze phase is the foundation for all other phases of the instructional design
- Analyze the system to gain a complete understanding of it.
- Compile a task inventory of all tasks associated with each job/skill
- Select tasks that need to be trained (needs analysis).
- Build performance measures for the tasks to be trained on.
- Choose instructional setting for the tasks to be trained on (e.g classroom, laboratory, on the job, self study etc) .

2. Design

- Develop the learning objectives for each task, to include both terminal and enabling objectives.

- Identify and list the learning steps required to perform the task.
- Develop the performance tests to show mastery of the tasks to be trained on.
- List the entry behaviour that the learner must demonstrate prior to training.
- Sequence and structure the learning objectives.

3. Develop

- List activities that will help the student learn the task.
- Select the delivery method.
- Review existing material
- Develop the instructional courseware.
- Synthesize the courseware into a viable training programmer.
- Validate the instruction to ensure it accomplishes all goals and objectives.

4. Implement.

- Create a management plan for conducting the training
- Conduct the training

5. Evaluate.

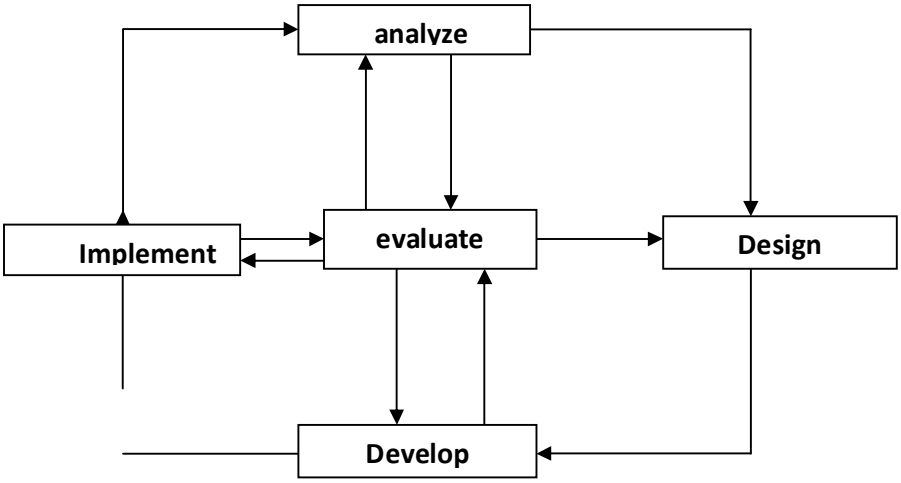
Review and evaluate each phase (analyze, design, develop, implement) to ensure it is accomplishing what is supposed to accomplish .

- Perform external evaluations, e.g. observe that the task that was trained on can actually be performed by the learner on the job.
- Revise training system to make it better.

The ADDIE model provides a process where the results of the formative evaluation of each phase may lead the instructional designer back to any previous phase. Also the end product of one phase is the starting point of the next phase. Commenting on the usefulness of this model, Ogwo and Oranu (2006) observed that it is very suitable in enhancing skill and habit formation in technical and vocational education. This is one major reason that this

model is adopted to guide the development of the instructional manual for learning tailoring technique skills.

ADDIE Model Flow Chart.

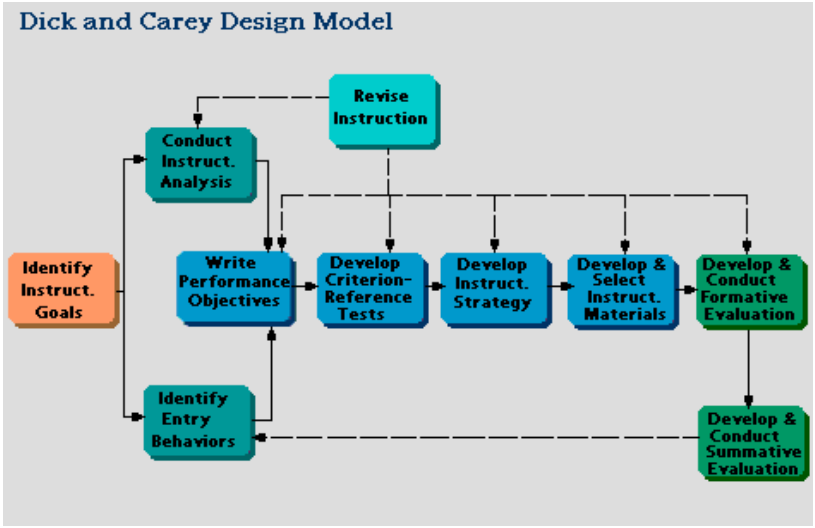


Source: McGriff (2000) fig. 9

Dick and Carey model

This model that was developed by Dick and Carey (1990), have each activity beginning with the identification of an instructional goal or goals. Performance objectives are constructed for each goal which includes student entry behaviour and skills required for successful completion. Criterion referenced assessment items are developed for each objective and a review and selection of the most appropriate instructional strategy to accomplish the objective is carried out. Furthermore, a materials development cycle is followed by field tests of selected activities. Successive cycles of evaluation initiate revisions and leads to final development of the materials

Dick and Carey's Model



Source: Dick and Carey (1990) fig. 10

In recent years, the organization of instruction to be learner-centred has been put forth by educators as a viable alternative to conventional instruction arrangement. This approach is based upon the premise that students are better able to learn if they do so at their own rate and study those areas which focus directly on mastery of a particular objective or set of objectives.

The inadequate teacher preparation and lack of instructional materials are among the obvious deficiencies in the present teaching and learning activities in our Universities that brought about the cooperation between Nigeria and UNESCO (UNESCO-Nigeria Project) in an attempt to revitalize vocational education in Nigeria (Dangana,2010 and Muhammad,2002). One of the most important outcomes of the revitalization project is the emphasis on encouraging and supporting technical education experts to develop teaching and learning materials to meet the needs of the learner and their instructors. Hence, the desire of the researcher to carry out this studies in order to develop an instructional manual for learning tailoring techniques skills application.

Literature revealed a number of instructional manual with different names. They include:

1. Information Sheet
2. Job Sheet
3. Assignment sheet
4. Operation /instructional sheet.

The advantages of instructional manual according to Postlethwart (1991) include:

- Allow the teacher to focus on student deficiencies in subject matter that must be corrected and also serve to eliminate the necessity of covering subject matter already known by the student.
- The manual provides a way of assessing the studentsôprogress in learning.
- It reduces the routine aspects of instruction leaving the teacher free to engage in personal contact with the student.
- The independent nature of self-instruction units facilitates the updating of study materials with major revisions.
- Self-instructional unit potentially can be exchanged between instructions.

Further more, instructional manual according to Derry (1993) is to help in managing large groups of student, with a range of individual differences, who are working at several tasks. To achieve this, the author maintained that instructional sheets must be easily read and contain accurate information. With these advantages, the need for the development of instructional manual for teaching tailoring techniques is justified because the advantages it offers have positive implications in providing the needed focus for effective teaching and learning.

According to Olaitan, et.al (1999), a functional philosophy of vocational education should lend it towards an effective link between man and job. They affirmed that the philosophy has the following characteristics

- Vocational education only functions in proportion as it will enable an individual to actually perfect in doing a job.
- Vocational education must establish appropriate work habits
- Instructional content are specific
- The basis of admission of interested candidates will be based on the ability of these candidates to benefit from the instruction.
- Vocational education is meant for all groups of people irrespective of age.

They emphasized that success in vocational education can only be achieved when all these characteristics are met.

RELATED EMPERICAL STUDIES

Although a variety of research work has been conducted in instructional materials development, but many of them, though, they are not directly related, was helpful to provide background to the present study. And so a review of these and other studies are presented below.

Anyakoha (1982) carried out a study to identify the competencies in clothing and textile needed by the Home economics teachers in post primary schools in Anambra state using 185 post primary school Home economics teachers. The design for the study was a survey research design. In the study, she found out that Home economics teachers lack some skills and competencies required in pattern drafting in teaching clothing and textile in Anambra state. The study found out among others that this is the major reason why clothing construction students could not carry out any meaningful practical work after secondary education. Mean percentages and ANOVA were used in analyzing the data collected. Hence the researcher indicated that there is need to improve skills in pattern drafting among Home economics teachers in Anambra state. The present study will assist students offering clothing and textile by affording them the opportunity to use self-instructional manual at their convenience in order to meet up with the limited time allocated to clothing practical in school time table. This will attract more students to choose textile and clothing options in their final year as well as perfecting their skills in tailoring some garments.

Anyakoha (1986) carried out a study on the identification of essential traits and tasks of selected clothing occupations for senior secondary school students in Anambra and Imo States of Nigeria utilizing the competency based approach using quasi-experimental research design. The findings of the study among others were to help teachers improve and update their competencies in the area of clothing and textile as well as equip students with skills which they need in order to be gainfully employed in clothing occupations on graduation.

The study identified a total of 45 clothing occupations, 33 traits and 109 tasks. The present study will use (R&D) research and development to develop a self-instructional manual and it is aiming to be a kind of relief to students/learners and a help to the teachers if found effective. The present study will simplify the instructions on the skills or tasks involved in tailoring so that learners can carry out successful practical work with or without instructors.

Donkor (2010) conducted a comparative research to determine the effectiveness or otherwise of the use 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 a five learning centres in Ghana.The study sample consisted of all 73 learners from 3 study centre purposely drawn. The learners from each selected study centres were assigned randomly to two treatment groups. A total of 69 out of 73 selected learners took part in the study, representing overall response rate of 94.5%. 35 out of the selected 36 (representing 97.2% response, rate) were treated to video-based instructional materials, while 34 out of the selected 37 learners (representing 91.9% response rate) were treated to print-based instruction material. The study used two instruments to collect data to answer the three research questions posed. The raw data was analysed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics, such as frequency count, percentage, means, and standard deviations are used to determine to analyse the data collected. T-test at a 0.05 level of significance was used to determine whether the two treatment group differed regarding theoretical and practical skills acquired. The findings of the research 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 two instructional materials were however found to be pedagogically equivalent in terms of the teaching and learning of theory. The study under review and the present study are related and

have certain similarities. The population of both studies involved the Lecturers, Technologists and Students. Though the study under review used experimental design, the present study also employed experimental exercise in try-out stage of her R&D design. Both studies embarked on teaching practical skills.

Igbo (1997) developed and validated a psycho productive skill test for assessing senior secondary school student in clothing and textile. It was designed to develop, validate and try out an instrument for assessing studentsô psycho productive skills in the area of clothing and textiles at the SSS level. Nine objectives, six research questions and two null hypotheses guided the study. In order to develop the instrument, performance objectives were isolated from the senior secondary school clothing and textiles curriculum. The performance objectives were utilized to develop a detailed table of specification based on the 7 levels of psychomotor domain. The table of specification were utilized to develop 170 test items.

The items were validated and 164 items were found adequate and then pilot tested. Item analysis was carried out and 160 items were finally selected. The selected items were field-tested on 204 SS3 students of clothing and textile students from Lagos and Akwa-Ibom states who registered for clothing and textiles at the senior secondary certificate examination (SSCE) for 1995/96 session. Reliability of the instrument was established using Kuder-Richardson formula (K-R21). Data collected from the field study were analysed using mean, point biserial correlation coefficient, item analysis techniques and t-test at 0.05 level of significance. 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 among others are lacking in their area of study. The present study will use the undergraduate students in universities in North Central Nigeria. Though the researcher did not used R&D design, the present study will use R&D design to develop a self-instructional manual to teach tailoring techniques to students in universities. Skills in

pattern selection, drafting and choice of fabrics which were wanting among the clothing and textile students in the above study was corrected using the secondary school students that were offering clothing and textile course in their SSS examination but this present study will address the issue of poor performances of students in application of some tailoring techniques in garment production using final year student offering clothing and textile courses. The questionnaires in this present study will be administered on students offering clothing and textiles in the universities in North Central Nigeria.

Iloeje (2007) developed and tested block pattern for female youths in tertiary institutions in Enugu State of Nigeria. The main purpose of this study was to develop block patterns for female youths in tertiary institutions in Enugu State of Nigeria for use in large scale garments constructed and to test the fit of the garments from the blocks. The Research and Development (R and D) design was employed in carrying out this study. The study was carried out in 3 phases. The first phase determined the body measurements of the subjects of the study. The second phase is the development of blocks for the subjects in three sizes ï small medium and large. The third phase involved the testing of the fit of the garments constructed from the blocks and the modification of the blocks. Two sets of population were used for phase I and II of the study. 17,083 female students and 119 judges comprising lecturers, students and seamstresses. A multi-stage sampling technique was used to select 900 female youths from the female students population. Purposive sampling was used to select 30 judges comprising 10 Home Economics lecturers, 10 Home Economics students and 10 garment producers (seamstresses) from the judges population. Two sets of instruments were used for data collection phase I and II of the study. The first, body measurement guide (BMG) was adopted for use in taking the body measurement of subjects. The second instrument of fire point rating scale was used for scoring the fit of garments constructed from the developed blocks.The data generated by the research questions were analysed using the

mean while one-way ANOVA and the Duncanôs New Multiple Range Test (DNMRT) were used to test the hypotheses at 0.05 level of significance. The major findings include three sets of average measurements of subjects required for drafting bodice, sleeves, skirts and pants blocks for small, medium and large size categories were determined; 21 pieces of block patterns were developed for the three sizes; the fit of the garments were rated very satisfactorily by the three groups of judges; there were no significance difference in the fit mean ratings of the judges for most of fit. The study under review and indeed this study adopted same research design, Research and Development (R and D), specifically; restricted steps of R and D were applied. The study shared similarity with the present study in the area of study, which was carried out in Nigeria. Both the study under review and the present study developed instructional material for skill acquisition purposes.

Njoku (1994) developed a self-evaluation instrument for basic clothing construction techniques for tertiary institutions in Enugu state with an aim to develop a self-evaluation instrument which students in tertiary institutions can use to evaluate basic clothing construction skills. Third year students offering clothing and textile course were used. Sixty-eight (68) item basic clothing construction techniques in self evaluation rating scales were developed for the study. Ten students were used for a pilot test. t-test and percentages were employed in data analysis. The present study is interested in developing 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 these selected tailoring techniques in the present study. Final year students of the selected universities will equally be used for the study too. In this present study, mean and standard deviation will be used to analyze data collected. However, this present study is geared towards facilitating the acquisition of skills in tailoring with a set of well-articulated specific objectives, well planned learning experience that will help attain the specific objectives as well as the appropriate instructional methods and materials for

providing the learning experiences including evaluation techniques for assessing the attainment of the specific objectives were all determined in the study- scarcity of books which students will fall back to necessitated the development of the self-instructional manual to help student to carry on in their clothing practical without the help of an instructor- is the gap filled by this study.

Ogbuanya and Fakorede (2008) carried out a study to determine the effect of learning mode on the psychomotor achievement of Automobile technology students in Technical Colleges. To achieve this, two objectives of the study were formulated as follows:

i. Compare studentsô score on automobile technology psychomotor achievement test when taught with cooperative learning mode and when taught with competitive-learning mode.

ii. Compare the retention ability of boys and girls in automobile technology psychomotor achievement test score under cooperative learning mode and conventional learning mode.

Using a two stage random sampling technique to determine a sample of 96 automobile technology students from four Technical Colleges for the study, the researchers made use of quasi experimental factorial design; specifically, the pre-test and the post-test design with experimental and non-equivalent control group. This is because the intact classes (non-randomized) groups were used for the study. The instruments used for the data collection are: Cooperative learning-mode lesson plan, conventional lesson plan and the Learning-mode Psychomotor Achievement Test (LPAT). The instrument was validated by three experts and trial tested using the test re-test reliability technique on a sample of 30 automobile students divided into three groups. The data analyzed yielded a reliability index of 0.78. The research questions were answered using the mean and standard deviation of the test scores while Analysis of Covariance (ANCOVA was used to test the hypotheses at 0.05 level of

significance. The findings of the study show that- Students taught with cooperative learning mode performed better and females performed better in automobile technology test than the boys. It was concluded from the findings of the study that the cooperative learning mode has positive effects on the psychomotor achievement and retention. Technical teachers should adopt this approach by incorporating this instructional technique in the art of teaching automobile technology in the technical colleges. The present study will also use a conventional lesson plan to check the effectiveness of the self-instructional manual developed.

Onweh (2004) conducted a study on the Instructional Design for the Practical Components of Building Technology for the Nigerian Certificate in Education (Technical) Curriculum. The purpose of the study was to develop an instructional design for the practical components of building technology for the Nigerian Certificate in Education (Technical) Curriculum. Five research questions and 4 hypotheses guided the study. The research and development (R and D) was adopted for the study. The study only adopted the first 3 stages of (R and D) design which are analysis, design, development and implementation and evaluation for the avoidance of raising bias by the researcher. 72 building technology teachers (lecturers and instructors) of NCE (T) programmes in 16 Colleges of Education (Technical) offering Building Technology at the NCE level constitute the population for the study. There was no sampling. The instrument for data collection was a structured questionnaire which was developed and administered. Based on the findings in the pilot study, and on recommendations from the experts who validated the questionnaire for its face validation, it was revised prior to administration for the final study. Out of the 291 questionnaire items, 249 of them, representing 89.57% were considered satisfactory for inclusion in the instructional design. It was found among others that practical test/demonstration is preferred to other methods of evaluating students learning outcomes.

The study under review and this study both adopted the restricted stages of R and D, in which structured questionnaires were used for data collection. The research developed an instructional design for the practical components of building technology for NCE Technical curriculum, while the present study developed an instructional manual for teaching tailoring techniques in universities in the North Central States of Nigeria. Both studies centred on development of instructional materials based on skill acquisition. Similarly, the studies were conducted on university Home Economics lecturers, technical instructors on clothing constructors, final year Home Economics students and tailors who are experts in tailoring jackets, trousers and skirts in Nigeria.

Summary of Literature Reviewed

Home Economics as a broad based field of study and an aspect of vocational education is expected to give training and impart the necessary skills to individuals not only for teaching position, but also equip them with skills to enable them live a useful and satisfying life, be self-reliant and employer of labour. These can only be achieved when the necessary skills in tailoring techniques are imparted adequately to the students.

In the recent past, the reports of external examiners concerning the performances of students in clothing and textile have not been encouraging. However, clothing construction, being one of the courses offered by students in the Home Economics programme, has limited time on the programme time table. Moreover, there are limited numbers of practical personnel or instructors who in some cases do not adequately posses the knowledge of tailoring skills. In case where such instructors possess the tailoring skills, they may not be ready and willing to work outside the official work hours.

It was observed that limited time allocated to clothing and textile practical are not sufficient for the teachers to impart the necessary skills in tailoring to students. Literature reviewed suggested that the students need a helping hand to enable them achieve their dreams. Such a helping hand is a self-instructional manual on tailoring techniques which the students could use even in the absence of their teachers. This self-instructional manual will be developed in appropriateness for teaching tailoring techniques in terms of learning, objectives, content, acceptability, materials, delivery system, evaluation procedure and utility among the Home economics teachers, students and dressmakers.

Three models in instructional manual development were reviewed and it was shown that no one model is able to solve the entire problem associated to the development of a self-instructional manual.

Furthermore, the review of empirical studies related to this study revealed that the works done in development of instructional delivery have been either to determine the status of assimilation of clothing and textile courses among students in tertiary institutions and identification of clothing and textile skills required for self-reliant in secondary school capacity but non was on procedure for acquiring skills in tailoring techniques in the university programme. This is the gap. Therefore this present study have come to fill the gap in literature by developing a self-instructional manual in tailoring techniques for Home Economics students in universities.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the procedures adopted in carrying out this research. This include the design of the study, area of the study, population for the study, sample and sampling techniques, instruments for data collection, validation of the instrument, reliability of instrument, method of data collection, and method of data analysis.

Design of the Study

The study adopted Research and Development (R&D) design. This is because (R&D) Research and Development being a component of evaluation research, aims at developing functional and effective products for needs according to detailed specifications (Gall, Gall and Borg, 2007). It is a research-based approach to developing new programmes and materials to improve education. It uses research findings to design new products and procedures which are further subjected to field-test through research evaluation and refining to meet specified criteria of effectiveness, quality or similar standards (Gall, Gall and Borg, 2007).

The design is considered appropriate for the present study because it used the research findings on the objectives of the manual, practical skills for various tailoring techniques, learning materials required and task-based items and self-evaluation required for learning tailoring techniques to develop training manual for application of some selected tailoring techniques such as interfacing, underlining, lining, tapping and pad-stitching which were field-tested.

Research and Development study involve various steps usually referred to as R and D cycle. These include:

1. Definition of goals which include need assessment.

2. Review of relevant literature pertinent to the product to be developed.
3. Statement of specific objectives and criteria for product development.
4. Development of prototype based on scientific evidence available or pertinent to research findings.
5. Field-test of prototype in the setting, where it will be used eventually.
6. Revision of the prototype to correct deficiencies found in the field testing state.
7. Conducting a main field test of the revised product (Gall, Gall and Borg, 2007).

Though this present study adopted the stipulated cycle of Gall, Gall and Borg (2007), the study had to adopt it with modification so as to meet with the suggestion of Gall, Gall and Borg (2007) which stated that for a student to carry out an R and D project for a thesis, the individual has to undertake small-scale project that involves a limited amount of the original steps.

The design process were articulated into five major phases. These phases includes:-

Phase 1- Development of Tailoring Technique Need Assessment Questionnaire

Here the study developed a questionnaire which was used to collect data for research questions 1-6 titled Tailoring Techniques Need Assessment questionnaire (TTNAQ). This phase lasted for two weeks

Phase II- Development of the self-instructional manual on tailoring techniques

Using data from the findings on the need assessment survey to develop the manual. This phase lasted for four weeks.

Phase III – validation of the self-instructional manual

In this phase, there was a developed validation questionnaire which was used by clothing construction and curriculum experts to carry out the content validation of the self-instructional manual. This phase lasted for three weeks

Phase 1V- teaching students tailoring techniques with the draft self-instructional Manual. This phase lasted for three months.

Phase V- Testing the effectiveness of the self-instructional manual

In this phase, practical skill test item in tailoring techniques (PSTIITT) was administered to the students to determine the effectiveness of the self-instructional manual on the students. This phase lasted for one week. The test items were from interfacing, underlining, lining, tapping and pad-stitching techniques.

Area of the Study

The study was carried out in North Central Nigeria Goe-political zone. The North Central Nigeria comprised of Benue, Nasarawa, Kwara, Kogi, Plateau and Niger States. There are ten (10) Universities in the North Central Nigeria and five (5) of them offer clothing and textile under Home Economics. The Universities that offer clothing and textile include Federal University of Agriculture, Makurdi, Nasarawa State University, Keffi, University of Jos Plateau State, Kogi State University, Anyigba, and Federal University of technology, Minna, Niger state. The area of study was chosen because there were many universities in the zone which offer Home Economics. Also the area is known for garment making and there are numerous commercial tailors or garment constructors in the area.

Population for the Study

The population for the study is 4052 comprising all the Home Economics lecturers and technical instructors in the universities in the area of study, all registered tailors in the area, and all final year Home Economics students offering clothing and textile in the universities in the area of study. The available statistics in the universities show that there are 5 Home Economics (clothing and textile) lecturers and 1 technical instructor at Federal University of Agriculture Makurdi with a total number of 53 final year students and 892 registered tailors around the area. In Nasarawa State University, there are 4 Home Economics

(clothing and textile lecturers) and 1 technical instructor with a total number of 28 final year students and 751 registered tailors within the area. In University of Jos there are 4 Home Economics/clothing and textile lecturers with a total number of 24 final year students and 870 registered tailors around the area while in Kogi State University, there are 5 Home Economics/ clothing and textile lecturers and 1 technical instructor, with a total number of 58 final year students and 628 registered tailors in that area. In University of Technology Minna, there are 5 Home Economics/clothing and textile lecturers with a total number of 32 final year students and 688 registered tailors within the area making a total of twenty-three (23) lecturers and (5) five technical instructors in Home Economics/clothing and textile; one hundred and ninety-five (195) final year Home Economics/clothing and textile students in the universities within the area of study and three thousand, eight hundred and twenty-nine (3829) registered specialist tailors in the area of study (departmental statistical records of the various universities, 2012/2013; and Market mastersô Records of the areas of study 2013 respectively).

Sample and Sampling Technique

Multi-stage sampling technique was employed in sampling for this study. The sample size for this study was 272 persons who participated in three different phases. Purposive sampling technique was used to sample three universities namely- kogi state university, Nasarawa State University and Federal University of Agriculture Makurdi. These three universities were purposively sampled because they offer clothing construction courses and they are not under the threats of insurgents ravaging northern Nigeria. No sampling technique was carried out in the case of Home Economics Lecturers, students, and technical instructors. Therefore, all the Home Economics lecturers in the three sampled universities totalling 14 and the 3 technical instructors-1 from each university and all the final year students in the sampled universities totalling 139 students - comprising 28 students from

Nasarawa State University, 58 from Kogi state university and 53 from Federal University of Agriculture, Markurdi were all involved in the study. Simple random sampling technique where all the names of the registered tailors who are experts in sewing of jackets, skirts and trousers were written, folded and poured in a box and was drawn one by one after shaking giving room for any one of the tailors to be picked for the study. With this method a total of 116 tailors representing 3.03% of the tailor population were sampled for the study. The final year Home Economics students of Nasarawa State University and Federal University of Agriculture Makurdi were used to determine the effect of the developed self-instructional manual using the university clothing laboratories.

Instrument for data Collection

Four sets of instruments were used for data collection. They are as follows-

1. Tailoring Technique Need Assessment Questionnaire (TTNAQ)
2. Self-instructional manual in tailoring techniques (SIMITT)
3. Validates Assessment Questionnaire (VAQ)
4. Psycho-productive (Aptitude) test items in tailoring techniques (PTIITT)

1. **The tailoring technique need assessment questionnaire (TTNAQ)** contained a total of 298 items divided into seven sections, sections, A , B, C, D, E, F and G. Section A solicited information on personal data of the respondents. Section B consists of 46 items on a five-point rating scale aimed at finding out the objectives of the training manual that will be suitable for Home Economics students in universities. Section C consisted of 45 items designed to elicit information on tasks for achieving the specific objectives of tailoring techniques in university programme. Section D has 12 items that dwelt on the instructional materials that could be utilised for teaching tailoring techniques in university programme. Section E consisted of 35 items that elicited information on the instructional tools and equipment that could be utilised for teaching tailoring techniques in university programme.

Section F consisting of 33 items designed to solicit information on the task-based inventory required for self-evaluation of Home Economics students. Section G consisted with 26 items designed to elicit information on tasks achieving skills in some selected tailoring techniques such as interfacing, underlining, lining, tapping and pad-stitching operations in construction of garments like trousers, skirts and jackets.

2. **A developed self instructional manual in tailoring techniques (SIMITT)** in the following selected areas: underlining, lining, interfacing, tapping and pad-stiching etc. The instructional manual comprises the following- objectives, content, tasks for achieving the stated objectives, instructional strategies, instructional materials and evaluation techniques which was used to determine the achievement of the stated objectives.

3. **Validates Assessment Questionnaire (VAQ)**- this was the instrument used by the validates (Home Economics lectures, technical instructors and registered tailors who specialised in making tailored garments like- jackets, skirts and trouser) of the self-instructional manual for teaching tailoring techniques. Validates Assessment Questionnaire (VAQ) was made up of 25 items aimed at judging the quality of the self-instructional manual in terms of its objectives, tasks for achieving the tailoring skills, procedure for task performance, instructional tools and materials and guidelines for assessing the attainment of objectives. The VAQ is a four rating scale of very appropriate(VA), appropriate(A), inappropriate (IA) and very inappropriate(VIA) with scores of 4,3,2, and 1 respectively assigned. The final validation of the developed self-instructional manual for teaching tailoring techniques based on the steps of R&D technique was carried out by the following:

1. 10 Home Economics lecturers
2. 5 technical instructors
3. 5 registered tailors who specialised in tailored garments (jackets, trousers, skirts and shirts). These were given the developed self-instructional manual for teaching

tailoring techniques and the VAQ to rate the appropriateness of the manual for learning the tailoring techniques.

4. **Practical skill test items in tailoring techniques (PSTIITT)-** this instrument was developed to assess the performance of students who were taught with the self-instructional manual. This aptitude test items covered all the expected skills the students would have learnt while using the self-instructional manual. The answers to the test items were made available for the students to indicate their choice to the answer that is the most appropriate for each item.

Validation of the Instruments

The following instruments- TTNAQ, SIMTT, VAQ, PTIITT were developed for this study and were validated by five experts to ascertain the appropriateness/suitability of the items. Two Home Economics lecturers from University of Nigeria Nsukka, one Home Economics lecturer from Nasarawa State University Keffi, one Home Economics lecturer from Federal University of Agriculture Markurdi, - who were experts in clothing construction and one expert of research methods from University of Nigeria Nsukka, carried out the content validation. Each of the validates were given the instrument alongside with the purpose of the study and were requested to identify and correct ambiguous words or terms, inappropriate items, missing items, and also make general comments or suggestions to make the instrument a standard one (see Apendix E page 255)

Reliability of the Instrument:

The reliability of all the instruments for this study was carried out in Jos, Plateau State which did not form part of the study. The tailoring technique need assessment questionnaire (TTNAQ) and self-instructional manual in tailoring techniques (SIMITT) were given to 4 Home Economics lectures, 1 technical instructor, 10 final year Home Economics students in

University of Jos and 5 registered tailors within Jos metropolis while the validates assessment questionnaire (VAQ) was given to 4 Home Economics lectures, 1 technical instructor and 5 registered tailors within Jos metropolis. Cronbach alpha method was used to determine the internal consistency of some of the sections- B, C, E, F, and G, while KR-20 was adopted for section D. The test yielded reliability coefficient of 0.833 and 0.814 respectively. In experimental research, instruments with cronbach alpha coefficient of 0.6 according to Nunnally and Bernstein (1994) is considered adequate for academic research therefore this instrument is considered very reliable for the study having yielded above the target. The practical skill test item in tailoring techniques (PSTIITT) was administered to 10 final year Home Economics students and 5 raters were used for that purpose. The scores of the raters were used to establish the reliability of the scale. A coefficient of 0.80 was obtained using Kendallôs coefficient of concordance. This result is in accordance with Castellan and Siegel (1988) which stated that Kendall coefficient of concordance can be used for assessing agreement among different raters on an issue with the view to arrive at a common or near common scores or agreement (see Appendix G, pg 265)

Method of data collection

Data for this study was collected in phases:

Phase 1-Tailoring Techniques Need Assessment Questionnaire (TTNAQ)

The TTNAQ was administered on the Home Economics lecturers, technical instructors and the final year students in the three Universities involved in the study. It was also distributed to the registered tailors who were experts in construction of jackets, trouser, skirts and shirts within the area of study through personal contact by the researcher and 3 trained research assistants.

Phase II-Development of Self-instructional Manual in Tailoring Techniques

Data gathered from the findings from the tailoring techniques need assessment questionnaire distributed were utilized by the researcher to develop self-instructional manual was developed, see Appendix D

Phase 111- 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 for the study. The content of the questionnaire aided the validates to vet the developed self-instructional manual in tailoring techniques (SIMITT) in terms of clarity, appropriateness, utility, objectivity, format, originality and adequacy of content for use in teaching Home Economics students skills in tailoring. Modifications and alterations to incorporate the outcome of the expertsô validation were effected to produce a standard self-instructional manual ready for trial in the field.

Phase IV – Field Trial of the self-instructional manual

Based on the analysis from the data got 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 various institutions tailoring techniques.

Phase V- Assessment of draft Self-Instructional Manual

Fifty objectives psycho-productive skill test items which were developed based on the skills within the 5 selected tailoring techniques in this study were administered on the final year Home Economics students after they were taught with self-instructional manual (see appendix J). A pre-test was given to the students before they were taught

Method of Data Analysis

The research questions that guided the study were analyzed using descriptive statistics. Research question 1-8 were analyzed using mean. A mean of 3.50 and above was accepted while any mean from 3.49 and below was rejected. ANCOVA was used in analyzing the

hypothesis at 0.05 level of significance Research question 9 was analyzed using t-test. This was because the same test were administered to the same students twice (pre-test was given the students before the interaction with the self-instructional manual and post-test was administered to the students after the interaction with the self-instructional manual). It was observed that the scores of the students in post-test were far much better than the scores they made in the pre-test indicating that the self-instructional manual is very effective (see Table 11, pg 116)

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

This chapter deals with the presentation and analysis of data generated in this study. The data presentation and analysis were based on the research questions and hypotheses formulated for the study.

Research question one

1) What are the specific objectives of the self-instructional manual for teaching tailoring techniques to Home Economics students in universities?

The answer to this research question is found in table 1 below. In order to answer the above research question, the mean responses of both the Home economics lecturers, final year students and the tailors on each of the items were computed and are presented in Table 1.

Table 1 Mean Ratings of the Respondents on the Objectives of Self-instructional Manual for teaching tailoring techniques N-272

s/n	Objectives	Mean	SD	Remarks
1	Develop saleable skills required for successful careers in tailoring	4.00	0.00	Most suitable
2	Develop adequate skill in application of tailoring techniques	4.00	0.00	Most suitable
3	Develop in students work ethics necessary for successful career in tailoring	4.00	0.00	Most suitable
4	Receive occupational experience in training related to the one available in the work places	3.09	0.54	Suitable
5	Develop in students positive attitudes and proper working habits for sustainable employment.	3.81	0.40	Most suitable
6	Develop self-confidence and maturity in students career goals in tailoring of garments	1.29	0.46	Not suitable
7	Supplement job experience of students from the industry.	3.09	0.54	Suitable
8	Develop adequate skills necessary for enhancing the studentsô interest in tailoring.	3.81	0.40	Most suitable
9	Improve studentsô interest in tailoring	3.09	0.54	Suitable
10	Guide the students in acquiring proper skills in application of tailoring techniques in garments.	3.84	0.36	Most suitable
11	Provide students with adequate knowledge in application of interfacing, underlining, lining, tapping and pad-stitching techniques in a tailored garment.	4.00	0.00	Most suitable
12	To improve studentsô employability skills	4.00	0.00	Most suitable
13	Enhance individualized development of skill and knowledge.	3.81	0.40	Most suitable
14	Provide the students with the art skills required for successful career in tailoring	3.90	0.35	Most suitable
15	Inculcate in students the adequate skills necessary for smooth transition from school environment to work place or industry	3.47	0.10	Suitable
16	Enhance studentsô opportunity to progress in all their educational pursuits	1.29	0.46	Not suitable

Table 1 revealed that, out of the 16 objectives of tailoring techniques 10 items were considered most suitable, whose mean were above 3.50 ï 4.00, four items were considered suitable with a mean of 3.09. However, items sixs and 16 were considered not suitable due to their low mean responses of 1.29.

Research Question 2

1) What are the tasks necessary for achieving skills in tailoring techniques ï interfacing, underlining, lining, taping and pad-stitching? The answer to this research question is in Tables 2- 6

Table 2 Mean Ratings of the Respondents on the tasks for achieving skills in interfacing techniques.

s/n	Tasks for achieving skills in interfacing techniques	Mean	SD	Remarks
1	Studying definitions of concepts like interfacing in tailoring,	4.73	0.57	Strongly agreed
2	listing the skills involve in attachment of interfacing	4.97	0.17	Strongly agreed
3	Listing characteristics of well interfaced garments	4.74	0.57	Strongly agreed
4	Discussing the importance of the application of interfacing to garment construction.	4.93	0.25	Strongly agreed
5	Summarizing the effects of poor application of interfacing in garment construction.	4.97	0.17	Strongly agreed
6	Suggesting factors to be considered for proper application of interfacing in garment construction.	5.00	0.00	Strongly agreed
7	Identifying features relating to the positions where these interfacing techniques could be applied in garment construction.	4.93	0.25	Strongly agreed
8	Evaluating various methods of application of interfacing in garment construction.	4.93	0.25	Strongly agreed
9	Discussing the factors that influence choice of each of the interfacing type.	4.93	0.25	Strongly agreed
10	Brainstorming on the reasons for the application of interfacing in garment construction.	4.93	0.25	Strongly agreed
11	Visiting tailoring shops to find out the extent they use interfacing in their garment construction.	1.78	0.42	Disagreed
12	Assessing the skills used by the tailors in the application interfacing in construction of garments.	5.00	0.00	Strongly agreed
13	Interviewing the tailors to ascertain whether they pre-shrink their interfacing before applying it in their fabrics.	5.00	0.00	Strongly agreed
14	Discussing the importance of use a regulatory pressing iron in application of interfacing	4.73	0.57	Strongly agreed
15	Ability to identify fabrics with fast colours before applying interfacing	5.00	0.00	Strongly agreed
16	Investigating the various ways the tailors used to attach interfacing in garment construction.	4.82	0.41	Strongly Agreed
17	Discussing the transferring of pattern markings on the interface side of the garment under construction.	5.00	0.00	Strongly Agreed
18	Demonstrating cutting fusible interfacing from garment pattern.	4.94	0.23	Strongly Agreed
19	Demonstrating pressing of interfacing for 10 second at a time ï covering a section beat by beat,	4.80	0.51	Strongly Agreed
20	Allowing the interfacing to cool before further handling.	4.91	0.35	Strongly Agreed
21	Emphasizing the use of pressing iron in every beat of attachment of fusible interfacing in garment construction.	4.86	0.43	Strongly Agreed

Table 2 revealed the data that provided answers to a part of research question 2 (interfacing techniques) and are presented in table 2. The data reveals that out of 21 items presented, only 1 item was dropped as not necessary for achieving skills in interfacing.

Table 3 Mean Ratings of the Respondents on the Tasks for achieving skills in underlining techniques

s/n	Tasks for achieving skills in underlining techniques	Mean	SD	Remarks
1	Studying definitions of concepts like underlining in tailoring	4.73	0.57	Strongly agreed
2	Listing characteristics of well underlined garments	4.74	0.57	Strongly agreed
3	Discussing the importance of the application of underlining in garment construction.	4.93	0.25	Strongly agreed
4	Summarizing the effects of poor application of underlining in garment construction.	4.97	0.17	Strongly agreed
5	Suggesting factors to be considered for proper application of underlining techniques.	5.00	0.00	Strongly agreed
6	Identifying features relating to the positions where the underlining could be applied in garment construction.	4.93	0.25	Strongly agreed
7	Evaluating various methods of application of underlining in garment construction.	4.93	0.25	Strongly agreed
8	Discussing the factors that influence choice of underlining fabrics.	4.93	0.25	Strongly agreed
9	Brainstorming on the reasons for the application of underlining	4.93	0.25	Strongly agreed
10	Analyzing factors to be considered when selecting underlining and fashion fabrics.	4.93	0.25	Strongly agreed
11	Visiting tailoring shops to find out the extent they use these tailoring techniques in their garment construction.	1.78	0.42	Disagreed
12	Assessing the skills used by the tailors in the application of underlining in construction of garments.	5.00	0.00	Strongly agreed
13	Discussing the importance of use a regulatory pressing iron in attachment of underlining in garment construction.	4.73	0.57	Strongly agreed
14	Discussing the importance of cutting fashion fabrics and underlining using the same pattern piece.	4.74	0.57	Strongly agreed
15	Comparing underlined garment with the one that was not underlined.	4.73	0.57	Strongly agreed
16	Computing profit margin using underlining in garment construction.	2.77	0.57	Undecided
17	Giving reasons for pressing out the bumps and wrinkles in both fashion fabrics and underlining before placing pattern piece.	4.93	0.25	Strongly agreed
18	Ability to identify fabrics with fast colours before attachment of underlining	4.73	0.57	Strongly agreed
19	Emphasizing the use of pressing iron in every beat of attachment of underlining in garment construction.	4.86	0.43	Strongly Agreed

Table 3 revealed the data that provided answers to a part of research question 2 (underlining techniques) and are presented in table 3. The data reveals that out of 19 items presented, only 2 items were dropped as not necessary for achieving skills in underlining.

Table 4 Mean Ratings of the Respondents on the Tasks for achieving skills in lining techniques

s/n	Tasks for achieving skills in lining techniques	Mean	SD	Remarks
1	Studying definitions of concepts like lining in tailoring	4.73	0.57	Strongly agreed
2	listing the skills involve in attachment of lining	4.97	0.17	Strongly agreed
3	Listing characteristics of well lined garments	4.74	0.57	Strongly agreed
4	Discussing the importance of the application of lining to garment construction.	4.93	0.25	Strongly agreed
5	Summarizing the effects of poor application of lining in garment construction.	4.97	0.17	Strongly agreed
6	Suggesting factors to be considered for proper application of lining techniques.	5.00	0.00	Strongly agreed
7	Identifying features relating to the positions where lining could be applied in garment construction.	4.93	0.25	Strongly agreed
8	Evaluating various methods of application of lining in garment construction.	4.93	0.25	Strongly agreed
9	Discussing the factors that influence choice of lining fabrics	4.94	0.24	Strongly agreed
10	Brainstorming on the reasons for the application of lining	4.93	0.25	Strongly agreed
11	Visiting tailoring shops to find out the extent they use lining in their garment construction.	1.78	0.42	Disagreed
12	Assessing the skills used by the tailors in the application of lining in construction of garments.	5.00	0.00	Strongly agreed
13	Discussing the importance of use a regulatory pressing iron in attachment of lining in garment construction.	4.73	0.57	Strongly agreed
14	Di1scussing the reasons behind matching under arm seams together in attachment of lining.	2.28	0.52	Undecided
15	Compiling the list of reasons why during fitting, the armhole of the lining is frequently checked against that of the fashion fabrics.	4.93	0.25	Strongly agreed
16	Discussing the reason why the lining should be constructed separately from the fashion fabrics.	4.93	0.25	Strongly agreed
17	Discussing why seams are always pressed open.	4.93	0.25	Strongly agreed
18	Identifying the reasons for pre- washing of the cotton muslin before usage in garment construction.	4.93	0.25	Strongly agreed
19	Giving reasons for pressing out the bumps and wrinkles in both fashion fabrics and lining before placing pattern piece.	4.93	0.25	Strongly agreed
20	Ability to identify fabrics with fast colours before attaching the lining.	5.00	0.00	Strongly agreed
21	Demonstrating the draping of lining fabrics with the fashion fabrics.	4.86	0.43	Strongly Agreed
22	Checking the compatibility of the fibre content of lining and fashion fabrics.	4.92	0.27	Strongly Agreed
23	Checking whether both fashion and lining fabrics will be handled in laundering together without affecting their quality.	4.88	0.40	Strongly Agreed
24	Emphasizing the use of pressing iron in every beat of lining attachment in garment construction.	4.86	0.43	Strongly Agreed

Table 4 revealed the data that provided answers to a part of research question 2 (lining dtechniques) and are presented in table 4. The data reveals that out of 24 items presented, only 2 items were dropped as not necessary for achieving skills in lining application.

Table 5 Mean Ratings of the Respondents on the Tasks for achieving skills in taping techniques

s/n	Tasks for achieving skills in taping techniques	Mean	SD	Remarks
1	Studying definitions of concepts like taping in tailoring	4.73	0.57	Strongly agreed
2	Listing characteristics of well taped garments	4.74	0.57	Strongly agreed
3	Discussing the importance of the application of taping to garment construction.	4.93	0.25	Strongly agreed
4	Summarizing the effects of poor application of tape in garment construction.	4.97	0.17	Strongly agreed
5	Suggesting factors to be considered for proper application of tape	5.00	0.00	Strongly agreed
6	Identifying features relating to the positions where tape could be applied in garment construction.	4.93	0.25	Strongly agreed
7	Evaluating various methods of application of tape in garment construction.	4.93	0.25	Strongly agreed
8	Discussing the factors that influence choice of tape in garment construction	4.93	0.25	Strongly agreed
9	Brainstorming on the reasons for the application of taping techniques	4.93	0.25	Strongly agreed
11	Visiting tailoring shops to find out the extent they use tape in their garment construction.	1.78	0.42	Disagreed
12	Assessing the skills used by the tailors in the application of tapes in construction of garments.	5.00	0.00	Strongly agreed
13	Discussing the importance of use a regulatory pressing iron in attachment of iron-on tapes in garment construction.	4.73	0.57	Strongly agreed
14	Utilizing the steps involved in the attachment of tape in garment construction.	1.78	0.42	Disagreed
15	Finding out different types of tapes available in the market for tailorsô use.	5.00	0.00	Strongly agreed
16	Ability to identify fabrics with fast colours before attaching the tape	5.00	0.00	Strongly agreed
17	Discussing the reasons behind the measuring of the area for the attachment of tape before cutting.	4.86	0.43	Strongly agreed
18	Discussing the reasons behind holding tapes in a taut position especially on roll line	4.87	0.41	Strongly agreed
19	Giving reasons for notching tapes around lower curves of garments.	4.87	0.41	Strongly agreed
20	Listing some distinctive characteristics of tape application in garment construction.	4.75	0.54	Strongly agreed
21	Emphasizing the use of pressing iron in every beat of garment construction.	4.86	0.43	Strongly agreed

Table 5 revealed the data that provided answers to a part of research question 2(taping techniques) and are presented in table 5. The data reveals that out of 21 items presented, only 2 items were dropped as not necessary for achieving skills in taping techniques..

Table 6 Mean Ratings of the Respondents on the Tasks for achieving skills in pad-stitching techniques

s/n	Tasks for achieving skills in pad-stitching techniques	Mean	SD	Remarks
1	Studying definitions of concepts like pad-stitching in tailoring	4.73	0.57	Strongly agreed
2	Listing characteristics of well pad-stitching garments	4.74	0.57	Strongly agreed
3	Discussing the importance of the application of pad-stitching techniques to garment construction.	4.93	0.25	Strongly agreed
4	Summarizing the effects of poor application of pad-stitching in garment construction.	4.97	0.17	Strongly agreed
5	Suggesting factors to be considered for proper application of pad-stitching techniques.	5.00	0.00	Strongly agreed
6	Identifying features relating to the positions where pad-stitching could be applied in garment construction.	4.93	0.25	Strongly agreed
7	Evaluating various methods of application of pad-stitching in garment construction.	4.93	0.25	Strongly agreed
8	Discussing the factors that influence choice of area of pad-stitching in a garment.	4.93	0.25	Strongly agreed
9	Brainstorming on the reasons for the application of pad-stitching in construction of garments	4.93	0.25	Strongly agreed
10	Visiting tailoring shops to find out the extent they use pad-stitching techniques in their garment construction.	1.78	0.42	Disagreed
11	Assessing the skills used by the tailors in the application of pad-stitching in construction of garments.	5.00	0.00	Strongly agreed
12	Discussing the importance of use a regulatory pressing iron in pad-stitching technique in garment construction.	4.73	0.57	Strongly agreed
13	Ability to identify fabrics with fast colours before pad-stitching	5.00	0.00	Strongly agreed
14	Discussing the use of matching thread in pad- stitching.	4.87	4.87	Strongly agreed
15	Identifying the types of stitches that are best in pad-stitching.	4.90	0.33	Strongly agreed
16	Outlining the steps involved in pad-stitching.	5.00	0.00	Strongly agreed
17	Giving reasons why tiny stitches are most preferred in pad-stitching.	4.75	0.54	Strongly agreed
18	Discussing the necessities of basting before pad-stitching.	4.75	0.54	Strongly agreed
19	Demonstrating the use of fastening stitch to anchor the end of pad-stitching.	4.86	0.43	Strongly agreed
20	Emphasizing the use of pressing iron in every beat of pad-stitching operations.	4.86	0.43	Strongly agreed

Table 6 revealed the data that provided answers to a part of research question 2 (pad-stitching techniques) and are presented in table 6. The data reveals that out of 20 items presented, only 1 item was dropped as not necessary for achieving skills in pad-stitching.

Research question 3

1) What are the step by step procedure of performing tasks in tailoring techniques -interfacing, underlining, lining, taping and pad-stitching? The answer to this research question is in table 7 to table 11.

Table 7 reveals that 9 items that portray fabric cutting processes were all accepted indicating a 100% agreement.

Table 7

Mean Ratings of the Respondents on the item for Interfacing processes in jackets, skirts and trousers N=272

s/n	Tasks	Mean	SD	RMK
1	Pre-shrink the interfacing	5.00	0.00	Strongly agreed
2	If you are using washable woven, wefts and tricot knits for interfacing, fold the interfacing loosely and immerse in a tub of hot water.	5.00	0.00	Strongly agreed
3	Allow it to sit until water cools to room temperature.	5.00	0.00	Strongly agreed
4	Roll it in a towel to remove excess moisture and air dry.	5.00	0.00	Strongly agreed
5	If it is fusible interfacing which has resin in one side, steam shrink by sprinkling water at the non resin side,	5.00	0.00	Strongly agreed
6	hold the iron about 2.5cm to 5cm above the pieces and steam for 5 ï 7 seconds	5.00	0.00	Strongly agreed
7	Cut fusible interfacing from garment pattern using the same pattern piece you used in cutting the fashion fabric to cut the interfacing.	5.00	0.00	Strongly agreed
8	But when it is for small pieces, such as cuffs, it will be much easier to attach interfacing on fabric before placing the pattern piece to cut out.	5.00	0.00	Strongly agreed
9	Lay fashion fabrics on ironing board with the right side down and the wrong side facing up.	4.05	0.82	Agreed
10	Lay interfacing on top of fabric with the glue side on top of wrong side of the fashion fabric.	4.40	0.49	Agreed
11	Heat iron to a temperature compatible to the fabric using electricity or hot charcoal iron.	4.53	0.50	Strongly agreed
12	Regulate the heat of the charcoal iron if so high by dipping the iron in cold water for 2 ï 3 times being careful not to allow the water to enter the burning charcoal.	4.52	0.50	Strongly agreed
13	Using the plastic automatic pressing sponge and or water bottle, sprinkle water on the non glued side of the interfacing which is facing up on the ironing board.	4.51	0.50	Strongly agreed
14	Cut the same size of interfacing of 2ò from the hem of sleeve wrist upwards	4.51	0.50	Strongly agreed
15	Steam baste by holding the iron 2.5cm ï 5cm above the interfacing for 5 ï 7 seconds.	4.49	0.50	Agreed
16	Press for 10 seconds at a time covering sections beat by beat employing some weighty strength on the pressing iron.	4.51	0.50	Strongly agreed
17	Lift up the fused fabric and turn to the right side of the fashion fabric placing the fused side downwards on the ironing board with right side facing up.	4.49	0.50	Agreed
18	Smoothen the possible bubbles out to obtain a very smooth surface and ensure adherence of the glue.	5.00	0.00	Strongly agreed
19	Allow the interfacing to cool before further handling , keeping it out to cool for a minimum of 10 minutes or when you touch it and you	4.49	0.50	Agreed

	could not feel any hotness any longer.			
20	Turn to the interfaced side and transfer all pattern markings using water soluble pencil or tailorsô chalk	5.00	0.00	Strongly agreed
21	Use a zigzag or straight stitch to stitch very close to the edges of the interfacing	5.00	0.00	Strongly agreed
22	Non fusible interfacing can be attached with padding stitches but the interfacing should be trimmed at the seam line.	4.49	0.50	Agreed

Data for providing answers to this research question are presented in Table 7. The data revealed that all the 22 items had their mean responses above 3.50 on a 5 point scale therefore they were all accepted indicating a 100% acceptance.

Table 8

Mean Ratings of the Respondents on the Underlining Processes in Tailoring Technique

S/N	Tasks	mean	SD	RMK
1	Pre-wash the cotton muslin to make it softer and easier	4.47	0.50	Agreed
2	Cut the underlining and the fashion fabrics using the same pattern piece	4.47	0.50	Agreed
3	Lay the wrong side of the fashion fabric on top of the underlining piece.	4.47	0.50	Agreed
4	Pin around the edges, Press out any bumps and wrinkles.	4.47	0.50	Agreed
5	Baste around the edges of each piece. Stay-stitch ½ôô off the edges.	3.99	0.77	Agreed
6	Draw all the pattern markings on the underlining	4.50	0.50	Strongly agreed
7	Draw a straight line from the centre of the dart to the dart tip. Stitch a line of machine bastes stitching along the line you just drew.	2.77	0.57	Undecided
8	Fold along this newly stitched centre line and pin. Stitch darts along marked lines.	4.47	0.50	Agreed

Data for providing answers to this research question are presented in Table 8. Both the Table 6 and the accompanying bar chart reveals that, 7 items equivalent to 98% which had their mean responses above 3.50 on a 5 point scale, had their respondents agree to form the underlining processes in garment construction, while 1 item representing 2% had its means between 1.50-3.490, therefore it was dropped.

Table 9 Mean Ratings of the Respondents on the Lining Processes in Tailoring Techniques

S/N	Tasks	Mean	SD	RMK
1	Drape your garment fabric over the shaping fabric	5.00	0.00	Strongly Agreed
2	Check whether the colour of the lining fabric can change the colour of your outer fabric.	5.00	0.00	Strongly Agreed
3	Check whether the fibre content of the two fabrics are compatible	5.00	0.00	Strongly Agreed
4	Check whether both of them can be laundered together without affecting their quality	5.00	0.00	Strongly Agreed
5	Check whether both fabrics can be pressed in the same way without affecting their fitting.	5.00	0.00	Strongly Agreed
6	Cut lining with the same pattern piece as of the fashion fabrics	5.00	0.00	Strongly Agreed
7	Construct lining separately from the outer garment.	5.00	0.00	Strongly Agreed
8	Construct the jacket lining separately by Joining at one or more major seams. Make a pleat at the centre back for ease and Press the seams open.	5.00	0.00	Strongly Agreed
9	Construct the skirt lining separately by Joining at one or more major seams. Press the seams open.	5.00	0.00	Strongly Agreed
10	Lining for the sleeve	5.00	0.00	Strongly Agreed
11	Baste the sleeve lining and insert the sleeve model into the basted sleeve	5.00	0.00	Strongly Agreed
12	Place the garment right side down on the table, Lay the lining on it with the wrong sides together and Match underarm seams together.	5.00	0.00	Strongly Agreed
13	Fold back the front section and pin the open seams together	5.00	0.00	Strongly Agreed
14	Check the armhole of the lining against that of the garment frequently in fitting.	5.00	0.00	Strongly Agreed
15	Place the armhole seam of the lining next to the garment seam	5.00	0.00	Strongly Agreed
16	From the under arm extend it to the shoulder. Press	5.00	0.00	Strongly Agreed
17	Clip the lining seam to fit the under arm of the garment. Stretch the seam slightly and pin in place along the two front edges of the seam allowance.	5.00	0.00	Strongly Agreed
18	Lining must not be taut at any point. Trim off any surplus fabric remaining maintaining the normal seam allowance. Insert a pocket in the lining before the lining is basted to the facing.	5.00	0.00	Strongly Agreed
19	Cut lining out from the inner pocket pattern and fix.	5.00	0.00	Strongly Agreed
20	Place the underside of the pocket at the predetermined location of the garment Press and join at the wrong side of fashion fabrics	5.00	0.00	Strongly Agreed
21	turn to the right side of the garment, stretch both ends of the pocket and press-style 1	5.00	0.00	Strongly Agreed
22	Style 2 pocket attachment-	4.05	0.82	Agreed
23	Place the underside of the pocket at the predetermined location of the garment turn to the right side of the garment, stretch both ends of the pocket and press-style 2	4.40	0.49	Agreed
24	Construct the lining for the trouser separately. Press open the seams.	4.53	0.50	Strongly agreed
25	Mark out the back pocket of the trouser	4.52	0.50	Strongly agreed
26	Attach the back pocket . baste first and then sew permanently with machine sewing	4.51	0.50	Strongly agreed
27	Baste the side pockets temporarily, press and machine sew	4.51	0.50	Strongly agreed
28	Trim the pocket seam allowance	5.00	0.00	Strongly agreed
29	Use the cut out pattern of a contour waistband for the trouser and skirt, add the seam allowance.	5.00	0.00	Strongly agreed
30	use the same pattern for the lining and the interfacing.	5.00	0.00	Strongly agreed
31	use the same pattern for the fashion fabrics	4.05	0.82	Agreed
32	baste the lining contour waistband with infusible interfacing and pad-stitch the waistband	4.40	0.49	Agreed
33	Notch around the band and leave 1/2ò to the edge of the band, attach the waist band to the skirt	4.53	0.50	Strongly agreed

Data for providing answers to this research question are presented in Table 9. The respondents agree to all the 33 items in lining processes in garment construction indicating a 100% agreement. The data disclosed that all the items had their means above 3.50 on a 5 point scale.

Table 10

Mean Ratings of the Respondents on the Tapping Application Processes in Tailoring

s/n	Tasks	Mean	SD	RMK
1	Measure the required area of the garment to be taped	4.53	0.50	Strongly agreed
2	Cut tape following the measurement taken above	4.97	0.17	Strongly agreed
3	Attach tape to the shoulder of the jacket back bodice	4.96	0.20	Strongly agreed
4	Baste the tape round the facing of the neckline	3.93	0.81	Agreed
5	Hold tape taut below the roll line	4.97	0.16	Strongly agreed
6	Notch tape around lower curve to make it lie flat	4.98	0.14	Strongly agreed
7	Baste the tape at the centre front and mitre at the gorgeline. For additional re-enforcement end tape 1cm, above the point where the lapel and the gorge line meet	4.97	0.16	Strongly agreed
8	place and baste the tape on the interfaced lining for the front of the jacket	4.96	0.20	Strongly agreed
9	Do not clip through outer edge of tape at any time. Stitch inside edge of tape	4.97	0.16	Strongly agreed
10	Baste the tape around the trouser waistband	4.98	0.12	Strongly agreed
11	Attach tape to the edge of the skirt. Baste and press open	4.96	0.20	Strongly agreed
12	Mark out the hem line of the skirt. Attach tape to the edge of the hem line and fold	2.77	0.57	Undecided
13	Try the skirt on yourself and mark out the hem line, put it down and attach the tape round the hem line, press and fold.	2.77	0.57	Undecided

Data for providing answers to this research question are presented in Table 10 The Table shows that, 11 items on tapping processes in garment construction had their mean responses between 3.50.-4.98 on a 5 point scale implying that they were in agreement to tapping processes while 2 items had low mean below 3.49 and they were regarded as undecided issues and so they were dropped.

Table 11

Mean Ratings of the Respondents on the Pad-stitching Processes in Tailoring

S/N	Tasks	Mean	SD	RMK
1	Cut a matching single thread,	4.52	0.50	SA
2	wear a thimble to protect your finger	4.47	0.50	Agreed
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.	4.47	0.50	Agreed
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.	4.47	0.50	Agreed
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.	4.47	0.50	Agreed
6	Make rows closer together in areas where it is desired more firmly such as on sharp roll lines and lapels.	3.99	0.77	Agreed
7	Pad stitching could be done using small, medium, or large size of stitches. Do not pad stitch within the seam allowances.	4.50	0.50	SA
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 ,	4.54	0.50	SA
10	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	4.52	0.50	SA
11	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.	4.47	0.50	Agreed
12	After some line of stitches, press. Allowing the lapel to lie easy over your finger.	4.47	0.50	Agreed
13	M 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.	4.47	0.50	Agreed
14	For a sharp, firm roll, make small pad stitches in the turn area.	4.47	0.50	Agreed
15	Make medium stitches in the flat part of the lapel.	3.99	0.77	Agreed
16	Check the stitching frequently to see that a smooth roll is maintained across the surface.	4.50	0.50	SA
17	corners should tend to roll under slightly, so use small stitches in this area	4.54	0.50	SA
18	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.	4.47	0.50	Agreed

Data for providing answers to this research question are presented in Table 11. The data revealed that all the 18 items of pad-stitching processes had their mean responses above 3.50 on a 5 point scale therefore they were all accepted. This implies that, all the items are agreed to constitute the pad-stitching processes.

Research question 4

What are the instructional materials (consumables) that could be utilised in learning tailoring techniques in university programme? Answer to the research question is in table 12

Table 12 Mean Ratings of the Respondents on the instructional materials that could be utilized in teaching tailoring techniques.

s/n	Instructional materials	X_2	sd	Remarks
1	matching thread	4.93	0.25	Required
2	Bais tape	4.93	0.25	Required
3	Woven and non woven interfacing	4.93	0.25	Required
4	Pressing clothes	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	Tailorôs 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	Zipper	4.87	4.87	Required
16	Buttons	4.90	0.33	Required
17	Water	2.94	0.54	Required
18	Machine oil	4.75	0.54	Required
19	Charcoal	4.93	0.25	Required
20	Pencil	4.93	0.25	Required
21	Cardboard sheets	1.78	0.42	Not required
22	Masking tape	4.93	0.25	Required
23	Hymo fibrics	4.93	0.25	Required

Table 12 above presents the mean data for answering research question 5. Out of 23 items presented as the consumer-able materials for learning tailoring techniques in universities, 21 items were required while only 2 items were not required for the learning of tailoring techniques.

Research question 5

What are the instructional tools and equipment for performing tailoring techniques tasks? Answer to this research question is in table 13

Table 13 Mean Ratings of the Respondents on the Instructional Tools and Equipment that could be utilized in teaching tailoring techniques.

s/n	Tools/Equipment	Mean	SD	RMK
1	A fine hand sewing needle	4.78	0.42	Required
2	Measuring tape	5.00	0.00	Required
3	Pressing iron,	5.00	0.00	Required
4	Thimble	4.86	0.43	Required
5	Tailors pin,	4.86	0.43	Required
6	Scissors,	4.87	0.41	Required
7	clip scissors,	1.78	0.42	Required
8	Magazine.	4.87	4.87	Required
9	Pressing Iron	4.90	0.33	Required
10	Ironing board	2.94	0.54	Required
11	Tracing wheel	4.75	0.54	Required
14	Water bottle	1.73	0.35	Not required
15	tailorsô pins- plastic edge	4.93	0.25	Required
16	Basting thread,	4.78	0.42	Required
17	Seam gauge	5.00	0.00	Required
18	Tailorsô chalk	5.00	0.00	Required
19	Textbooks	4.86	0.43	Required
20	Dictionaries	1.78	0.43	Not Required
21	Teachersô guide	1.82	0.46	Not required
22	Learnersô course book	4.75	0.54	Required
23	Television	1.77	0.41	Not Required
24	Video/video tapes	1,63	0.33	Not required
25	Computer	2.94	0.54	Required
26	Radio	1.77	0.41	Not Required
27	Tape recordings/recorder	4.93	0.25	Required
28	Transparencies	4.93	0.25	Required
29	Overhead projectors	4.87	0.41	Required
30	Slides	1.78	0.42	Required
31	Films	4.87	0.37	Required
32	Chalk board	4.90	0.33	Required
33	Display board	2.94	0.54	Required
34	Charts	4.75	0.54	Required
35	Models	4.90	0.33	Required
36	Real objects	4.90	0.33	Required
37	Plastic automatic pressing sponge	4.87	0.37	Required

Data for providing answers to this research question are presented in Table 13. Presented in Table 13 were the list of tools and equipment required for learning tailoring techniques in universities. Out of 37 items in the table, 31 items were considered required, while 6 items were considered not too necessary.

Research question 6

What are the self- evaluation guidelines that could be utilised in assessing the attainment of the tailoring techniques objectives in the university programme?

Table 14 Mean Ratings of the Respondents on the Self-evaluation Criteria appropriate for tailoring.

s/n	The following should be included in the self-evaluation criteria appropriate for a self-instructional manual on tailoring techniques for Home Economics students	Mean	SD	Remark
1	Cut the woven interfacing on a diagonal grain.	3.96	0.19	M S
2	Sprinkled water on non gum area of interfacing before ironing interfacing on fashion fabric.	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	Fixed the interfacing smoothly on the fashion fabric.	3.06	0.88	S
6	Allow the fused fabric to cool down before further touch to avoid bond interference	1.50	0.50	AS
7	Cut lining using the same pattern piece as of the outer fabric.	1.93	0.36	AS
8	Allow a pleat at the back of a jacket for ease of movement.	4.00	0.00	M S
9	Use hand stitching method to attach the lining.	3.06	0.88	S
10	Hem lining separately	3.07	0.89	S
11	Hem the garment edge ½ôô above the edge of the garment.	3.76	0.52	M S
12	Check the compatibility of the lining to the outer garment	3.76	0.52	M S
13	Cut the underlining using the same pattern piece as of the outer fabric.	3.76	0.52	MS
14	Baste the underlining to the fashion fabric.	3.76	0.52	MS
15	Check whether the underlining will not affect the colour of the outer fabric	3.06	0.88	S
16	Test the compatibility of the two fabrics.	3.06	0.88	S
17	Use soft underlining for a soft outer fabric.	3.06	0.88	S
18	Check whether both the underlining and outer fabric require pressing.	1.50	0.50	AS
19	Cut the tape accurately	1.93	0.36	AS
20	Place the tape in taut position before sewing.	4.00	0.00	MS
21	Notch the tape in a curve so as to lay tape flat.	3.10	0.40	AS
22	Mitre tape at the point of lapel.	3.11	0.40	AS
23	Sew the tape at the accurate position.	3.76	0.52	MS
24	Cut the lapels and collars on a diagonal grain.	3.76	0.52	MS
25	Cut the lapels and interface using the same pattern piece.	3.76	0.52	MS
26	Sew pad-stitching with the appropriate stitch length/size.	3.76	0.52	MS
27	Hand pad-stitching hidden at the right side of the outer fabric.	3.76	0.52	M S
28	Use chevron pad-stitch to sew woven canvas interfacing on outer fabric.	3.76	0.52	M S
29	Press the pad-stitched lapel after sewing.	3.76	0.52	MS
30	Check the roll line of the lapel	3.76	0.52	MS
31	Use glue to attach lining to the fashion fabrics	1.56	0.50	NS
32	Correct use of tools and equipment	3.06	0.88	S
33	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 14. The data in the table 10 above states that 17 items out of the 33 items presented on the criteria for self-evaluation of tailoring processes had their means between 3.50 and 4.00 and they were referred to be most suitable, while 7 items were said to be suitable with the mean of 3.06 and 8 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.

Research question 7

How do the Home Economics lecturers, technical instructors and expert tailors rate the developed self-instructional manual? The answer to this research question is in table 15

Table 15- Mean Ratings of Validates on Items for validating the self-instructional manual.

s/n	Rating activities	$\overline{X}_1$	SD_1	$\overline{X}_2$	SD_2	$\overline{X}_3$	SD_3	$\overline{X}_g$	SD	Rmk
1	Task.	4.20	0.77	4.48	0.81	4.38	0.83	4.39	0.82	Agreed
2	Introducing task to be taught.	4.39	0.65	4.34	0.85	4.36	0.81	4.36	0.81	Agreed
3	Level of students to be taught.	4.21	0.73	4.49	0.80	4.40	0.79	4.40	0.79	Agreed
4	Stating the instructional objectives of the task.	4.21	0.71	4.38	0.80	4.21	0.89	4.26	0.85	Agreed
5	Listing the instructional resources / materials for teaching the task.	4.25	0.77	4.30	0.87	4.36	0.87	4.33	0.86	Agreed
6	Identification of studentsô prior ideas.	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78	Agreed
7	Step by step listing of instructions to be followed in performing the specific tailoring tasks (listing learnersô role/activities.	4.46	0.66	4.32	0.80	4.45	0.75	4.42	0.75	Agreed
8	Learners applying skills listed in the task	4.39	0.65	4.34	0.85	4.36	0.81	4.36	0.81	Agreed
9	Evaluating task performance (teachersô role/activities and studentsô role/ activities)	4.21	0.73	4.49	0.80	4.40	0.79	4.40	0.79	Agreed
10	Comprehensiveness	4.21	0.71	4.38	0.80	4.21	0.89	4.26	0.85	Agreed
11	Specificity of instructions in self-instructional manual	4.25	0.77	4.30	0.87	4.36	0.87	4.33	0.86	Agreed
12	Accuracy of information in the self-instructional manual	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78	Agreed
13	Readability of the self-instructional manual	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78	Agreed
14	Acceptability of the resources listed in self-instructional manual	4.46	0.66	4.32	0.80	4.45	0.75	4.42	0.75	Agreed
16	Appearance of the self-instructional manual	4.25	0.77	4.43	0.77	4.49	0.75	4.45	0.76	Agreed
17	Length of the self-instructional manual	4.18	0.83	4.40	0.84	4.36	0.80	4.35	0.81	Agreed
18	Format appeal of the self-instructional manual	4.39	0.65	4.34	0.85	4.36	0.81	4.36	0.81	Agreed
19	Home Economics teachers	4.21	0.73	4.49	0.80	4.40	0.79	4.40	0.79	Agreed
20	Clothing and textile teachers	4.21	0.71	4.38	0.80	4.21	0.89	4.26	0.85	Agreed
21	Clothing and textile students	4.25	0.77	4.30	0.87	4.36	0.87	4.33	0.86	Agreed
22	Dressmaking students	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78	Agreed
23	Apprentices	4.46	0.66	4.32	0.80	4.45	0.75	4.42	0.75	Agreed
24	Individuals who are interested in sewing	4.46	0.66	4.32	0.88	4.44	0.75	4.41	0.78	Agreed
25	Teachers who need refresher course	4.25	0.77	4.43	0.77	4.49	0.75	4.45	0.76	Agreed

$\overline{X}_1$= Mean of Home Economics Lecturers, SD_1= standard deviation of Home economics lecturers, X_2= mean of technical instructors, SD_2= standard deviation of technical instructors, X_3= Mean of expert tailors, SD_3= standard deviation of expert tailors. X_g= grand mean, SD= standard deviation.

Data presented in table 15 shows the overall mean ratings of three groups of respondents that rated the self-instructional manual. 25 items were listed for assessment by the Home economics Lecturers, technical instructors and tailors. The table shows that all the items listed for assessment were all relevant and were accepted. The standard deviation of items evaluates were less than 1 which indicates that their individual responses were not far from the mean.

Research question 8

What is the effectiveness of the developed self-instructional manual on Home Economics students in universities? The answer to this research question is in table 16.

Table 16 presents the t- test responses on the effectiveness of the developed self-instructional manual in tailoring techniques on the final year Home economics students.

Group		Pre-test	Post-test	Mean gain
	N	70	70	
Experimental	Mean	21.4690	65.0400	43.5443
	Std. Deviation	5.63391	8.6237	
	N	69	69	
Control	Mean	19	58.7500	39.2500
	Std. Deviation	6.10707	9.8310	

Table 16 above contains the data for providing answer to the research question 8. The table compares the mean scores of both the experimental and the control groups in the psycho-productive skill test. The scores of the both groups before and after interaction were clearly stated. Following the data, the experimental group had a mean score of 21.4690 in pre-test and rose up to 65.040 with a mean gain of 43.5443 after their interaction with the manual, whereas the control group had a mean score of 19 in the pre-test and also rose to 58.7500 in the post-test with a mean gain of 39.2500. This result however, indicated a significant effect of the use of the self-instructional manual, implying that the manual is effective. The study further assessed the practical products from both groups and it was found out that the experimental group products were ranked higher than the control product therefore the self-instructional manual is very effective.

Hypothesis

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.

Table 17: presents the test on students' achievement/performance for those taught with self-instructional manual and their counterpart using ANCOVA

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 data presented in Table 17 shows the F-calculated for mean scores of experimental and control groups in the mean achievement in the use of self-instructional manual. 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.

Summary of the major findings of the study

In this study, the following findings were made based on the data collected, analyzed and also from the hypothesis tested.

1. Twelve specific objectives of self-instructional manual in tailoring techniques were determined and presented in table 1 as follows:

   (a) developed in studentsô saleable skills suitable for successful careers in tailoring

   (b) Developed in studentsô work ethics necessary for successful career in tailoring

   (c) Developed adequate skills in application of tailoring techniques

   (d) Develop in studentsô positive attitudes and proper working habits for sustainable employment among others.

2. A total of 97 tasks for achieving the specific objectives of tailoring techniques were determined and presented in tables 2-6, comprising 20 tasks in application of interfacing techniques, 17 tasks in attachment of underlining, 22 tasks for application of lining techniques, 19 tasks in the application of taping and 19 tasks in pad-stitching techniques.
3. A total of 80 step by step procedure of application of the tailoring techniques were determined as it is presented in tables 7- 11, comprising 22 steps in the application of interfacing, 7 steps in attachment of underlining, 33 steps in application of lining, 11 steps in attachment of taping and 17 steps in application of pad-stitching techniques in garment construction.
4. A total of 21 consumable materials were required for the learning of tailoring techniques as shown in table 12.
5. In learning the 5 selected tailoring techniques, 35 instructional tools and equipment were required and are presented in table 13.

6. For assessing the achievement of the objectives of the self-instructional manual on tailoring techniques 33 self- evaluation guidelines were required.
7. All the 25 items listed for assessment by Home Economics Lecturers, technical instructors and the tailors who validated the self-instructional manual were found to be relevant, very appropriate and accepted for the study.
8. The null hypothesis was rejected because the students that used the self-instructional manual performed better than those that used conventional method in learning tailoring techniques to the tune of 13.9% mean difference which shows that the self-instructional manual is very effective

Discussion of Findings

Objectives of Practical application of tailoring techniques in garment construction.

This study revealed that, the identification of objectives for training purposes is very important and can never be overemphasized. It is a fact that a worthy activity should have a spelled out objectives and what it is intended to achieve in specific measurable terms which are the tasks or operations to be carried out. These statements are known as the objectives.

According to Ogbuanya (2013), objectives may be short term for specific tasks and operations or long term in terms of the overall goal of the activity, course or programme. The claim for the above is manifested by the responses to 16 objectives, in which 14 were returned suitable see (Table 1).

The closeness of one item to another in their standard deviation revealed the degree of their suitability. In tailoring operations, identification of tailoring techniques and the specific objective is of basic to achievement of overall goal and is ready to provide information on what to be evaluated in the programme. This is in accordance to a similar study by Alpha (2013) which stated that for objectives to be achieved perfectly the teaching must be

vigorously and effectively carried out and this includes employing appropriate training material in the course of teaching and learning. In another similar study, Donkor, (2010) also stated that, defining goals and objectives serve as the foundation for the development of any activity. In this study, the researcher sees the stating of objectives as a helping hand as it lays the foundation for the assessment of the effectiveness of the training, helps the trainer establish a rapport with the participants, giving the opportunity to correlate the expectations of the participants with the programme of the training.

Aims and objectives are very important in designing effective training. The understanding of the purpose and expected results of the training will help in the proper selection of task-based items, training materials, tools and equipment as well as the evaluation criteria that will be most appropriate for the training. In other words the learners will know precisely the direction the developer is driving to.

Self instructional tasks based-items necessary for achieving skills in tailoring techniques -interfacing, underlining, lining, taping and pad-stitching-

Following the objectives properly, the study establishes the self-instructional tasks based-items. These tasks being derived from the objectives will help in attaining the aims and the objectives of the training. The tasks based-items as shown in tables 2-6 were 97 items which were grouped into 5 clusters - comprising 20 tasks in application of interfacing techniques, 17 tasks in attachment of underlining, 22 tasks for application of lining techniques, 19 tasks in the application of taping and 19 tasks in pad-stitching techniques.

The interfacing technique has a total of 20 tasks which were required for the learning of interfacing operations in tailoring a garment. Interfacing like every other tailoring techniques require good time, proper facilities, adequate materials and patience to carry out the stages of applications skilfully in garment construction.

Underlining technique has a total of 17 tasks which when carefully carried out will give a perfect sewing. Underlining operation is very important in garment construction in the sense that some fabrics can only be well constructed if there is an attachment of underlining otherwise it will be impossible to construct such fabrics. When underlining is attached to a fabric (mostly very light fabrics) it will add weight to the fashion fabric and then they shall be treated as one (see table 3)

A total of 22 tasks were suitable for acquiring skills in attachment of lining in garment construction. As stated in table 4, a total of 24 tasks were presented but 22 tasks were accepted as required for learning skills in application of lining in garment construction.

Attachment of lining is very important in any garment construction because of its numerous important. Lining attachment in garment construction will give the constructed garment a very good look inside, it will help to conceal the seams and as well protect the fashion fabric from ravelling among others. Attachment of lining in tailoring is always the last step of garment construction. The best method of attachment is to join the lining and the fashion fabrics from the neck and from the facing as you can see from the diagram in page 178

In table 5, a total of 19 tasks were selected as required in attachment of tape in garment construction. Tapes do come in so many varieties. Tape attachment in any portion of the garment depends on the type and size of tape. Tapes are attached in garment construction to add more strength to the portion where they are attached. Some edges of a jacket or coat are taped to prevent stretching. Twill tape or seam tape is hand stitched along the seam line or fold line to stabilize bias or curved areas. Tape is usually used along the roll line where the lapels fold back and around the neck seam. The front edge, shoulder seams, armhole seams and pocket or sleeve openings can also be taped.

Pad-stitching technique is very essential in tailoring. As it is presented in table 6 a total of 19 tasks were required in learning pad-stitching operations in garment construction. Pad stitching is a series of small diagonal stitches made by hand through the interfacing and outer fabric. It is done on the under collar and lapels to shape and mould the fabric.

Pad-stitching is used mainly in tailoring to fasten canvas interfacing firmly to the fabric on lapels and collars. When the stitches are made short and close together, they shape the fabric three dimensionally. When they are made long and spaced apart, the stitches simply hold the woven interfacing permanently to the fabric. Sewing machines could pad-stitch using straight or zigzag stitches though they are faster but they are not the best because the possibility of the thread showing at the right side of the constructed garment is there. In a similar study, Alpha (2013) also developed 179 specific task items and also grouped the items into 5 major clusters. The findings of this study are in consonance with the views of Ezugwu (2006), Ozofor (1993), Ogbuanya and Fakorede (2008) and Bawa (2004).

Self-instructional step by step procedure for performing tasks in tailoring techniquesinterfacing, underlining, lining, taping and pad-stitching

In garment construction, there are many steps that are very necessary that they must accompany others to bring a perfect tailored garment. There are other steps a tailor has to take before and after the application of the tailoring techniques listed in this study, to come out with a perfect fit. In garment construction, pattern making and cutting processes are very vital and were introduced in the study as the process for application of some tailoring techniques proceeds.

The interfacing application processes in garment construction of jacket, trouser and skirts were rated for proper application and a total of 22 items were the listed steps of application of this tailoring technique in garment construction. These items were presented in

table 7. The findings of this study reveal that all the 22 items that showcased the application processes of interfacing in garment construction, had a mean rating above 3.50 on a 5 point scale, therefore they were all accepted as a very appropriate steps in interfacing application. This is in agreement with Readerôs Digest, (1994), Ledbetter and Lansing (1981) and Franks (2012) which stated that interfacing application in garment construction in very adequate most especially at the lapel, waist region, and hem lines to give body and support to garments.

Consequently, Table 8 presents answer to the items required for underlining application in garment construction. The table revealed that 7 items were the accepted steps of application of underlining in garment construction. These were in agreement with Doris (1994) where she noted that, every well-tailored garment should be constructed with a good underlining. Supporting this fact, Ledbetter and Lansing (1981) and Doris (1994) stated that the difference between a garment without an underlining, or one of inferior quality, will be apparent after only a few hours of wear.

The findings of this study revealed that underlining is also known as the foundation and upon this foundation the garment is constructed. This is in agreement with Doris (1994) which stated that underlining are placed between the outer cloth and the lining of the garment and has a definite effect on the comfort, appearance, and life of the garment as a well-constructed foundation of a good quality material, retains the shape of the garment throughout its lifetime.

Step-by-step processes of application of lining in garment construction were displayed in table 9. Lining is another tailoring technique in this study. The findings of this study revealed that a total of 33 items indicating steps of application in lining processes in construction of jacket, trouser and skirt were developed. It was also revealed that all the 33 items were in a 100% agreement with the respondents. Lining the garment is the final steps

in the construction process and one of the most exciting steps in tailoring. This is to say that another type of fabric comes into use while constructing a garment. Such fabric could be elegant in colour, design or weave. Supporting this Doris (1994) suggested that Lining is generally used to give a finished look to the inside of the garment, prevents seams from ravelling, reduce wrinkling, help conceal some figure faults and makes a garment easier to slip on and off. This was also in consonance with the ideas from Franks (2012) and Ledbetter (1981) noting among others that application of lining is very important in garment construction.

The findings of the study in table 10 revealed that the mean ratings of 11 items out of 13 items which constituted the processes of applying tape in garment construction were between 3.50 - 4.98 on a 5 point scale and so were accepted for the study. The study revealed that in application of tape to the front of a jacket, the tape must be a light ï weight non-stretchable type. This is because tapes can be made from either cotton or lines fabrics. They are very important in garment construction. This study found out that taping strengthens edges that receive constant strain, such as the front edges of a garment. This is in accordance with the view of Kindersley (1996) which stated that taping prevents stretching in bias areas such as the roll line of the lapel and may also stiffen and delineate edges where a hard flat line is desired.

Table 11 revealed that all the 17 items of pad-stitching processes had their mean responses above 3.50 on a 5 point scale therefore they were all accepted. This implies that, all the items are in agreement to constitute the pad-stitching processes in garment construction. This is in support to the processes stated by Franks (2012) that pad-stitching processes in construction of garments are carried out with the work held over the left hand so that the reveres will roll. She went further to affirm that the stitches should be fairly long and should be worked up and down in rows following the direction of the revere. Ledbetter and Lansing

(1981) and Doris (1994) also supported the findings of this study to use a strand of matching thread and to work up stitches by picking a small quantity of the linen and just the surface of the cloth. As regards the cutting process in pad-stitching, both the canvas and the under collar are cut on the cross wise grain so that the lapel will roll after construction. Summarily data presented from tables 7- 11 provided the answer to research question 3.

Instructional materials that could be used for teaching tailoring techniques

Table 12 presents the mean data for answering research question 5. Out of 23 items presented as the consumer-able materials for learning tailoring techniques in universities, 21 items representing were required for the learning of tailoring techniques. This means that the study is really a practically oriented work. This is in support with the work of Alpha (2013) which stated that in any psychomotor training outfit, the use of appropriate materials for training can never be over emphasized.

Instructional tools and equipment for performing tailoring techniques tasks

Large number of tools and equipment are required in tailoring. Data in Table 13, Presented the list of tools and equipment required for learning tailoring techniques in universities. Out of 37 items in the table, 31 items had a mean response of 3,50 and above therefore, they were all considered as required for learning tailoring techniques. The findings of this study reveal the importance of proper tools in training. Alpha (2013) supported this when he stated that the importance of application of tools and equipment in any psychomotor training outfit are very vital.

Self-evaluation criteria appropriate for assessing tailoring techniques objectives

In Table 14 in this study has 17 items out of the 33 items presented on the criteria for self-evaluating tailoring processes with means between 3.50-4.00 and they were referred to be most suitable, while 7 items were graded suitable with the mean of 3.06 and 8 items were returned averagely suitable. It is very important to evaluate any sort of training to determine

the level of assimilation. Alpha (2013) is of the opinion that evaluation is not achievable without defined objectives. According to Okoro (1991) evaluation is seen as the appraisal of the worthôs or value of a thing or certain action and the making of appropriate decisions on the basis of such appraisal. Dangana (2010) and Okoro (1991) pointed out some purposes of evaluation to include- giving feedback to both the students and the teacher, assists in improving efficiency and effectiveness of training contents and methods, improves the use of organization personnel and other resources, improves employeeôs performance and promote organizational productivity. Anderson and Ball (1998) and Ezeugwu (2006) stated that training evaluation can be formative or summative which are aimed at helping to improve training during and at the end of the programme.

Table 14 further indicated that, the criteria selected for evaluation were associated with practical skill acquisition geared towards development of individual competencies in tailoring.

Validates assessment of the instruments

Data presented in table 15 shows the overall mean ratings of three groups of respondents that rated the self-instructional manual is very appropriate. In that table, 25 items were listed for assessment by the Home economics Lecturers, technical instructors and tailors. The table shows that all the items listed for assessment were all relevant and were accepted.

Effectiveness of the Developed Manual

Table 16 of this study contains the data for providing answer to the research question 8. The mean scores of both the experimental and the control groups were compared and the scores of the both groups before and after interaction were clearly stated. Following the data, the F-calculated values for test of significance between the groups shows that the experimental group had a mean score of 42.9374 in pre-test and rose up to 130.0626 with a

mean gain of 87.0886 after their interaction with the manual, whereas the control group had a mean score of 39 in the pre-test and also rose to 117.5 in the post-test with a mean gain of 78.5. This result however, indicated a significant effect of the use of the self-instructional manual, implying that the manual is effective.

Hypothesis for the study

Table 17 shows the F-calculated value for the group and the result 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, therefore, the null hypothesis was rejected.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Re-statement of the Problem

The need for human resource training and development is indispensable for any nation aspiring to achieve greatness in vocational development and for this reason University education is equally charged with the responsibility of training skilled manpower for economic development of the country. In North Central Nigeria there are many Universities where clothing construction and textile and its related courses are offered. Clothing and textile is made up of both theoretical and practical components. Among the practical components of clothing is the tailoring.

Tailoring involves many sewing techniques ranging from underlining, lining, interfacing, pad-stitching to varieties of other techniques. Studentsô acquisitions of the skills in tailoring techniques are facing some technical challenges.

The practical personnel to teach these courses to students are very few, and many of the available ones lack the competence in imparting the tailoring skills to the students and also those instructors who are well versed in tailoring skills, may not be willing and ready to spend extra hours in the tailoring laboratory with the students.

Clothing construction and tailoring textbooks which could be of a help to students are not easy to come by and the little ones available are very costly in the market thereby making it difficult for students to lay hands on. These tailoring 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 quantity of time allocated to clothing practical is too short and there are no practical manuals to convey the skills appropriately.

With the limited number of skilled teaching staff on ground, a self-instructional manual is needed for the students to follow with little or no assistance from their instructors who will only act as guides. Apparently, skill shortages can be addressed with suitable instructional packages like a self-instructional manual, on which both the teacher and the learner will follow leading to a successful smooth skill acquisition.

By the characteristics of a manual, a self-instructional manual could go a long way in appraising the skill problems of our Home Economics graduates so that they will be able to live in the job. Dreyfus (1980) as in Alpha (2013), propounded that, anyone who wishes to acquire a new skill is immediately faced with two options. He can, like a baby, pick it up by imitation and floundering trail-and-error, or he can seek the aid of an instructor or instructional manual and the latter approach is far more efficient except in case of a dangerous activities such as piloting an aircraft. Since tailoring is a skill oriented trade, the use of a well developed self-instructional manual will guide the learner in making progress even when the teacher is not available.

Summary of Procedures Used in the Study

This study adopted a modified version of Research and Development (R&D) by Gall Gall and Borg (2007). It was carried out in Universities in North Central Nigeria. A total of 272 persons were drawn to participate in this study at different phases for the development of a self-instructional manual for learning tailoring techniques in universities. Three Universities were sampled. 139 final year Home economics students in the 3 universities sampled coupled with 3 technical instructors and 14 Home economics Lecturers were all studied. Out of the whole population of the registered tailors, 3.03% f them were sampled to arrive at 116 registered tailors who were experts in sewing suits within the study area. The design processes were articulated into five major phases. These phases includes:-Phase 1-Development of Tailoring Technique Need Assessment Questionnaire, Phase II-

Development of the self-instructional manual on tailoring techniques, Phase III ï validation of the self-instructional manual, Phase 1V- Field-testing of the drafted self-instructional Manual and Phase V- Testing the effectiveness of the self-instructional manual on the change in behaviour of the students used for the study. The instruments were validated by five experts- three Home Economics, one technical instructor and one tailor. The reliability of the instrument was established using Cronbach Alpha. Administration of the instruments were through direct contact by the researcher and three research assistants which facilitated a 100% return. Mean and standard deviation were used in answering the research questions, t-test and ANCOVA was used to analyze the Hypothesis at 0.05 level of significance. For further explanation, the specific objectives of the study:

- determined the specific objectives of tailoring techniques within clothing construction course in Home Economics programme of the universities
- .determined self instructional tasks based-items necessary for achieving skills in tailoring techniques (interfacing, underlining, lining, taping and pad-stitching)
- determined step by step procedure of performing tasks in tailoring techniques (interfacing, underlining, lining, taping and pad-stitching)
- determined the instructional materials that could be utilised for teaching tailoring techniques in university programme
- determined the instructional tools and equipment for performing tailoring techniques tasks
- determined the self-evaluation guidelines that could be utilised in assessing the attainment of the tailoring techniques objectives in the university programme.
- developed a draft of self-instructional manual for teaching tailoring techniques in university programme
- Validated the drafted self-instructional manual for teaching tailoring techniques.

- determined the effect of the developed self-instructional manual on Home Economics students in universities.

To accomplish these objectives, 9 research questions and a null hypothesis were formulated. The population for the study is 4052 comprising all the Home Economics lecturers and technical instructors in the universities in the area of study, all registered tailors in the area, and all final year Home Economics students offering clothing and textile in the universities in the area of study making a total of twenty-three (23) lecturers and (5) five technical instructors in Home Economics/clothing and textile; one hundred and ninety-five (195) final year Home Economics/clothing and textile students in the universities within the area of study and three thousand, eight hundred and twenty-nine (3829) registered specialist tailors in the area of study.

The sample size for this study was 272 persons who participated in this study in five different phases. Purposive sampling technique was used to sample three Universities namely- kogi state University, Nasarawa State University and Federal University of Agriculture Makurdi. All the Home Economics lecturers in the three sampled universities totalling 14 and the 3 technical instructors-1 from each University and all the final year students in the sampled Universities totalling 139 students were entirely studied. A total of 3.03% of the registered tailors were sampled to arrive at a total of 116 tailors who were experts in constructing jackets, trousers and skirts for the study.

Four sets of instruments were used for data collection. They are as follows-. Tailoring Technique Need Assessment Questionnaire (TTNAQ), Self-instructional manual in tailoring techniques (SIMITT), Validates Assessment Questionnaire (VAQ) and practical skill test items in tailoring techniques (PSTIITT). Cronbatch-Alpha method was used to determine the internal consistency of sections- B, C, E, F, and G, while KR-20 was adopted for section D. The test yielded reliability coefficient of 0.833, 0.814, 0.841 and 0.822 respectively was

returned. In experimental research, instruments with cronbach alpha coefficient of 0.6 according to Nunnally and Bernstein (1994) is considered adequate for academic research therefore these instruments were considered very reliable for the study having yielded above the target.

Practical skill test items in tailoring techniques (PSTIITT) pre and post tests internal consistency were established using the Kendallôs coefficient of concordance (w), and both yielded 0.801. and 0.821w respectively. To establish the validity of the developed draft self-instructional manual for learning tailoring techniques the manual was trial tested on 20 final year Home Economics students from the university of Jos Plateau state. A pre-test was given to the students, who were taken as an intact class and after interacting with the manual a post-test was equally administered same way the pre-test was administered. The result of the tests was analyzed using ANCOVA to test the hypothesis on an SPSS-17

Principal Findings of the Study

1. A detailed self-instructional manual with pictorial views of task steps for learning tailoring techniques in the universities is developed.
2. Tailoring techniques include- interfacing, underlining, lining, tapping, pad-stitching among others.
3. Constructing garments are characterized by- a. Taking accurate body measurement, b. Pattern adaptation and alteration, c. Cutting accurately, d. Application of interfacing, e. Attachment of tape, f. Pad-stitching, g. Application of lining, h. Attachment of underlining among others.
4. Successful tailoring requires materials, tools and equipments which are peculiar to it.
5. Tailoring like any other skill oriented trainings are characterized by specific instructional evaluation criteria.

6. Students taught with self-instructional manual performed better than those taught in the traditional way without the manual.
7. Repeated practices and trials facilitate skill acquisition thus self-instructional manual is a necessity.

Implications of the Findings

The findings of the study have revealed that, effective skill acquisition is possible with repeated exercises as practice makes perfect. The learner must keep practicing to make progress in skill acquisition. The skill gap between Novices to Expertise can only be filled with repeated trainings or practice. The self-instructional manual will enable the learner make references to it and continue to refer to it even after graduation. Since the objectives of vocational education in Nigeria is to develop the skilled manpower that will manage the Nigerian industries, the self-instructional manual adaptation in this study will help in training the learner, even the graduates of Home Economics in practicing tailoring in the industries or make them self-employed. This study wil in no doubt be very useful to Nigerian government most especially as she has recently launched two vocational institutions for skill acquisition- Vocational Enterprise Institutions and Innovation Enterprise Institutions. They are skill development centres and this self-instructional manual will just be adequate.

Home Economics lecturers and other related programmes will, at any point in the course of their teaching, can fall back on the manual for direction towards achievement of their goal. When there is a self-instructional manual or guide at hand, the teachers and trainers of Home Economics can achieve their goal in tailoring at the minimum time and cost. Time and material which could have been wasted as a result of confusion on which tools or equipment to use, activity to carry on first and how, will be saved by using the training manual.

Conclusion

Nigerian educational system is expected to device appropriate strategies for equipping individuals with skills to cope with the situation of serious challenges of unemployment facing individuals, families and the country at large. University education is thereby charged with the responsibility of training skilled manpower for economic development of the country. Central to human resource training and development is the role of vocational sections of higher institutions. Home Economics which is one of the programmes in vocational education in universities in Nigeria, has all her components designed to impart practical skills to the students in the diverse areas with the major aim of challenging idealness after graduation and thus,

The study set out to develop a self-instructional manual for teaching and learning tailoring techniques in universities. The study found out various tailoring techniques- interfacing, underlining, lining, taping, pad-stitching among others and various tasks/skills required for their applications in garment construction.

The study adopted the Research and Development R&D design to develop the self-instructional manual. The developed manual was tried out on final year Home Economics students. The result showed that, it is effective in improving psychomotor achievement because when students interacted with the self-instructional manuals, their performance enhanced. This could be owing to the fact that, the manual is a handy reference which they consulted at their own convenience and pace; therefore, self-instructional manual is an appropriate means for acquiring skills faster and should be highly recommended.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. In order to stimulate meaningful understanding and skill acquisition especially where competency-based learning is expected, students should be encouraged to adopt the use of self- instructional manuals
2. Brainstorming among students groups will be highly encouraged with the use of self-instructional manual so as to carry along the slow learners.
3. The federal ministry of education in collaboration with Nigerian University Commission (NUC) should organize workshops, inviting specialists, students and the industrialist to develop self-instructional manuals in all skill requiring courses in Universities.
4. Federal government should as a matter of priority, provide adequate tools, facilities and fund for the consumables to Home Economics programmes to encourage skill acquisition among our youths.
5. Workshops, seminars and conferences should be organized for the teachers to enlighten them on the importance and use of instructional manuals, either in print or electronics in facilitating skill acquisition.
6. Self-instructional manual should be used for all skill oriented training in the universities so that the objective of eradicating unemployment in Nigeria could be achieved.

Limitations of the Study

1. The manual was bulky because of the large number of operations and skills to be observed in the manual and so lecturers found it difficult to create time to fill the questionnaire timely. Nevertheless, a hundred percent (100%) return of instrument was recorded.

2. Due to the series of tasks involved in tailoring, students were permitted to form groups and to brainstorm within them to come out with the practical test of producing a jacket, trouser or skirt for themselves.

Suggestions for Further Studies

From the findings of this study, the following further researches are suggested

1. Replication of this study in other geo-political zones of Nigeria.
2. The effect of self-instructional manual on the skill acquisition of students in food and nutrition-confectionary practices.
3. Development of video-instructional manual for teaching tailoring techniques in Nigeria.
4. The effect of self-instructional manual on the skill acquisition of students in embroidery technology in garment production.

REFERENCES

Agwasim, B. J., & Agwasim, M. C. (1995) Teaching Vocational Home Economics in Colleges of Education and Universities. Zaria: Institute of Education, Ahmadu Bello University.

Ajayi, G.O. (2000). Challenges to Nigeria Globalization and the information Age in proceedings of workshop on National Information and communiucation Infacstructure. Policy, plans and stractagies. Abuja, Nigeria, march.

Akubue, B. (2004). Strategies for enhancing the pattern drafting skills of dressmakers/tailors who sew female dresses in Enugu state. Unpolished M.Ed. thesis. University of Nigeria Nsukka.

Alpha, A. A. (2013). Development of a sel-instructional manual for teaching sand casting technology in Nigerian Polythechnics. Unpolished M.Ed. thesis. University of Nigeria Nsukka.

Anderson, S. And Ball, S. (1998). *The Profession and Practice of Program Evaluation*. San Francisco: Jossey Bass.

Anyakoha, E. U. (1982). The in-service needs of post-primary school teachers in Home Economics (clothing and textiles) in Anambra state. Unpublished M.d thesis, University of Nigeria MNsukka.

Anyakoha, E. U. (1993) Emerging challenges for Home Economics in Nigeria: Implications for Self reliance. In E. U. Anyakoha, & E. C. Osuala (Eds), Vocational/Technical Education and Self-reliance (Pp. 168 ï 173). Nsukka: Nigerian Vocational Association.

Awosika. B.I. (2002). ñGroup techniquesò. An innovation for improving Skills Acquisition in clothing construction. Being a paper presented at 3rd annual conference of HERAN held on 4th and 7th September 2002.

Barhup.J.(2006).Unique Techniques. http/www.understandinginterfacing retrieved 30/10/09.

Bawa, H.S. (2004). *Manufacturing process.* Ranchi: Tata McGraw-Hill Publishing Company Limited.

Beauchamp, G. A. (1975) Curriculum Theory (3rd Ed). Illinois: Kagg Press.

Bello, J. W., & Willey, J. (1981) Basic principles of teaching. Ibadan: Spectrum Books.

Benner, P. (2001). Using the Dreyfus model of skill acquisition to describe and interpreat skill acquisition and clinical judgment in nursing practice and education. Bulletin of Science, Technology and Society, 24 (3), 188-199.

Berliner, D. (1988). *The development of expertice in Pedagogy.* New Orleans: American Association of colleges for teacher Education.

Betzina. S. (2009). Thread: For those people who love to sew. **http://www.myvoguefabrics.com** retrieved on (28/9/09)

Bloom, B. S. (Ed.) (1956) Taxonomy of educational objectives: The Classification of educational goals. Hand Book I. The cognitive Doman. London: Longman Group.

Crawford, P. (2003). *Exploring the Development of Teaching Expertise: Novice and Expert teachers Reflection upon professional Development.* UMI: Unpublished Ph.D Thesis.

Cream, P. (1996). The complete book of sewing. London. Darling Kindersley Ltd.

Dangana, D.M. (2010). Effect of the use of a practical skills instructional guide on students achievement in lathe machining operations in technical colleges. Unpublished Ph.d Thesis, University of Nigeria. Nsukka

Derry, S.O. (1993). Can studentsô Ratings of instruction serve rival purpose? Journal of Higher Education 7: 117-119.

Dick, H. and Carey, G. A. (1990). Developing instructional systems for vocational training. New York: McGraw-Hill.

Dorin, T., Demin, G. A. and Gael, P. (1990). Assessment of performance under competency based training. New York: Prentice Hall.

Donkor, F. (2010). The comparative Instructional Effectiveness Of Print-Based and Video-Based Instructional Material for Teachnig Practical Skills at Distance. *the International Review of Research in Open Distance Learning. 11 No. 1.*

Eraut, M. R. (1991) Defining education objectives. In A Lewy (Ed), The International Encyclopedia of Curriculum (Pp. 306 ï 316). New York: Pergamon Press.

Eraut, M. R. (1994). *Developing Professional Knowledge and Confidence,* London: Falmer Press.

Ezeoguine. J.A. (2008). Innovation in clothing and textile and related Arts Towards meeting the charging needs in the society. A paper Presented at the 9th National conference in HERAN 10th ï 13th September 2008

Ezeugwu. G.G. (2006). Development and Validation of an instruction or Students Appraisal of teaching Effectiveness in colleges of Education.

Fatimah, A. (2012, June 29). Strategies For Writing Instructional Manuals. Halifax, Nova-Scotia, Canada.

Finch, C.R. and Crunkilton, J.R. (1979). *Curriculum Development in Vocational and Technical Education planning, content, and implementation.* Massachusetts. Allyn and Beacon

Fitzgerald, C.R. (1999). A time capsule of training and learning. Retrieved on 4th April 1999 from http://www.nwlink.com/fitzclark/hrd/history.html

Frank, C. (2012). *The pictorial guide to modern Home Dressmaking* .ODHAMS press Limited, Long Acre, London.

Frings G.S. (1992) Fashion from concept to consumer. New Jersey Prentice. Hall Inc.

Gail, S.L. (200). *Psycho-motive Evaluation Designs.* Montreal: Triple-cycle Publishing.

Gagne, R. M. (1977). The conditions of learning. New York: Holt, Rinehart and Winston.

Gall, M. D. Gall, J. P. & Borg, W. R. (2003). Educational Research: An introduction. Boston: Allyn and Bacon.

Garba, L.N. (1993). Development of an Instrument for evaluating practical projects in woodworking*, Unpublished Doctoral thesis*. University of Nigeria Nsukka.

Gbamanja, S.P.T. (2002). Essentials of Curriculum and Instruction: Theory and Practice (3rd Ed). Port-Harcourt: Paragraphics.

Giachino, J. W. And Gallington, R. O. (1979). Course construction in industry arts, vocational and technical education. Chicago: American Technical Society.

Gronlund, N.E. (1985). Stating objectives for classroom instruction 3rd ed. McMillan Publishing Co. New York.

Henry L, Fabio P and Velker W. (2006). Tailoring techniques simplified. U.S.A. Oberauelk publishing Ltd.

Herschbach, D.R. (1985). Deriving instructional content through task analysis. *Journal of Industrial teacher education* 13 (3) PP 63 ï 81.

Igbo, C. A. (1989). Development and evaluation of task instruction sheets for teaching selected clothing construction skills to senior secondary school students in Anambra state. *Unpublished M. ED. Thesis University of Nigeria, Nsukka.*

Igbo, C. A. (1997). Development and validation of a psychoproductive skill test for assessing senior secondary school student in clothing and textile. *Unpublished Ph.d. Thesis University of Nigeria, Nsukka.*

Igbo, C. A. (2002). Infusing global perspectives into a selected textile and clothing course at the university level in Home Economics education. Nigerian Journal of Curriculum Studies (NJOCS), 9(1), 110 ï 118.

Igbo C.A & Iloeje C.I. (2012). The basics of dress pattern Drafting. Enugu. Inelberg (Nig) Ltd

International Skills Federation, (2007). Self instruction in Basic Skil Acquisition. *World Conference on Skill Training* (pp.23-31). Porto: International Skills Federation.

Johana, D.H. (2010). Thread creativity. Sewing made easy. http://www..tipsforfusibleinterfacing.htm (21/4/10).

Kerlinger, F. N. (1973). Foundations of Behavioural Research (2nd Ed) New York: Holt, Rinehart and Winston

Kindersley .D. (1996) The complete book of sewing. London Bright Arts.

Ledbetter N.M. and Lansing L.T (1981). Tailoring: Tradition and contemporary techniques. New Jersey, Prentice Hall Inc. Limited.

Lemchi, S.N. (2006). Integrating Entrepreneurship Education into mthe NCE Home Economics programme. Unpublished Ph.d Thesis, University of Nigeria Nsukka.

Morrison, K., Manion, L.and Louis, C. (2007). *Research Methods in Education.* New York: Rutledge.

Mbossoh, R. I. (1994) Instructional materials utilisation in vocational and technical education. Nigerian Vocational Journal, 4, 152 ï 153.

Milva, F.N. (2009). Sewing supportive made easy. Skills in tailoring techniques. http://www..tipsforfusibleinterfacing.htm (30/10/09).

Molokwu, H. (2000). *Developing creativity and problem-solving skills for entrepreneurship. Challenges for home economics. Research issues in Home Economics research (1) : 29.*

Muhammad, A. D. K. (2002). UNESCO-Nigeria Project in support of the revitalisation of technical and vocational education (TVE) in Nigeria: An introduction to the project. A paper presented at the workshop for principals of technical colleges organised by the North West Zonal Centre, UNESCO-Nigeria TVE Revitalisation Project, Kaduna Polytechnic, Kaduna.

Ndubuisi, F. A. (1981). Curriculum evaluation. In U. Onwuka (Ed), Curriculum development for Africa (Pp. 119 ï 152). Onitsha: African Educational.

Nicholls, A. & Nicholls, H.S. (1978). *Developing a Curriculum: a practical guide.* London: George Allen and Union Ltd.

Njoku, S.N. (1994). Development of self-evaluation instrument for basic clothing construction techniques for tertiary institutions in Enugu state. *Unpublished M. ED. Thesis University of Nigeria, Nsukka.*

Nwabunwane C.C. (2001) Practical Home Economics Teaching a prerequisite to Entrepreneurship. Journal of Home Economics Research. Vol 7. Pg 236.

Nzurumike, I. N. (1990). Evaluation. In M.O.E. Akoma, & R. N. Amadi (Ed), Fundamentals of Curriculum (Pp. 130 ï 145). Onitsha: Summer Educational.

Oberg, A. A. (1991). Curriculum decisions. In A. Lewy (Ed), the International Encyclopedia of curriculum (pp.302-303). New York: Pergamon Press.

Offorma, G. C. (Ed) (1994). Curriculum Theory and Planning. Onitsha: Uni-World.

Offorma, F. A. (2012). Selection of Practical Learning Experiences. *International Journal of Applied Behavior*, 51-59.

Ogbuanya, T. C., & Fakorede, S.O.A (2008). Effect of learning mode on the psychomotor achievement of automobile technology students in the technical colleges. In (ed) Nworgu, B. G. *Education in the Information Age: Global Challenges and Enhancement Strategies. Proceedings of First International Conference of the Faculty of Education, University of Nigeria, Nsukka*

Ogwo, B. A. And Oranu, R. N. (2006). Methodology in formal and non-formal Technical/Vocational Education. Nsukka: University of Nigeria Press Ltd.

Okoro, O.M.(2006). Principles and Methods in vocational and technical Education. Nsukka University trust publishers

Olatain S.O, (2003) Understanding curriculum, Nsukka, Ndudim printing and publishing company.

Olaitan, S.O. and Agusiobo, O.N. (1981). Introduction to the teaching of Home Economics. Chichester, New York, Brisbane, Toronto: John Wiley and sons Ltd.

Olaitan, S. O., & Ali, A. A. (1997). The making of a curriculum: Theory, process, product and evaluation. Onitsha: Cape.

Olaitan, S. O. Nwachukum, C. E. Igbo, C. A. Onyemachi, G. A. and Ekong, A. O. (1999). Curriculum development in vocational technical education. Cape Pub. Owerri.

Onweh, G. (2004). *Development of an Instructional Design for the practical components of building technology for the Nigeria Certificate in Education (Technical) curriculum.* Unpublished doctoral thesis. UNN.

Onwuka, U. (Ed) (1981). Curriculum development for Africa. Onitsha: African Educational.

Oranu, R. N. (2003, July 18). *Vocational and Technical Education in Nigeria.* Retrieved March 22, 2012, from UNESCO.org: http//:www:Ibec.Unescoorg.

Onyike, I. O. (1981). Steps in curriculum development. In U. Onwuka (Ed), Curriculum development for Africa (Pp. 75 ï 102). Onitsha: African Educational.

Ozofor, M. N. (1993*). Effects of the target task approach in SS3 students' achievement in conditional probability. Unpublished M.Ed Thesis, University of Nigeria, Nsukka.*

Peggy S. (2008), Silhovette patterns: Tips for fusible interfacing. http://www..tipsforfusibleinterfacing.htm (30/10/09).

Posteltwart, S.N. (1991). *The Encyclopaedia of comparative Education and National systems of Education.* London: Pergamon press.

Reigeluth, C.M. and Curtis, M.V.(1987) Learning situations in an instructional Models. In Gagne, R. M. ed. instructional technology . Foundation. Hillscale. N. J. Lawrence Eribaum Associates.

Rodrich, H. (2011, January 13). Paced Learning Instruction. Toronto, Ontario, Canada.

Rowtree, C. (1998). *A guide to instruction.* Toronto, ON: Ontario Publishers.

Ryles, (2003). Framework for the implementation of a competency based vocational education and training system. Canberra: AGPS.

Sailor, J. G., Alexander, W. M., & Lewis, A. J. (1981) Curriculum planning for better teaching and learning (4th Ed). New York: Holt, Rinehart and Winston.

Sandra, B (2010). Power sewing. *A challenge to home* makers http://www..tipsforfusibleinterfacing.htm. (23/8/2010)

Sang, G.A. (2010). *Developing instructional manuals*. Redmond; WA: Microsoft Encarta 2010 (DVD).

Seels, D. (1997). Taxonomy issues and the development of theory in instructional technology. *Educational Technology*, 37 (1) 12-21.

Sleight, D.A. (1997, November 15). Self-Regulated Learning during Non-Linear Self-instruction. South Michingan, Michigan, United States of America.

Taba, H. (1962). *Curriculum Development Theory and Practice.* New York: Brace and World Inc.

Tarek, W. G (2013). *Self-assessment in Skill Acquisition.* C:\Users\HP\Desktop\Self-Assessment Techniques.mht.

Tiger, J. (2009). Tailoring Techniques- Way Out. Retrieved on 24th of October 2009. http://enwikipedia.org/wiki/clothing

Tyler, R. W. (1975). Basic principles of curriculum and instruction. Chicago: University of Chicago Press.

Tyler, R. W. (1991a). Curriculum resources. In A. Lewy (Ed) The International Encyclopedia of Curriculum (Pp. 291 ï 293). New York: Pergamon Press.

Umoh, J. (2000, June 12). *Ballistic Acquisitic Journal of Petroleum Technology.* Retrieved July 07, 2012, from 38 (6): Http//www.book.google.com.ng/books?d

United Nations Educational Scientific and Cultural Organisation (UNESCO) (1997). Regional training module on guidance and counselling. Gambia: UNESCO Press.

Vanderhoff, M., Franck, L., and Campbell, L. (1985). *Textiles for homes and peoples.* Gin and company. Massachusetts. Pp 97-112

Weber .J. (1990) clothing, fashion, fabrics construction, Preora Illinois Glenco Macmillan/McGraw-Hill.

Wheeler, D. K. (1980) Currculum Process. London: Hodder and Stoughton.

APPENDIX A

Summary of Number of University lecturers in Home Economics, clothing and textile technologists, final year Home Economics students and sampled tailors in the study area.

University	**Lecturers**	**Technologists**	**Students**	**Tailors**
Federal University of Agriculture, Makurdi	5	1	53	38
Kogi state university, Anyimgba	5	1	58	38
Nasarawa State University, Keffi	4	1	28	40
TOTAL	**14**	**3**	**139**	**116**

APPENDIX B

objectives

Obj	N	Sum	Mean	Std. Deviation
Obj#1	272	1088	4.00	0.00
Obj#2	272	1088	4.00	0.00
Obj#3	272	1088	4.00	0.00
Obj#4	272	840.48	3.09	0.54
Obj#5	272	1036.32	3.81	0.40
Obj#6	272	350.88	1.29	0.46
Obj#7	272	840.48	3.09	0.54
Obj#8	272	1036.32	3.81	0.40
Obj#9	272	840.48	3.09	0.54
Obj#10	272	1044.48	3.84	0.36
Obj#11	272	1088	4.00	0.00
Obj#12	272	1088	4.00	0.00
Obj#13	272	1036.32	3.81	0.40
Obj#14	272	10608	3.90	0.35
Obj#15	272	943.84	3.47	0.10
Obj#16	272	350.88	1.29	0.46

Tasks-based items

	N	Sum	Mean	Std. Deviation
Tbi#1	272	1286.56	4.73	0.57
Tbi#2	272	1289.28	4.74	0.57
Tbi#3	272	1340.96	4.93	0.25
Tbi#4	272	1351.84	4.97	0.17
Tbi#5	272	1360	5.00	0.00
Tbi#6	272	1340.96	4.93	0.25
Tbi#7	272	1340.96	4.93	0.25
Tbi#8	272	1340.96	4.93	0.25
Tbi#9	272	1340.96	4.93	0.25
Tbi#10	272	1340.96	4.93	0.25
Tbi#11	272	484.16	1.78	0.42
Tbi#12	272	1360	5.00	0.00
Tbi#13	272	1360	5.00	0.00

Self-Evaluation

	N	Sum	Mean	Std. Dev
S-Eva 1	272		3.96	0.19
S-Eva2	272	1088	4.00	0.00
S-Eva3	272	515	1.89	0.31
S-Eva4	272	1023	3.76	0.52
S-Eva5	272	425	1.56	0.50
S-Eva6	272	408	1.50	0.50
S-Eva7	272	525	1.93	0.36
S-Eva8	272	1088	4.00	0.00
S-Eva9	272	844	3.10	0.40
S-Eva10	272	425	1.56	0.50
S-Eva11	272	1022.72	3.76	0.52
S-Eva12	272	1023	3.76	0.52
S-Eva13	272	1023	3.76	0.52
S-Eva14	272	1023	3.76	0.52
S-Eva15	272	833	3.06	0.88
S-Eva16	272	765	2.81	0.82
S-Eva17	272	425	1.56	0.50
S-Eva18	272	408	1.50	0.50
S-Eva19	272	525	1.93	0.36
S-Eva20	272	1088	4.00	0.00
S-Eva21	272	844	3.10	0.40
S-Eva22	272	425	1.56	0.50
S-Eva23	272	1023	3.76	0.52
S-Eva24	272	1023	3.76	0.52
S-Eva25	272	1023	3.76	0.52
S-Eva26	272	1023	3.76	0.52
S-Eva27	272	765	2.81	0.82
S-Eva28	272	425	1.56	0.50
S-Eva29	272	408	1.50	0.50
S-Eva30	272	525	1.93	0.36
S-Eva31	272	1088	4.00	0.00
S-Eva32	272	1023	3.76	0.52
S-Eva33	272	1023	3.76	0.52

Processes

	N	Sum	Mean	Std. Deviation
Prcss 1	272	1360	5.00	0.00
Prcss 2	272	1360	5.00	0.00
Prcss 3	272	1360	5.00	0.00
Prcss 4	272	1360	5.00	0.00
Prcss 5	272	1102	4.05	0.82
Prcss 6	272	1197	4.40	0.49
Prcss 7	272	1233	4.53	0.50
Prcss 8	272	1230	4.52	0.50
Prcss 9	272	1227	4.51	0.50
Prcss 10	272	1227	4.51	0.50
Prcss 11	272	1222	4.49	0.50
Prcss 12	272	1227	4.51	0.50
Prcss 13	272	1223	4.49	0.50
Prcss 14	272	1360	5.00	0.00
Prcss 15	272	1223	4.49	0.50
P rcss 16	272	1360	5.00	0.00
Prcss 17	272	1216	4.47	0.50
Prcss 18	272	1216	4.47	0.50
Prcss 19	272	1216	4.47	0.50
Prcss 20	272	1086	3.99	0.77
Prcss 21	272	1224	4.50	0.50
Prcss 22	272	754	2.77	0.57
Prcss 23	272	1216	4.47	0.50
Prcss 24	272	1360	5.00	0.00
Prcss 25	272	1360	5.00	0.00
Prcss 26	272	1360	5.00	0.00
Prcss 27	272	1360	5.00	0.00
Prcss 28	272	1360	5.00	0.00
Prcss 29	272	1360	5.00	0.00
Prcss30	272	1360	5.00	0.00
Prcss31	272	1360	5.00	0.00
Prcss32	272	1360	5.00	0.00
Prcss33	272	1360	5.00	0.00
Prcss34	272	1360	5.00	0.00
Prcss35	272	1360	5.00	0.00
Prcss36	272	1360	5.00	0.00
Prcss37	272	1360	5.00	0.00
Prcss38	272	1360	5.00	0.00
Prcss39	272	1360	5.00	0.00
Prcss40	272	1360	5.00	0.00
Prcss41	272	1360	5.00	0.00
Prcss42	272	1360	5.00	0.00
Prcss43	272	1360	5.00	0.00
Prcss44	272	1360	5.00	0.00
Prcss45	272	1111	4.05	0.82
Prcss46	272	1197	4.40	0.49
Prcss47	272	1233	4.53	0.50
Prcss48	272	1230	4.52	0.50
Prcss49	272	1227	4.51	0.50
Prcss50	272	1227	4.51	0.50
Prcss51	272	1360	5.00	0.00
Prcss52	272	1360	5.00	0.00
Prcss53	272	1360	5.00	0.00
Prcss54	272	1111	4.05	0.82
Prcss55	272	1197	4.40	0.49
Prcss56	272	1233	4.53	0.50
Prcss57	272	1233	4.53	0.50
Prcss58	272	1352	4.97	0.17
Prcss59	272	2725	4.96	0.20
Prcss60	272	1069	3.93	0.81
Prcss61	272	1352	4.97	0.16
Prcss62	272	1355	4.98	0.14
Prcss63	272	1352	4.97	0.16
Prcss64	272	2725	4.96	0.20
Prcss65	272	1352	4.97	0.16
Prcss66	272	1355	4.98	0.12
Prcss67	272	2725	4.96	0.20
Prcss68	272	754	2.77	0.57
Prcss69	272	754	2.77	0.57
Prcss70	272	1230	4.52	0.50
Prcss71	272	1216	4.47	0.50
Prcss72	272	1216	4.47	0.50
Prcss73	272	1216	4.47	0.50
Prcss74	272	1216	4.47	0.50
Prcss75	272	1086	3.99	0.77

Prcss76	272	1224	4.50	0.50
Prcss77	272	1235	4.54	0.50
Prcss78	272	1230	4.52	0.50
Prcss79	272	1216	4.47	0.50
Prcss80	272	1216	4.47	0.50
Prcss81	272	1216	4.47	0.50
Prcss82	272	1216	4.47	0.50
Prcss83	272	1086	3.99	0.77
Prcss84	272	1224	4.50	0.50
Prcss85	272	1235	4.54	0.50
Prcss86	272	1216	4.47	0.50

Instructional materials

IM1	**272**	**1341**	4.93	0.25
IM 2	**272**	**1341**	4.93	0.25
IM 3	**272**	**1341**	4.93	0.25
IM 4	**272**	**1341**	4.93	0.25
IM 5	**272**	**1341**	4.93	0.25
IM 6	**272**	**1301**	4.78	0.42
IM 7	**272**	**1360**	5.00	0.00
IM 8	**272**	**1360**	5.00	0.00
IM 9	**272**	**1322**	4.86	0.43
IM 10	**272**	**1322**	4.86	0.43
IM 11	**272**	**1324**	4.87	0.41
IM 12	**272**	**485**	1.78	0.42
IM 13	**272**	**1324**	4.87	4.87
IM14	**272**	**1333**	4.90	0.33
IM15	**272**	**789**	2.94	0.54
IM16	**272**	**1292**	4.75	0.54
IM17	**272**	**1341**	4.93	0.25
IM18	**272**	**1341**	4.93	0.25
IM19	**272**	**485**	1.78	0.42
IM20	**272**	**1341**	4.93	0.25
IM21	**272**	**1341**	4.93	0.25

instructional tools and equipment

Sn	N	total	mean	SD
ITE 1	**272**	**1301**	4.78	0.42
ITE2	**272**	**1360**	5.00	0.00
ITE3	**272**	**1360**	5.00	0.00
ITE4	**272**	**1300**	4.86	0.43
ITE5	**272**	**1300**	4.86	0.43
ITE6	**272**	**1324**	4.87	0.41
ITE7	**272**	**485**	1.78	0.42
ITE8	**272**	**1324**	4.87	4.87
ITE9	**272**	**1333**	4.90	0.33
ITE10	**272**	**815**	2.94	0.54
ITE11	**272**	**1292**	4.75	0.54
ITE12	**272**	**471**	1.73	0.35
ITE13	**272**	**1341**	4.93	0.25
ITE14	**272**	**1301**	4.78	0.42
ITE15	**272**	**1360**	5.00	0.00
ITE16	**272**	**1360**	5.00	0.00
ITE17	**272**	**1300**	4.86	0.43
ITE18	**272**	**485**	1.78	0.43
ITE19	**272**	**496**	1.82	0.46
ITE20	**272**	**1292**	4.75	0.54
ITE21	**272**	**482**	1.77	0.41
ITE22	**272**	**354**	1,63	0.33
ITE23	**272**	**780**	2.94	0.54
ITE24	**272**	**482**	1.77	0.41
ITE25	**272**	**1341**	4.93	0.25
ITE26	**272**	**1341**	4.93	0.25
ITE27	**272**	**1324**	4.87	0.41
ITE28	**272**	**485**	1.78	0.42
ITE29	**272**	**1324**	4.87	0.37
ITE30	**272**	**1333**	4.90	0.33
ITE31	**272**	**780**	2.94	0.54
ITE32	**272**	**1292**	4.75	0.54
ITE33	**272**	**1341**	4.93	0.25
ITE34	**272**	**1341**	4.93	0.25
ITE35	**272**	**1324**	4.87	0.37

APPENDIX C

Tailoring Techniques Training Manual Instrument Questionnaire (TTTMIQ)

This questionnaire is designed to elicit information that will lead to the development of a self-instructional manual for tailoring techniques in universities. Kindly be as objective as you can.

A. Personal Data

Instruction : Tick ã in the box as it applies to your

Status

Home Economics lecturer ☐

Technical instructor ☐

Tailor ☐

Final year Home Economics ☐

B. Objectives of self-instructional manual in Tailoring Techniques (interfacing, lining, underlining, Taping and Pad-stitching)

Instruction: Please indicate the degree of your agreement or disagreement with the items by ticking ã using the following:

MS - most suitable,

S - suitable,

AS - Averagely suitable,

NS - Not suitable.

The objectives of tailoring techniques manual in university programme

S/N	Objectives of tailoring techniques	Ms	S	As	Ns
1	Develop saleable skills required for successful careers in tailoring				
2	Develop adequate skill in application of tailoring techniques				
3	Develop in students work ethics necessary for successful career in tailoring				
4	Receive occupational experience in training related to the one available in the work places				
5	Develop in students positive attitudes and proper working habits for sustainable employment				
6	Supplement job experience of students from the industry				
7	Develop adequate skill necessary for smooth transition from school to work place				
8	Improve studentsô interest in tailoring				
9	Guide the students in acquiring proper skills in application of tailoring techniques in garments				
10	Provide students with adequate knowledge in application of interfacing, underlining, lining, tapping and pad-stitching techniques in a tailored garment.				
11	To improve studentsô employability skills				
12	Enhance individualized development of skill and knowledge.				

C Five clusters of tasks for achieving the objectives of tailoring techniques in university programme

Cluster 1. Tasks for achieving skills in interfacing technique

S/N	Tasks for achieving skills in interfacing technique	SA	A	UN	D	SD
1	Studying definitions of concepts like interfacing in tailoring,					
2	listing the skills involve in attachment of interfacing					
3	Listing characteristics of well interfaced garments					
4	Discussing the importance of the application of interfacing to garment construction.					
5	Summarizing the effects of poor application of interfacing in garment construction.					
6	Suggesting factors to be considered for proper application of interfacing in garment construction.					
7	Identifying features relating to the positions where these interfacing techniques could be applied in garment construction.					
8	Evaluating various methods of application of interfacing in garment construction.					
9	Discussing the factors that influence choice of each of the interfacing type.					
10	Brainstorming on the reasons for the application of interfacing in garment construction.					
11	Visiting tailoring shops to find out the extent they use interfacing in their garment construction.					
12	Assessing the skills used by the tailors in the application interfacing in construction of garments.					
13	Interviewing the tailors to ascertain whether they pre-shrink their interfacing before applying it in their fabrics.					
14	Discussing the importance of use a regulatory pressing iron in application of interfacing					
15	Ability to identify fabrics with fast colours before applying interfacing					
16	Investigating the various ways the tailors used to attach interfacing in garment construction.					
17	Discussing the transferring of pattern markings on the interface side of the garment under construction.					
18	Demonstrating cutting fusible interfacing from garment pattern.					
19	Demonstrating pressing of interfacing for 10 second at a time ï covering a section beat by beat,					
20	Allowing the interfacing to cool before further handling.					
21	Emphasizing the use of pressing iron in every beat of attachment of fusible interfacing in garment construction.					

Cluster 2. Tasks in achieving skills in underlining technique

S/N	Tasks for achieving skills in underlining techniques	SA	A	UN	D	SD
1	Studying definitions of concepts like underlining in tailoring					
2	Listing characteristics of well underlined garments					
3	Discussing the importance of the application of underlining in garment construction.					
4	Summarizing the effects of poor application of underlining in garment construction.					
5	Suggesting factors to be considered for proper application of underlining techniques.					
6	Identifying features relating to the positions where the underlining could be applied in garment construction.					
7	Evaluating various methods of application of underlining in garment construction.					
8	Discussing the factors that influence choice of underlining fabrics.					
9	Brainstorming on the reasons for the application of underlining					
10	Analyzing factors to be considered when selecting underlining and fashion fabrics.					
11	Visiting tailoring shops to find out the extent they use these tailoring techniques in their garment construction.					
12	Assessing the skills used by the tailors in the application of underlining in construction of garments.					
13	Discussing the importance of use a regulatory pressing iron in attachment of underlining in garment construction.					
14	Discussing the importance of cutting fashion fabrics and underlining using the same pattern piece.					
15	Comparing underlined garment with the one that was not underlined.					
16	Computing profit margin using underlining in garment construction.					
17	Giving reasons for pressing out the bumps and wrinkles in both fashion fabrics and underlining before placing pattern piece.					
18	Ability to identify fabrics with fast colours before attachment of underlining					
19	Emphasizing the use of pressing iron in every beat of attachment of underlining in garment construction.					

Cluster 3 Tasks for achieving skills in lining technique

S/N	**Tasks for achieving skills in lining techniques**	**SA**	**A**	**UN**	**D**	**SD**
1	Studying definitions of concepts like lining in tailoring					
2	listing the skills involve in attachment of lining					
3	Listing characteristics of well lined garments					
4	Discussing the importance of the application of lining to garment construction.					
5	Summarizing the effects of poor application of lining in garment construction.					
6	Suggesting factors to be considered for proper application of lining techniques.					
7	Identifying features relating to the positions where lining could be applied in garment construction.					
8	Evaluating various methods of application of lining in garment construction.					
9	Discussing the factors that influence choice of lining fabrics					
10	Brainstorming on the reasons for the application of lining					
11	Visiting tailoring shops to find out the extent they use lining in their garment construction.					
12	Assessing the skills used by the tailors in the application of lining in construction of garments.					
13	Discussing the importance of use a regulatory pressing iron in attachment of lining in garment construction.					
14	Di1scussing the reasons behind matching under arm seams together in attachment of lining.					
15	Compiling the list of reasons why during fitting, the armhole of the lining is frequently checked against that of the fashion fabrics.					
16	Discussing the reason why the lining should be constructed separately from the fashion fabrics.					
17	Discussing why seams are always pressed open.					
18	Identifying the reasons for pre- washing of the cotton muslin before usage in garment construction.					
19	Giving reasons for pressing out the bumps and wrinkles in both fashion fabrics and lining before placing pattern piece.					
20	Ability to identify fabrics with fast colours before attaching the lining.					
21	Demonstrating the draping of lining fabrics with the fashion fabrics.					
22	Checking the compatibility of the fibre content of lining and fashion fabrics.					
23	Checking whether both fashion and lining fabrics will be handled in laundering together without affecting their quality.					
24	Emphasizing the use of pressing iron in every beat of lining attachment in garment construction.					

Cluster 4. Tasks for achieving skills in taping technique

S/N	**Tasks for achieving skills in taping techniques**	**SA**	**A**	**UN**	**D**	**SD**
1	Studying definitions of concepts like taping in tailoring					
2	Listing characteristics of well taped garments					
3	Discussing the importance of the application of taping to garment construction.					
4	Summarizing the effects of poor application of tape in garment construction.					
5	Suggesting factors to be considered for proper application of tape					
6	Identifying features relating to the positions where tape could be applied in garment construction.					
7	Evaluating various methods of application of tape in garment construction.					
8	Discussing the factors that influence choice of tape in garment construction					
9	Brainstorming on the reasons for the application of taping techniques					
10	Visiting tailoring shops to find out the extent they use tape in their garment construction.					
11	Assessing the skills used by the tailors in the application of tapes in construction of garments.					
12	Discussing the importance of use a regulatory pressing iron in attachment of iron-on tapes in garment construction.					
13	Utilizing the steps involved in the attachment of tape in garment construction.					
14	Finding out different types of tapes available in the market for tailorsô use.					
15	Ability to identify fabrics with fast colours before attaching the tape					
16	Discussing the reasons behind the measuring of the area for the attachment of tape before cutting.					
17	Discussing the reasons behind holding tapes in a taut position especially on roll line					
18	Giving reasons for notching tapes around lower curves of garments.					
19	Listing some distinctive characteristics of tape application in garment construction.					
20	Emphasizing the use of pressing iron in every beat of garment construction.					

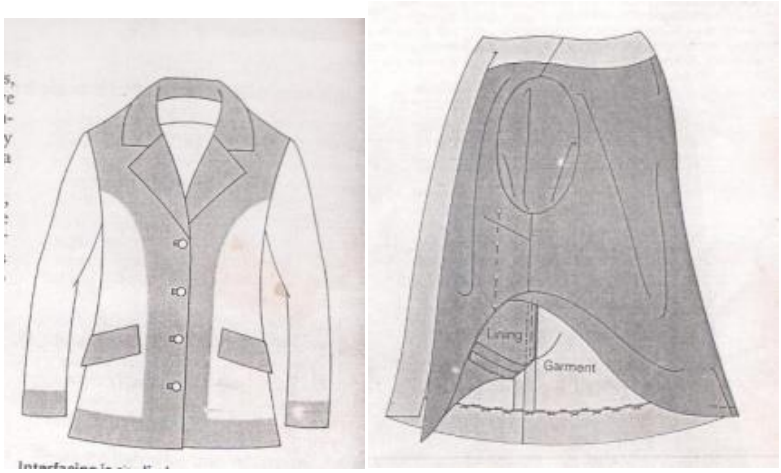
Cluster 5. Tasks for achieving skills in pad-stitching technique

S/N	Tasks for achieving skills in pad-stitching techniques	SA	A	UN	D	SD
1	Studying definitions of concepts like pad-stitching in tailoring					
2	Listing characteristics of well pad-stitching garments					
3	Discussing the importance of the application of pad-stitching techniques to garment construction.					
4	Summarizing the effects of poor application of pad-stitching in garment construction.					
5	Suggesting factors to be considered for proper application of pad-stitching techniques.					
6	Identifying features relating to the positions where pad-stitching could be applied in garment construction.					
7	Evaluating various methods of application of pad-stitching in garment construction.					
8	Discussing the factors that influence choice of area of pad-stitching in a garment.					
9	Brainstorming on the reasons for the application of pad-stitching in construction of garments					
10	Visiting tailoring shops to find out the extent they use pad-stitching techniques in their garment construction.					
11	Assessing the skills used by the tailors in the application of pad-stitching in construction of garments.					
12	Discussing the importance of use a regulatory pressing iron in pad-stitching technique in garment construction.					
13	Ability to identify fabrics with fast colours before pad-stitching					
14	Discussing the use of matching thread in pad- stitching.					
15	Identifying the types of stitches that are best in pad-stitching.					
16	Outlining the steps involved in pad-stitching.					
17	Giving reasons why tiny stitches are most preferred in pad-stitching.					
18	Discussing the necessities of basting before pad-stitching.					
19	Demonstrating the use of fastening stitch to anchor the end of pad-stitching.					
20	Emphasizing the use of pressing iron in every beat of pad-stitching operations.					

D. **TAILORING TECHNIQUE PROCESSES**

Instructions: Please read the following statements on application of tailoring techniques in garment construction carefully and express your opinion on the extent to which you agree or otherwise with each of the statements by ticking ã in any of the five responses of SA- strongly agree, A- Agree, U- Undecided, D- Disagree and SD strongly disagree- in appropriate column

1 Attaching Interfacing to garment-



Introduction

Interfacing is essentially an extra layer of fabric that provides shape and support in detail areas. It is commonly used in collars, cuffs, lapels, necklines, pockets, waistbands, buttonholes, facings and opening edges. Interfacing is used in all these mentioned areas to keep these areas of garment crisp through repeated washings and wearing. In jacket construction, interfacing is attached to the shaded areas as in the illustration above to give the parts body, shape and support. In skirts, interfacings are added at the waist and at the hem depending on the pattern.

Level of student to be taught: Final year students of universities.

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

- Name different types of interfacing
- List at list three resource materials used in interfacing attachment
- Give three important reasons why interfacing is necessary in garment production
- Cut interfacing accurately using the pattern piece
- Perform the fixing of interfacing on fabrics

Learning resources/materials needed:

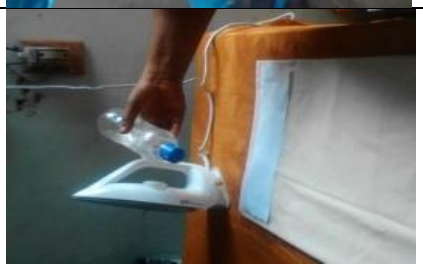
Woven interface
Non-woven interface
Pressing Iron
Ironing board
Pressing clothes
Tracing wheel
Tracing carbon
Water bottle
Pattern piece
Tracing carbon
Scissors
Thimble

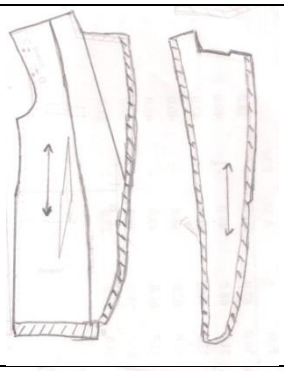
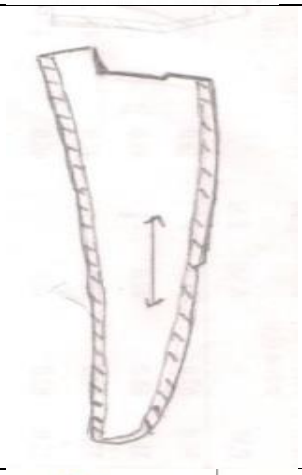
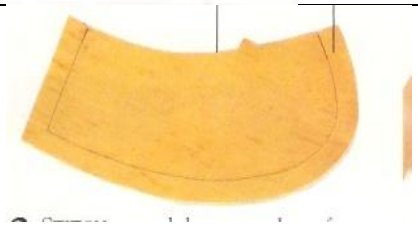
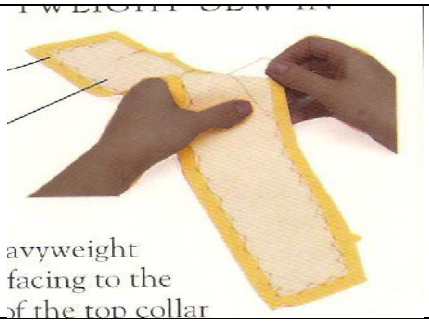
Identifying learners/students prior ideas of the stated task:

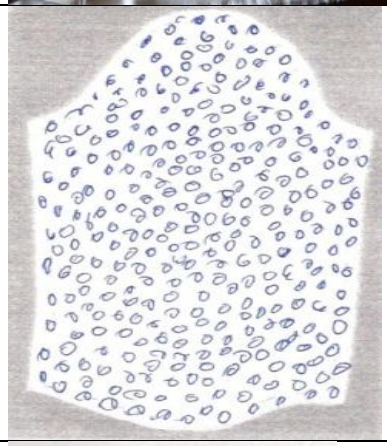
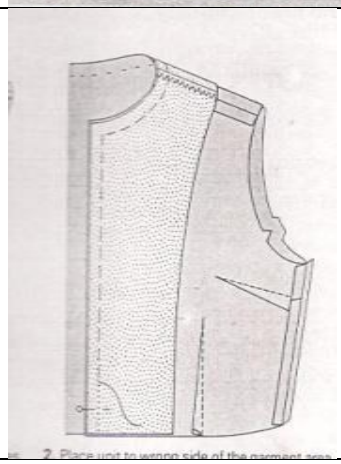
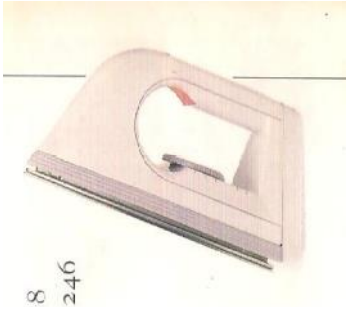
The followings are the learners' prior idea on the stated task-

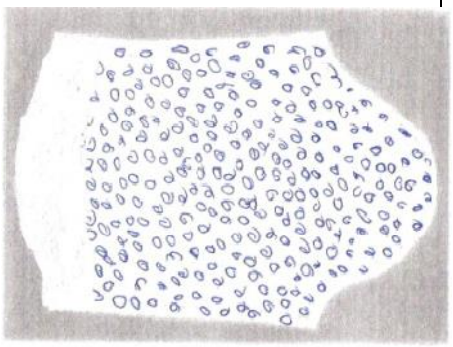
- The learner is aware of the importance of the use of interface in tailoring garments.

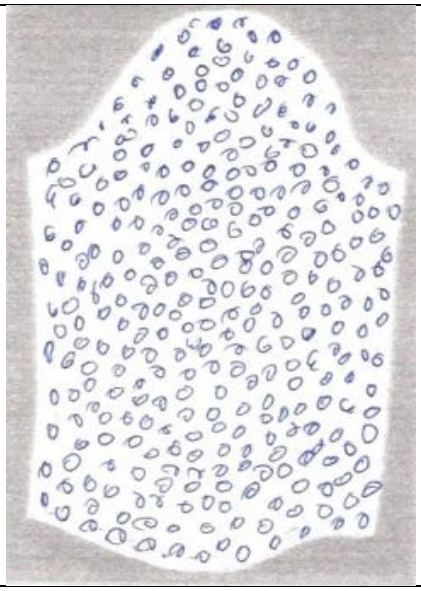
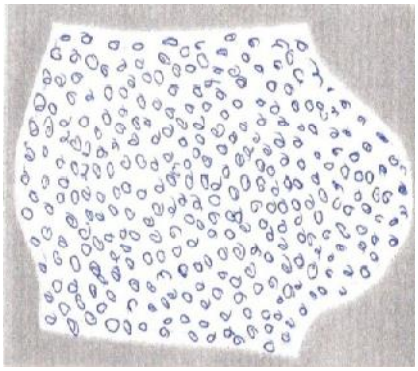
HOW TO APPLY INTERFACING

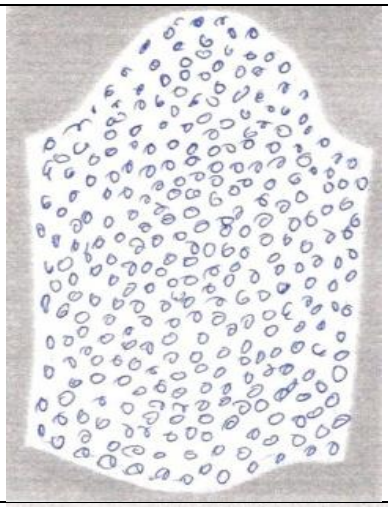
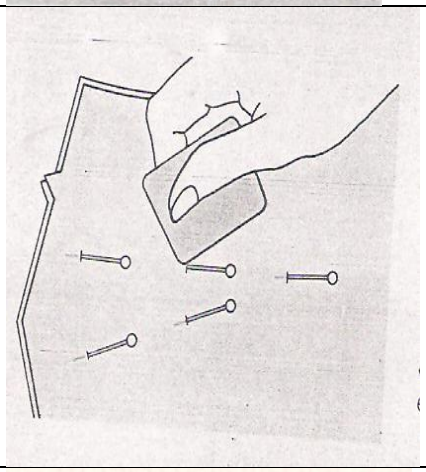
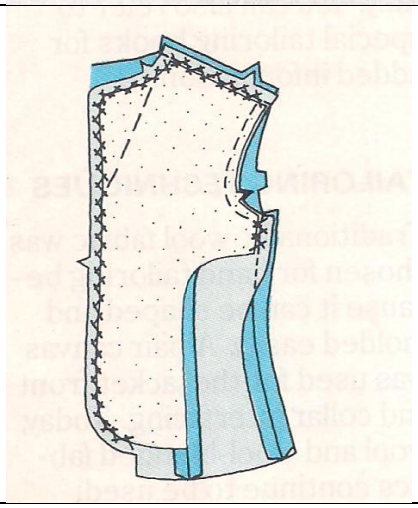
TASKS / PERFORMANCE	Illustration	SA	A	U	D	SD
Pre-shrink the interfacing						
1 If you are using washable woven, wefts and tricot knits for interfacing, fold the interfacing loosely and immerse in a tub of hot water.						
2 Allow it to sit until water cools to room temperature.						
3 Roll it in a towel to remove excess moisture and air dry.						
4 If it is fusible interfacing which has resin in one side, steam shrink by sprinkling water at the non resin side						
5 hold the iron about 2.5cm to 5cm above the pieces and steam for 5 ï 7 seconds						

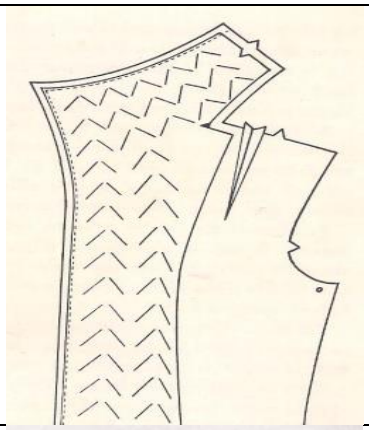
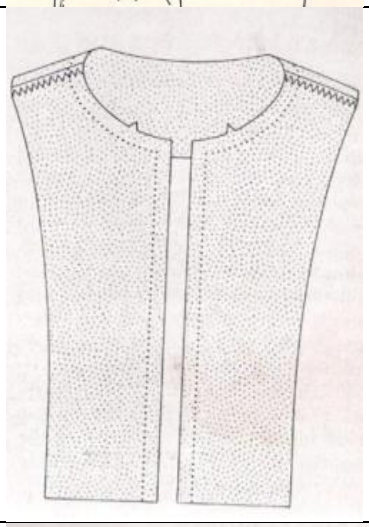
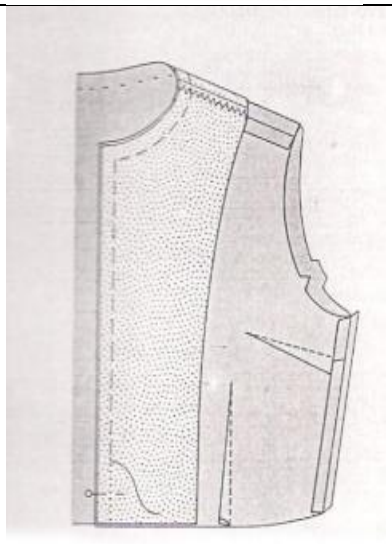
6 Cut out the facing pattern from the front over garment pattern.						
7 Cut fusible interfacing from the facing pattern using the same pattern piece you used in cutting the fashion fabric and that of lining fabric.						
8 Cut out the collar from the fashion fabric and use the same pattern to cut the underlining and the interfacing						
9 Spread out the collar and apply interfacing on one side of the collar						

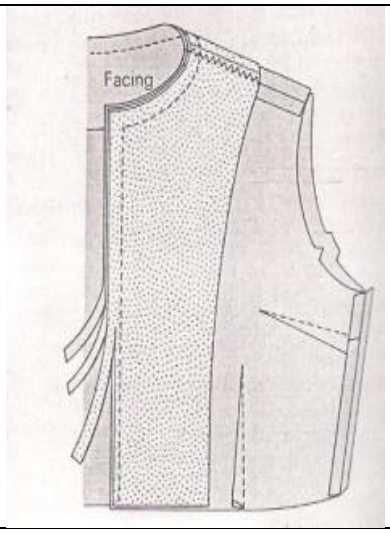
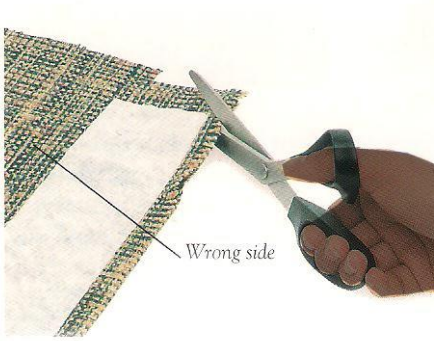
10 But when it is for small pieces, such as cuffs, it will be much easier to attach interfacing on fabric before placing the pattern piece to cut out.						
11 Lay fashion fabrics on ironing board with the right side down and the wrong side facing up.						
12 Lay interfacing on top of fabric with the glue side on top of wrong side of the fashion fabric.						
13 Heat iron to a temperature compatible to the fabric using electricity or hot charcoal iron.						

14 regulate the heat of the charcoal iron if so high by dipping the iron in cold water for 2 ï 3 times being careful not to allow the water to enter the burning charcoal.						
15 Using the plastic automatic pressing sponge and or water bottle, sprinkle water on the non glued side of the interfacing which is facing up on the ironing board.						
16 Cut the same size of interfacing of 2ò from the hem of sleeve wrist upwards						
17 Steam baste by holding the iron 2.5cm ï 5cm above the interfacing for 5 ï 7 seconds.						

18 Press for 10 seconds at a time covering sections beat by beat employing some weighty strength on the pressing iron.						
19 Lift up the fused fabric and turn to the right side of the fashion fabric placing the fused side downwards on the ironing board with right side facing up.						
20 Smoothen the possible bubbles out to obtain a very smooth surface and ensure adherence of the glue.						

21. Allow the interfacing to cool before further handling , keeping it out to cool for a minimum of 10 minutes or when you touch it and you could not feel any hotness any longer.						
22. Turn to the interfaced side and transfer all pattern markings using water soluble pencil or tailorsô chalk						
23. Use a zigzag or straight stitch to stitch very close to the edges of the interfacing						

24 Non fusible interfacing can be attached with pad stitching.						
25 Cut out and mark the interfacing pieces. Using a lapped or butted seam. Join pieces to form a unit for each garment area that is to be interfaced.						
26 Place unit to wrong side of the garment area it is being applied to. Match seam lines and markings; pin unit in place; tack to garment just inside the seam lines.						

27 Match, tack and stitch other sections, such as facing, to garment. Press and trim interfacing close to seam line.						
28 Attach interfacing on the hem line of the jacket. Trim the allowance diagonally close to the interfacing corners.						
29 Fold in the hem line and press wrong side of fashion fabrics with the wrong side placing the interfacing in between them. Press firmly.						

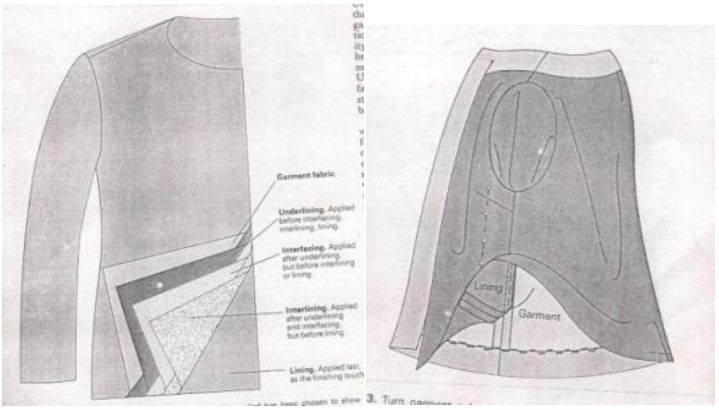
Application of knowledge by learner:

- Learner cuts interfacing accurately with the same pattern piece as that of fashion fabric.
- Learner fixes the interfacing perfectly on fashion fabric.

SELF- EVALUATION BY LEARNER

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtained
Attaching interfacing	Cut the woven interfacing on a diagonal grain. Sprinkled water on non gum area of interfacing before ironing interfacing on fashion fabric. Use the press cloth in fixing interfacing Pre-shrink the interfacing before cutting Fixed the interfacing smoothly on the fashion fabric. Allow the fused fabric to cool down before further touch to avoid bond interference. Total score	5 5 5 5 5 5 30	

2 APPLICATION OF UNDERLINING A GARMENT-



Introduction

Underlining is a layer of fabric stitched to the back of each piece of the outer fabric. It is used to give support to the outer fabric. Underlining is cut from the same pattern piece as of the outer fabric. Both of them are usually stitched together and are handled as one throughout construction. An underlining helps to prevent stretching in the fashion fabric and also prevent see-through in certain areas of the garment.

Level of students to be taught: Final year students of universities.

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

- Give 4 reasons for using underlining in garment construction.
- Cut underlining perfectly using the same pattern piece as in outer fabric.
- Sew underlining perfectly well in fashion fabric.

Learning resources/materials
Tailors' chalk
Worn-down pieces of soap
Tracing wheel
Tracing paper
Water erasable marker

Matching thread
Hand needle
Thimble fine tailor pins
Muslin fabrics
Tape
Seam gauge
Pattern piece
Fashion fabric

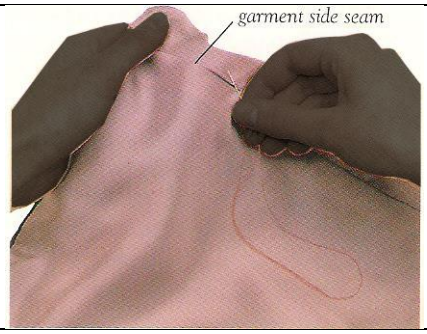
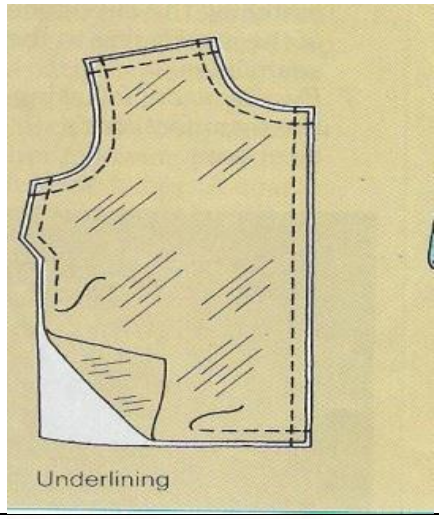
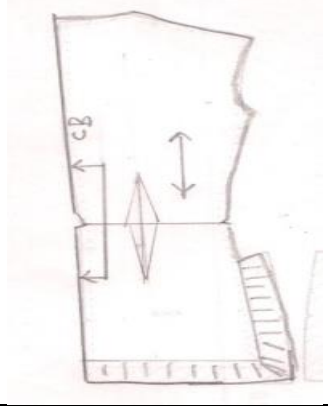
Identifying learners /students prior ideas of the stated task:

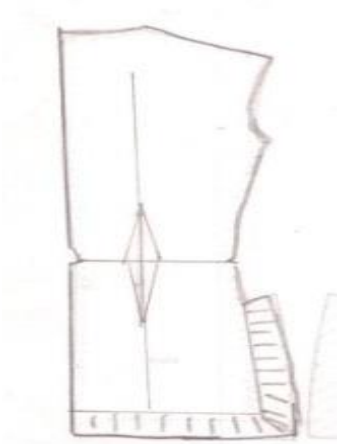
- Learners have been using garments sewn with underlining.

- Learner have been seeing dressmakers sewing garments with underlining

PERFORMING UNDERLINING

TASKS/ PERFORMANCE	ILLUSTRATION					
1.Pre-wash the cotton muslin to make it softer and easier						
2 Cut the underlining and the fashion fabrics using the same pattern piece						
3 Lay the wrong side of the fashion fabric on top of the underlining piece and cut.						

4 Pin around the edges, Press out any bumps and wrinkles.						
5 Baste around the edges of each piece. Stay-stitch ½ô off the edges.						
6 Draw all the pattern markings on the underlining						

7 Draw a straight line from the centre of the dart to the dart tip. Stitch a line of machine bastes stitching along the line you just drew.						
8 Fold along this newly stitched centre line and pin. Stitch darts along marked lines.						

Application of knowledge by learner:

- The learners' ability to cut underlining accurately with the same pattern piece as of the outer fabric
- Stay-stitching both the underlining and the outer fabric.
- Capability of holding both underlining and outer fabric as one piece through construction.

SELF-EVALUATION BY LEARNER

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtained
Pad stitching	- Cut the underlining using the same pattern piece as of the outer fabric.	5	
	- Baste the underlining to the fashion fabric.	5	
	- Check whether the underlining will not affect the colour of the outer fabric	5	
	- Test the compatibility of the two fabrics.	5	
	- Used soft underlining for a soft outer fabric.	5	
	- Check whether both the underlining and outer fabric require pressing.	5	
	Total score	30	

3 ATTACHING LINING TO GARMENT-

Introduction

Lining the garment is the final steps in the construction process and one of the most exciting steps in tailoring. This is to say that another type of fabric comes into use while constructing a garment. Such fabric could be elegant in colour, design or weave. Lining is generally used to give a finished look to the inside of the garment, prevents seams from ravelling, reduce wrinkling, help conceal some figures faults and makes a garments easier to slip on and off. Provide a little luxury or add a little pizzazz to your garment, add durability for items such as

children's clothing, stretched seams, prevents sweat stains from affecting the outer garment which will allow longer use.

Level of students to be taught: Final year students of universities.

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

- To identify lining materials that are [perfectly good for each fashion fabric
- Cut lining perfectly with the same pattern piece as of the fashion fabric
- Sew lining neatly in fashion fabric
- Give 4 reasons why lining is important in garment construction
- List 2 types of lining that are commonly used by the dressmakers

Learning resources/materials:

Fine pins,
Matching thread,
Basting thread,
Hand sewing needles (no8&9),
Seam gauge
Scissors
Thimble

Identifying learners/students prior ideas of the stated task:

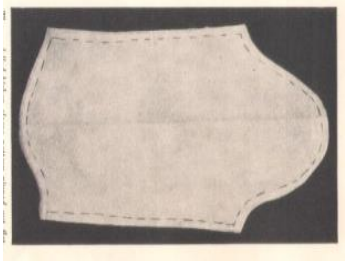
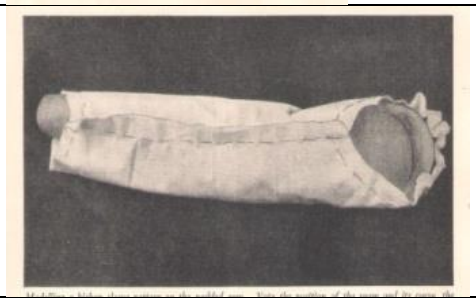
The followings are the learners' prior idea on the stated task-

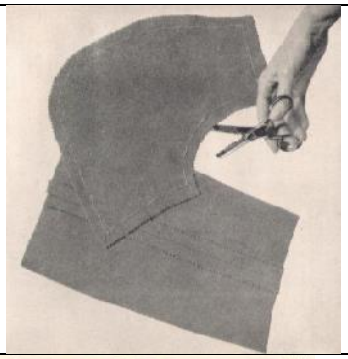
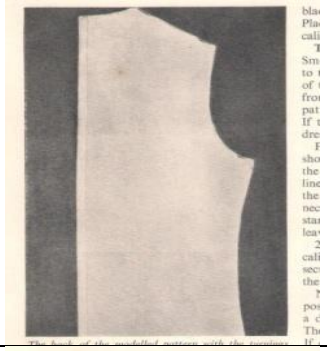
- The learner is aware of the importance of lining a garment.
- The learner must have been wearing garments sewn with lining before now

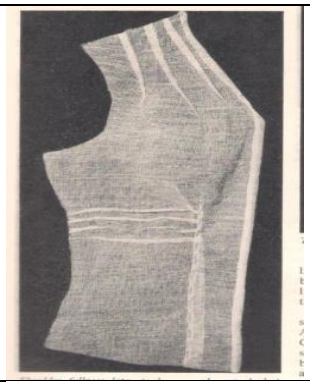
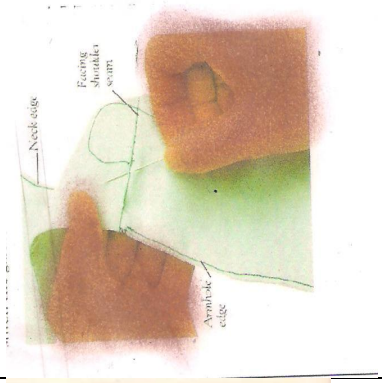
ATTACHING UNDERLINING

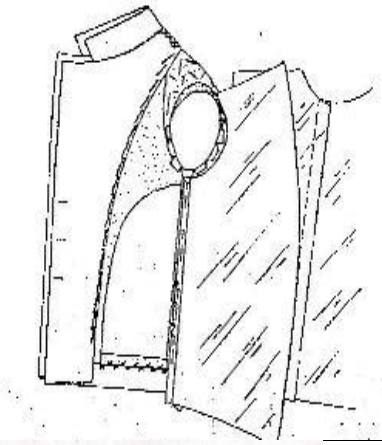
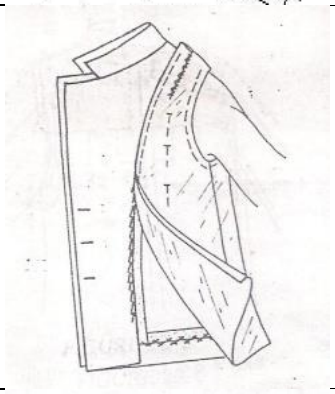
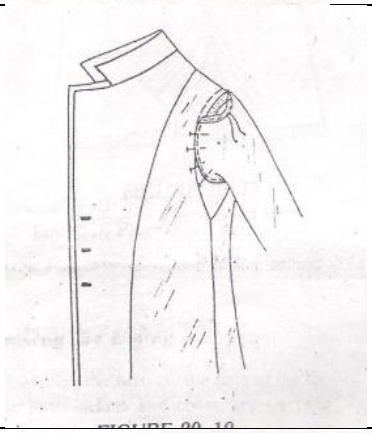
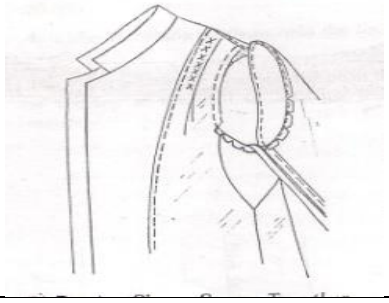
TASKS/ PERFORMANCE	ILLUSTRATION					
1 Drape your garment fabric over the shaping fabric						
2 Check whether the colour of the lining fabric can change the colour of your outer fabric.						
3 Check whether the fibre content of the two fabrics are compatible						

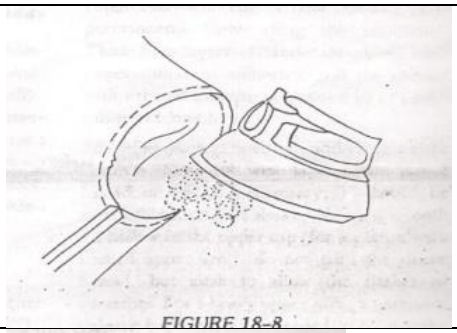
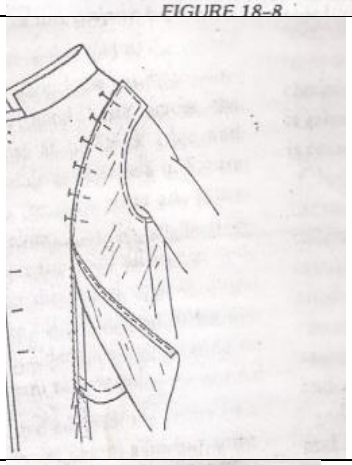
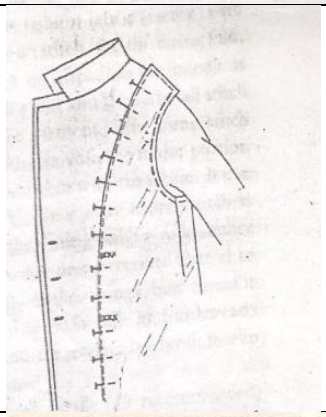
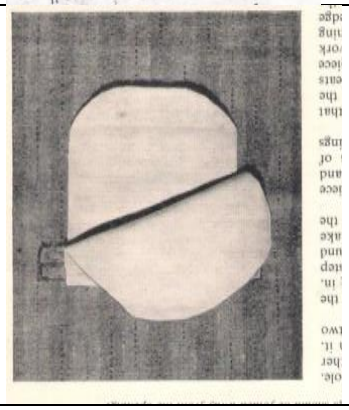
4 Check whether both of them can be laundered together without affecting their quality						
5 Check whether both fabrics can be pressed in the same way without affecting their fitting.						
6 Cut lining with the same pattern piece as of the fashion fabrics						
7 Construct the jacket lining separately by Joining at one or more major seams. Make a pleat at the centre back for ease and Press the seams open,						

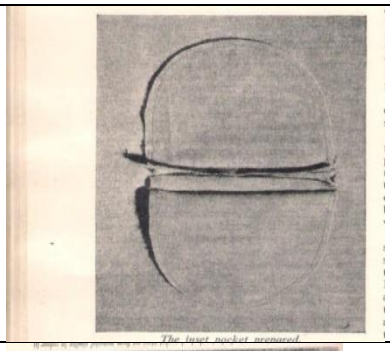
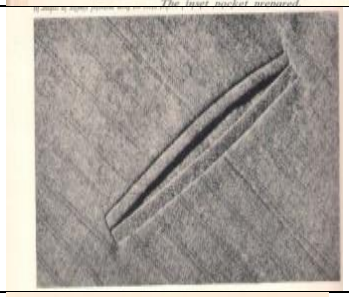
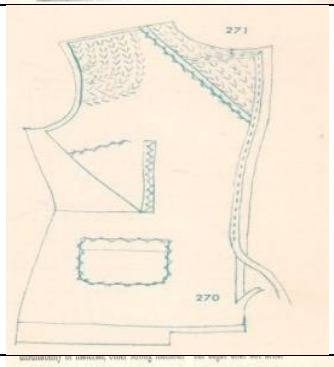
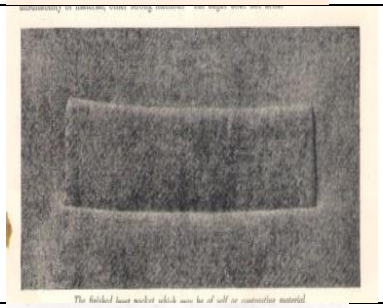
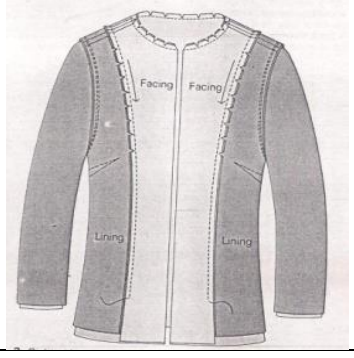
8 Construct the skirt lining separately by Joining at one or more major seams. Press the seams open.						
9 Join the fashion fabrics and then join it to the lining- back view						
10 Join the fashion fabrics and then join it to the lining- front view.						
11 Lining for the sleeve						
12 Baste the sleeve lining and insert the sleeve model into the basted sleeve						

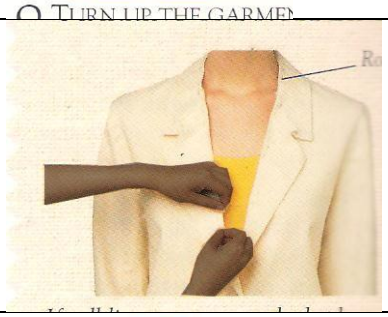
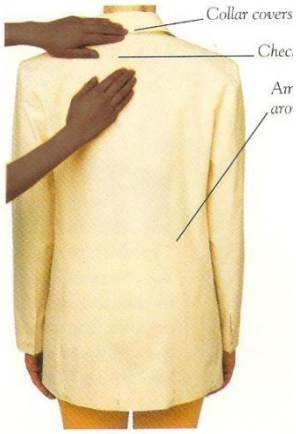
13 Cut all parts of the fashion fabrics with pinking scissors to avoid fraying. Baste the edges.						
14 The back of the modelled pattern with the turnings cut away to the fitting line.						
15 Sew the lining and the fashion fabrics together living a small portion at the armhole. Notch the seam to make it flat when turned. Press						
16 Sew back dart with a seam shaping the back into the waist						

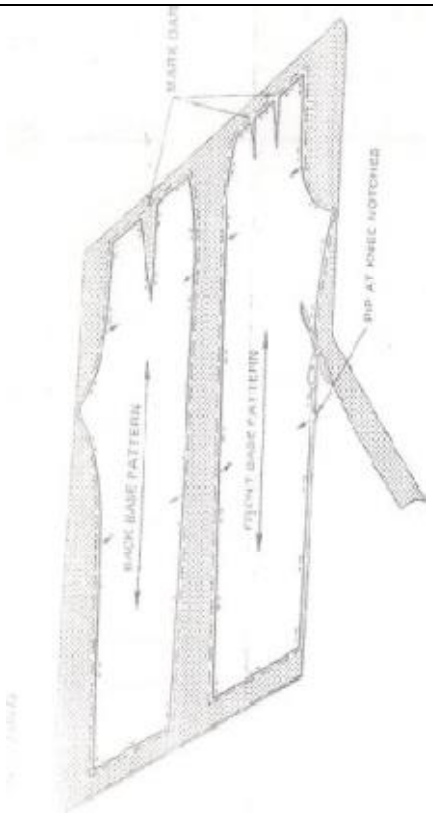
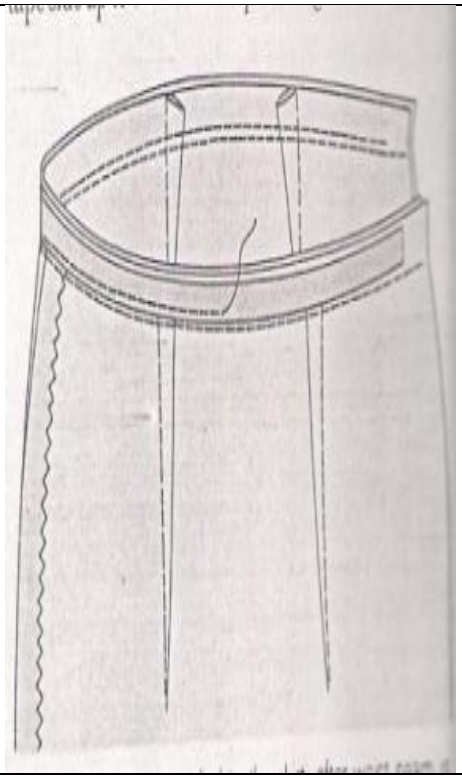
17 Sew shoulder and waist darts of the front over garment front to shape the front panel into the waist						
18 Join the two shoulders together						
19 Baste the outer garment shoulder seams together for permanent fitting, easing the back onto the front.						
20 Assemble all parts of the garment together						

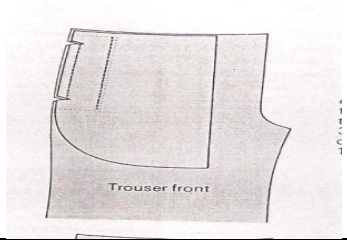
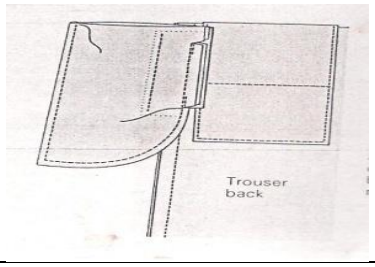
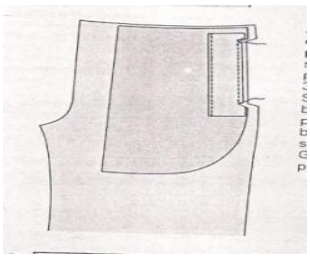
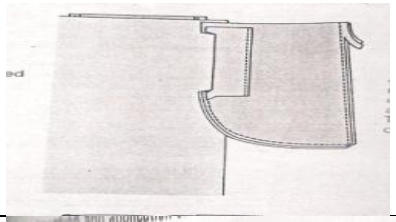
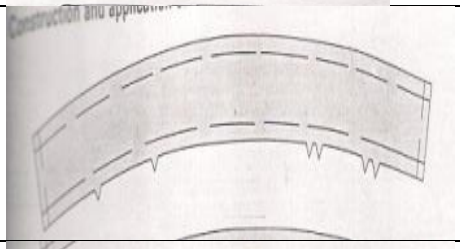
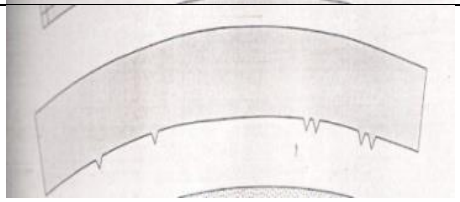
21 Match underarm seams together						
22 Fold back the front section and pin the open seams together						
23 Check the armhole of the lining against that of the garment frequently in fitting.						
24 Place the armhole seam of the lining next to the garment seam						

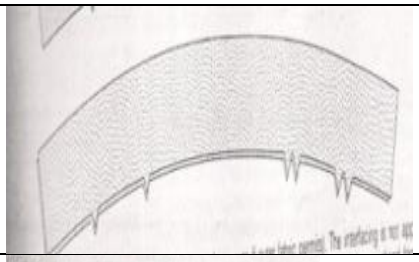
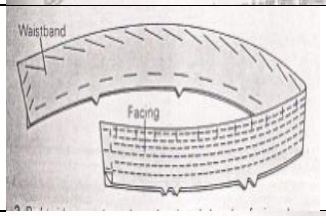
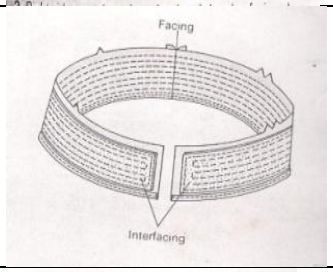
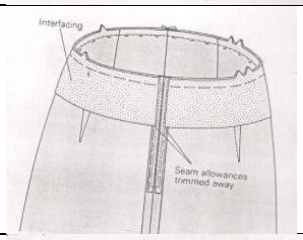
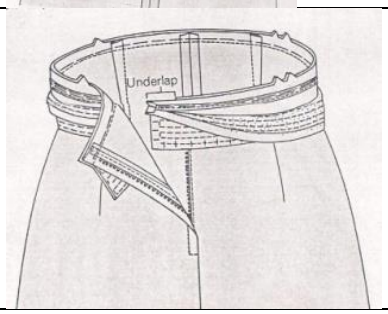
25 From the under arm extend it to the shoulder. Press	 FIGURE 18-8					
26 Clip the lining seam to fit the under arm of the garment. Stretch the seam slightly and pin in place along the two front edges of the seam allowance.						
27 Lining must not be taut at any point. Trim off any surplus fabric remaining maintaining the normal seam allowance. Insert a pocket in the lining before the lining is basted to the facing.						
28 Cut lining out from the inner pocket pattern and fix.						

29 Place the underside of the pocket at the predetermined location of the garment Press and join at the wrong side of fashion fabrics						
30 turn to the right side of the garment, stretch both ends of the pocket and press- style 1						
31 Style 2 pocket attachment- Place the underside of the pocket at the predetermined location of the garment						
32 turn to the right side of the garment, stretch both ends of the pocket and press- style 2						
33 Join the assembled lining to the facing. Baste and sew the seam permanently						

34 Mark the positions for buttons by fixing the garment on a model and check the appropriate positions						
35 Check the roll line of the lapel, press to position with a hot pressing iron						
36 Check back of jacket shoulder and hem line whether they are perpendicular to the floor. Roll the back collar and press						
37 Press to shape.						

38 Pin the trouser pattern on the lining fabrics and cut						
39 Construct the lining for the trouser separately. Press open the seams.						

40 Mark out the back pocket of the trouser						
41 Attach the back pocket . baste first and then sew permanently with machine sewing						
42 Baste the side pockets temporarily, press and machine sew						
43 Trim the pocket seam allowance						
44 Use the cut out pattern of a contour waistband for the trouser and skirt, add the seam allowance.						
45 Use the same pattern for the lining and the interfacing.						

46 use the same pattern for the fashion fabrics						
47 baste the lining contour waistband with infusible interfacing and pad-stitch the waistband						
48 Notch around the band and leave 1/2ò to the edge of the band.						
49 attach the waistband to the skirt						
50 attach the waistband to the trouser						

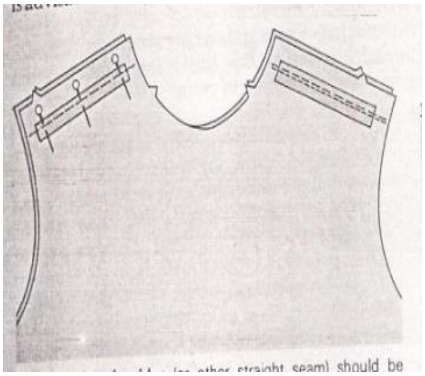
Application of knowledge by learner:

- The learner cuts the lining perfectly.
- The learner can now sew lining to outer fabric perfectly
- Ability to sew lining to fashion fabric using both hand and machine method.

SELF- EVALUATION BY LEARNER

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtained
Application of lining	- Cut lining using the same pattern piece as of the outer fabric. - Allow a pleat at the back of a jacket for ease of movement. - Use hand stitching method to attach the lining. - Hem lining separately - Hem the garment edge ½'' above the edge of the garment. - Check the compatibility of the lining to the outer garment - Total score	5 5 5 5 5 5 30	

4 ATTACHMENT OF TAPE TO GARMENT-



Attachment of tape at the shoulder.

Introduction

Taping is one of the tailoring techniques that is very essential in garment construction. Some edges of a jacket or coat are taped to prevent stretching. Twill tape or seam tape is hand stitched along the seam line or fold line to stabilize bias or curved areas. Tape is usually used along the roll line where the lapels fold back and around the neck seam. The front edge, shoulder seams, armhole seams and pocket or sleeve openings can also be taped. Sewing machine could also be used in attaching tape to fashion fabric but hand sewing is the neatest.

Level of students to be taught: Third year students of universities.

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

- Identify 5 appropriate places to attach tape in fashion fabric.
- List 3 reasons for attaching tape to fashion fabric.
- Take accurate measurement of the area to attach the tape
- Cut tape accurately.
- Perfectly sew the tape to outer fabric.

Learning resources/materials:

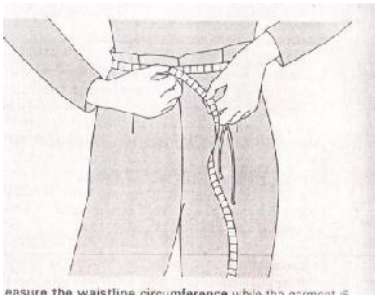
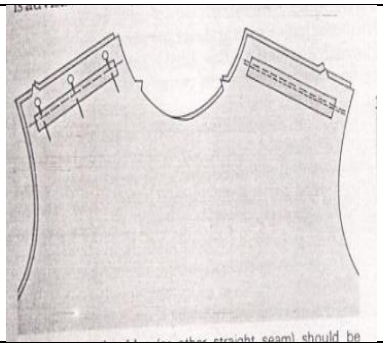
` A fine needle
Matching thread
Sewing machine
Bais tape
Measuring tape
Twill tape

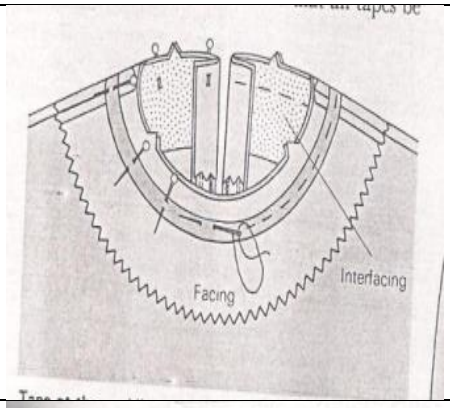
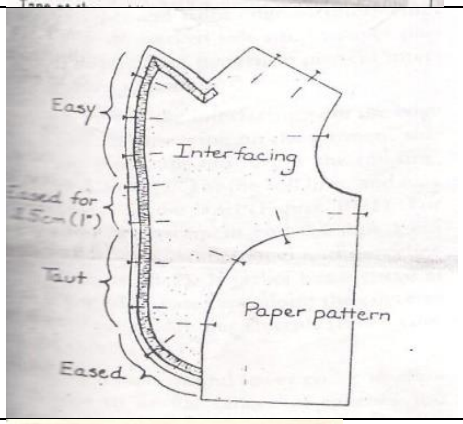
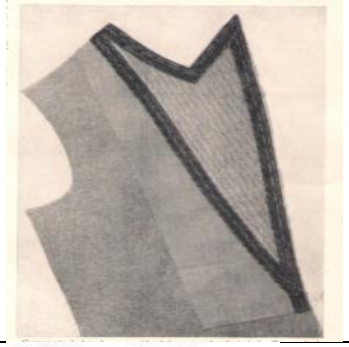
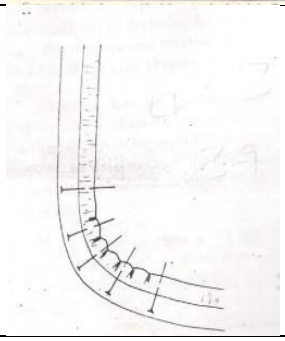
Identifying learners/students prior ideas of the stated task:

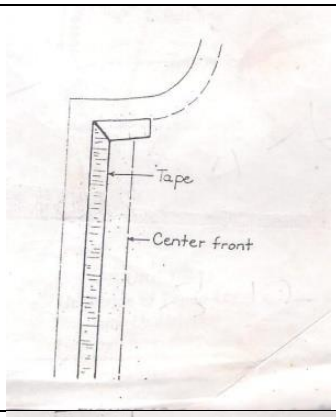
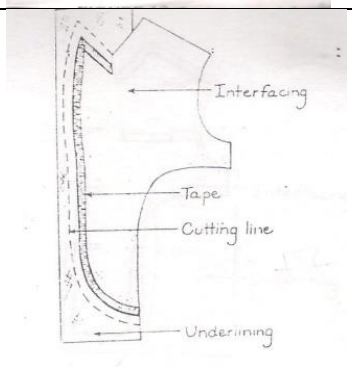
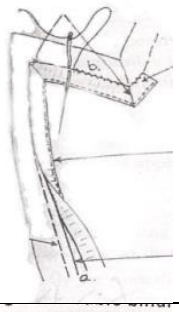
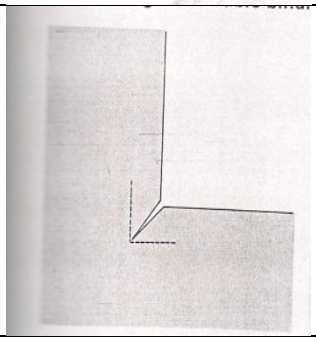
The followings are the learners' prior idea on the stated task-

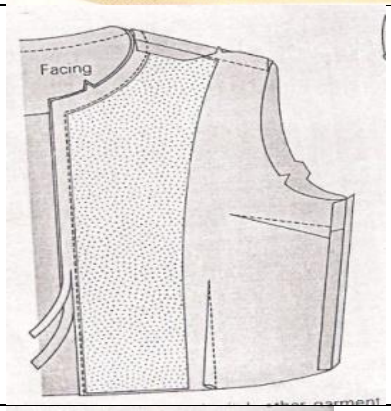
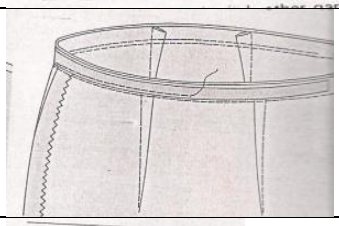
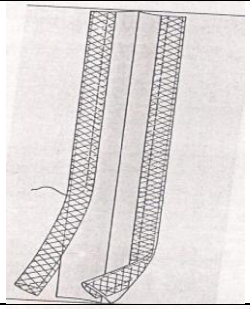
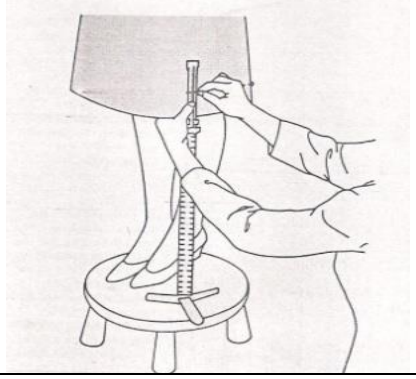
- The learner should have been taught the importance of attaching tape to some areas of an outer fabric.
- The learner must have been wearing garments sewn with tapes at the appropriate areas.

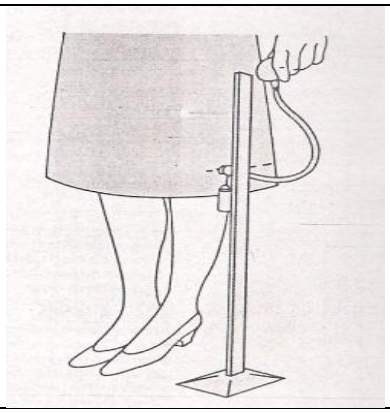
APPLICATION OF TAPING TECHNIQUE

TASKS/ PERFORMANCE	Illustration					
1 Measure the required area of the garment to be taped. Cut tape following the measurement taken.						
2 Attach tape to the shoulder of the jacket back bodice						

3 Baste the tape round the facing of the neckline of the back over garment/jacket.						
4 Hold tape taut below the roll line						
5 Ease tape for 2.5cm at the roll line. Ease slightly around the lapel						
6 Notch tape around lower curve to make it lie flat						

7 Baste the tape at the centre front and mitre at the gorgeline. For additional re-enforcement end tape 1cm, above the point where the lapel and the gorge line meet						
8 place and baste the tape on the interfaced lining for the front of the jacket						
9 Do not clip through outer edge of tape at any time. Stitch inside edge of tape						
10 Miter tape at point of lapel						

11 Notch the tape at curves and press.						
12 Trim away excess tape						
13 Baste the tape around the trouser waistband						
14 Attach tape to the edge of the skirt. Baste and press open						
15 Mark out the hem line of the skirt. Attach tape to the edge of the hem line and fold						

16 Try the skirt on yourself and mark out the hem line, put it down and attach the tape round the hem line, press and fold.						

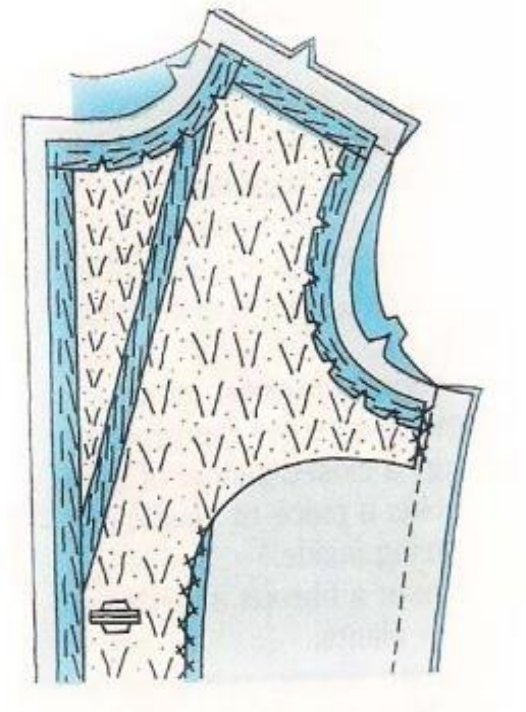
Application of knowledge by learner:

- learner's ability to measure, cut and sew tape on outer fabric

SELF- EVALUATION BY LEARNER

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtained
Attachment of tape t garment	- Cut the tape accurately - Place the tape in taut position before sewing. - Notch the tape in a curve so as to lay tape flat. - Miter tape at the point of lapel. - Sew the tape at the accurate position Total score	5 5 5 5 5 25	

5 PAD STITCHING GARMENTS-



Introduction

Pad stitching is a series of small diagonal stitches made by hand through the interfacing and outer fabric. It is done on the under collar and lapels to shape and mould the fabric pad stitching is used mainly in tailoring to fasten canvas interfacing firmly to the fabric on lapels and collars. When the stitches are made short and close together, they shape the fabric three dimensionally. When they are made long and spaced apart, the stitches simply hold the woven interfacing permanently to the fabric. Pad stitching could also be done using sewing machine with straight or zigzag stitches. This is faster to do than the hand pad stitching but not always encouraged as the stitches may show at the right side of the outer fabric.

Level of students to be taught: Final students of universities.

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

- Mention 3 equipments 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

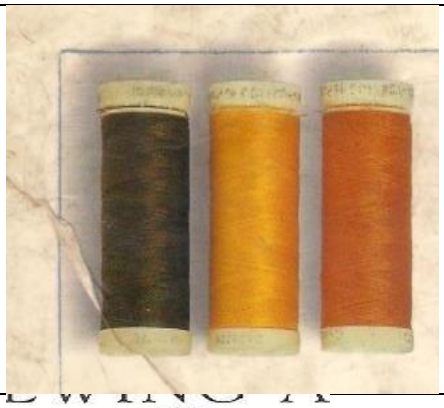
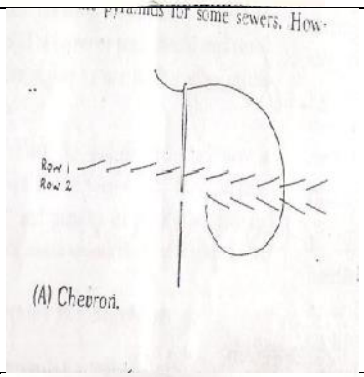
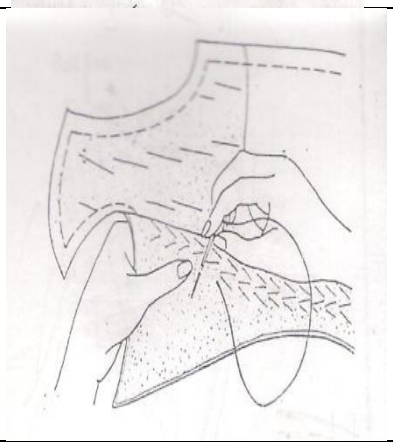
Magazine.

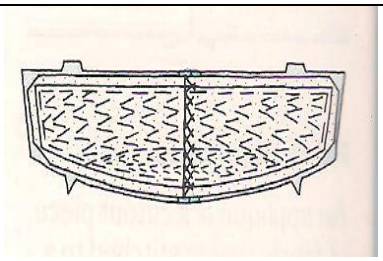
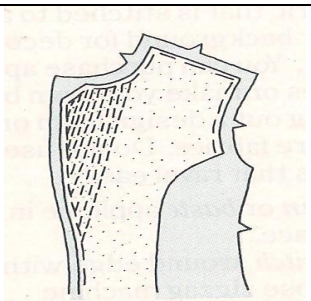
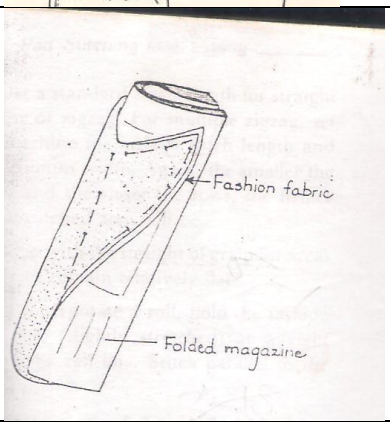
Identifying learners/students prior ideas of the stated task:

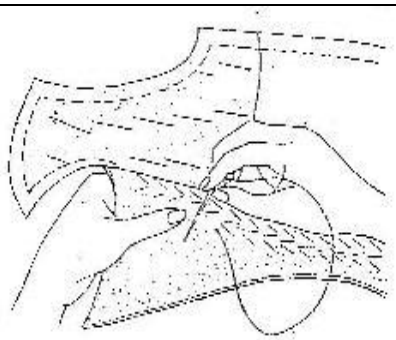
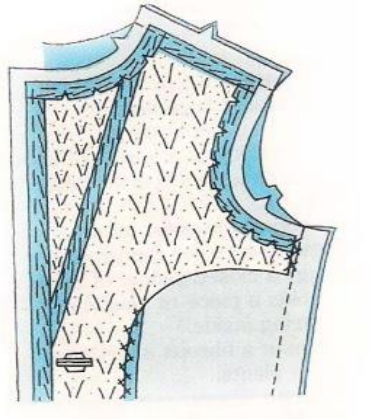
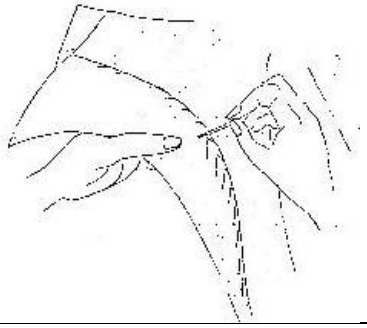
The followings are the learners' prior idea on the stated task-

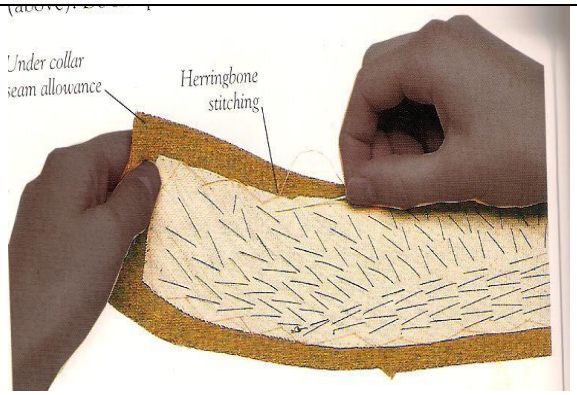
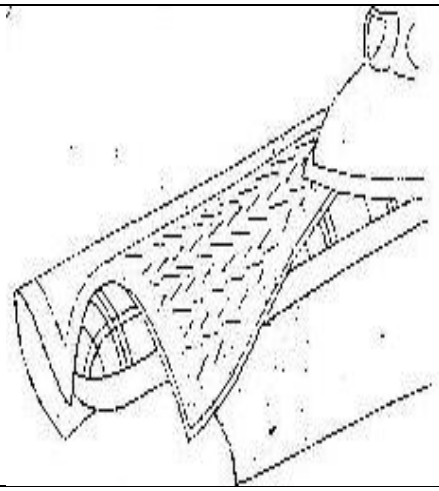
- The learner has been taught how to make stitches.
- The learner have the skill of making both long and short basting

HOW TO PAD-STITCH

TASKS/ PERFORMANCE	Illustration					
1 Cut a matching single thread,						
2 wear a thimble to protect your finger	 Metal thimble					
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.	 (A) Chevron.					
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.						
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.						
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.

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	

E The instructional materials that could be utilised for teaching tailoring techniques in university programme

Instruction: from the list of the consumable materials below, identify those in your opinion, are required for achieving the following selected tailoring techniques (interfacing , underlining, lining, taping and pad-stitching) using the following keyï strongly required(SR), required (R), undecided (UN), unrequired (UR) and strongly unrequired (SU).

INSTRUCTIONAL MATERIALS

S/N	Instructional materials for tailoring techniques	SR	R	UN	UR	SU
1	matching thread					
2	Bias tape					
3	Woven and non woven interfacing					
4	Pressing clothes					
5	Tracing carbon					
6	Pattern piece					
7	Basting thread					
8	Tailorôs chalk					
9	Muslin fabrics					
10	Fashion fabrics					
11	Brown paper					
12	Pattern piece					

F The instructional tools and equipment that could be utilised for teaching tailoring techniques in university programme.

Instruction: from the list of the tools and equipment below, identify those in your opinion, are required for achieving the following selected tailoring techniques (interfacing , underlining, lining, taping and pad-stitching) using the following keyï strongly required(SR), required (R), undecided (UN), unrequired (UR) and strongly unrequired (SU).

S/N	INSTRUCTIONAL TOOLS AND EQUIPMENT	SR	R	UN	UR	SU
1	A fine hand sewing needle					
2	Measuring tape					
3	Pressing iron,					
4	Thimble					
5	Tailors pin,					
6	Scissors,					
7	clip scissors,					
8	Magazine.					
9	Pressing Iron					
10	Ironing board					
11	Tracing wheel					
12	Water bottle					
13	Fine tailorsô pins- plastic edge					
14	Basting thread,					
15	Seam gauge					
16	Tailorsô chalk					
17	Textbooks					
18	Dictionaries					
19	Teachersô guide					
20	Learnersô course book					
21	Television					
22	Video/video tapes					
23	Computer					
24	Radio					
25	Tape recordings/recorder					
26	Transparencies					
27	Overhead projectors					
28	Slides					
29	Films					
30	Chalk board					
31	Display board					
32	Charts					
33	Models					
34	Real objects					
35	Plastic automatic pressing sponge					

G SELF-EVALUATION ITEMS

Kindly indicate the degree of your agreement or disagreement with the evaluation criteria appropriate for an instructional manual for achieving skills in some selected tailoring techniques such as interfacing, underlining, lining, tapping and pad-stitching operations in garment making. Express your opinion on the task-based inventory required for evaluation of application of tailoring techniques in garment construction using the following key-

MS - Most suitable,

S - suitable,

AS - Averagely suitable,

NS - Not suitable.

Tick ã in the column you desire most

s/n	**The following should be included in the self-evaluation criteria appropriate of a self-instructional manual for Home Economics students**	**MS**	**S**	**AS**	**NS**
1	Cut the woven interfacing on a diagonal grain.				
2	Sprinkled water on non gum area of interfacing before ironing interfacing on fashion fabric.				
3	Use the press cloth in fixing interfacing				
4	Pre-shrink the interfacing before cutting				
5	Fixed the interfacing smoothly on the fashion fabric.				
6	Allow the fused fabric to cool down before further touch to avoid bond interference				
7	Cut lining using the same pattern piece as of the outer fabric.				
8	Allow a pleat at the back of a jacket for ease of movement.				

9	Use hand stitching method to attach the lining.				
10	Hem lining separately				
11	Hem the garment edge ½ô above the edge of the garment.				
12	Check the compatibility of the lining to the outer garment				
13	Cut the underlining using the same pattern piece as of the outer fabric.				
14	Baste the underlining to the fashion fabric.				
15	Check whether the underlining will not affect the colour of the outer fabric				
16	Test the compatibility of the two fabrics.				
17	Used soft underlining for a soft outer fabric.				
18	Check whether both the underlining and outer fabric require pressing.				
19	Cut the tape accurately				
20	Place the tape in taut position before sewing.				
21	Notch the tape in a curve so as to lay tape flat.				
22	Mitre tape at the point of lapel.				
23	Sew the tape at the accurate position.				
24	Cut the lapels and collars on a diagonal grain.				
25	Cut the lapels and interface using the same pattern piece.				
26	Sew pad-stitching with the appropriate stitch length/size.				
27	Hand pad-stitching hidden at the right side of the outer fabric.				
28	Use chevron pad-stitch to sew woven canvas interfacing on outer fabric.				
29	Press the pad-stitched lapel after sewing.				
30	Check the roll line of the lapel				
31	Use of glue to attach lining to the fashion fabrics				
32	Correct use of tools and equipment				
33	Dependability in handling tailoring jobs				

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

APPENDIX D

SELF-INSTRUCTIONAL MANUAL FOR TEACHING TAILORING TECHNIQUES TO HOME ECONOMICS STUDENTS IN UNIVERSITIES

Tailoring techniques in this study include-

Interfacing

Underlining

Lining

Taping

Pad-stitching

The five tailoring techniques were applied in construction of trousers, skirts and jackets for males and females.

SELF-INSTRUCTIONAL MANUAL IN TAILORING TECHNIQUES

A. Objectives of self-instructional manual in Tailoring Techniques (interfacing, lining, underlining, Taping and Pad-stitching)

1 Develop saleable skills required for successful careers in tailoring

2 Develop adequate skill in application of tailoring techniques

3 Develop in students work ethics necessary for successful career in tailoring

4 Receive occupational experience in training related to the one available in the work places

5 Develop in students positive attitudes and proper working habits for sustainable employment

6 Supplement job experience of students from the industry

7 Develop adequate skill necessary for smooth transition from school to work place

8 Improve studentsô interest in tailoring

9 Guide the students in acquiring proper skills in application of tailoring techniques in garments

10 Provide students with adequate knowledge in application of interfacing, underlining, lining, tapping and pad-stitching techniques in a tailored garment.

11 To improve studentsô employability skills

12 Enhance individualized development of skill and knowledge.

B Tasks for achieving the objectives of tailoring techniques in university programme

B1. Tasks for achieving skills in interfacing technique

S/N	Tasks for achieving skills in interfacing technique
1	Studying definitions of concepts like interfacing in tailoring,
2	listing the skills involve in attachment of interfacing
3	Listing characteristics of well interfaced garments
4	Discussing the importance of the application of interfacing to garment construction.
5	Summarizing the effects of poor application of interfacing in garment construction.
6	Suggesting factors to be considered for proper application of interfacing in garment construction.
7	Identifying features relating to the positions where these interfacing techniques could be applied in garment construction.
8	Evaluating various methods of application of interfacing in garment construction.
9	Discussing the factors that influence choice of each of the interfacing type.
10	Brainstorming on the reasons for the application of interfacing in garment construction.
11	Visiting tailoring shops to find out the extent they use interfacing in their garment construction.
12	Assessing the skills used by the tailors in the application interfacing in construction of garments.
13	Interviewing the tailors to ascertain whether they pre-shrink their interfacing before applying it in their fabrics.
14	Discussing the importance of use a regulatory pressing iron in application of interfacing
15	Ability to identify fabrics with fast colours before applying interfacing
16	Investigating the various ways the tailors used to attach interfacing in garment construction.
17	Discussing the transferring of pattern markings on the interface side of the garment under construction.
18	Demonstrating cutting fusible interfacing from garment pattern.
19	Demonstrating pressing of interfacing for 10 second at a time ï covering a section beat by beat,
20	Allowing the interfacing to cool before further handling.
21	Emphasizing the use of pressing iron in every beat of attachment of fusible interfacing in garment construction.

B2. Tasks in achieving skills in underlining technique

S/N	**Tasks for achieving skills in underlining techniques**
1	Studying definitions of concepts like underlining in tailoring
2	Listing characteristics of well underlined garments
3	Discussing the importance of the application of underlining in garment construction.
4	Summarizing the effects of poor application of underlining in garment construction.
5	Suggesting factors to be considered for proper application of underlining techniques.
6	Identifying features relating to the positions where the underlining could be applied in garment construction.
7	Evaluating various methods of application of underlining in garment construction.
8	Discussing the factors that influence choice of underlining fabrics.
9	Brainstorming on the reasons for the application of underlining
10	Analyzing factors to be considered when selecting underlining and fashion fabrics.
11	Visiting tailoring shops to find out the extent they use these tailoring techniques in their garment construction.
12	Assessing the skills used by the tailors in the application of underlining in construction of garments.
13	Discussing the importance of use a regulatory pressing iron in attachment of underlining in garment construction.
14	Discussing the importance of cutting fashion fabrics and underlining using the same pattern piece.
15	Comparing underlined garment with the one that was not underlined.
16	Computing profit margin using underlining in garment construction.
17	Giving reasons for pressing out the bumps and wrinkles in both fashion fabrics and underlining before placing pattern piece.
18	Ability to identify fabrics with fast colours before attachment of underlining
19	Emphasizing the use of pressing iron in every beat of attachment of underlining in garment construction.

B3 Tasks for achieving skills in lining technique

S/N	**Tasks for achieving skills in lining techniques**
1	Studying definitions of concepts like lining in tailoring
2	listing the skills involve in attachment of lining
3	Listing characteristics of well lined garments
4	Discussing the importance of the application of lining to garment construction.
5	Summarizing the effects of poor application of lining in garment construction.
6	Suggesting factors to be considered for proper application of lining techniques.
7	Identifying features relating to the positions where lining could be applied in garment construction.
8	Evaluating various methods of application of lining in garment construction.
9	Discussing the factors that influence choice of lining fabrics
10	Brainstorming on the reasons for the application of lining
11	Visiting tailoring shops to find out the extent they use lining in their garment construction.
12	Assessing the skills used by the tailors in the application of lining in construction of garments.
13	Discussing the importance of use a regulatory pressing iron in attachment of lining in garment construction.
14	Di1scussing the reasons behind matching under arm seams together in attachment of lining.
15	Compiling the list of reasons why during fitting, the armhole of the lining is frequently checked against that of the fashion fabrics.
16	Discussing the reason why the lining should be constructed separately from the fashion fabrics.
17	Discussing why seams are always pressed open.
18	Identifying the reasons for pre- washing of the cotton muslin before usage in garment construction.
19	Giving reasons for pressing out the bumps and wrinkles in both fashion fabrics and lining before placing pattern piece.
20	Ability to identify fabrics with fast colours before attaching the lining.
21	Demonstrating the draping of lining fabrics with the fashion fabrics.
22	Checking the compatibility of the fibre content of lining and fashion fabrics.
23	Checking whether both fashion and lining fabrics will be handled in laundering together without affecting their quality.
24	Emphasizing the use of pressing iron in every beat of lining attachment in garment construction.

B4. Tasks for achieving skills in taping technique

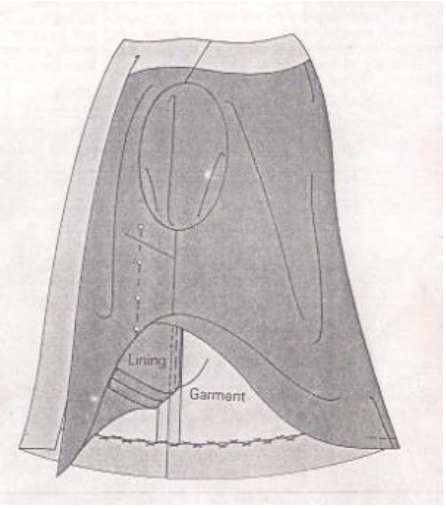
S/N	**Tasks for achieving skills in taping techniques**
1	Studying definitions of concepts like taping in tailoring
2	Listing characteristics of well taped garments
3	Discussing the importance of the application of taping to garment construction.
4	Summarizing the effects of poor application of tape in garment construction.
5	Suggesting factors to be considered for proper application of tape
6	Identifying features relating to the positions where tape could be applied in garment construction.
7	Evaluating various methods of application of tape in garment construction.
8	Discussing the factors that influence choice of tape in garment construction
9	Brainstorming on the reasons for the application of taping techniques
10	Visiting tailoring shops to find out the extent they use tape in their garment construction.
11	Assessing the skills used by the tailors in the application of tapes in construction of garments.
12	Discussing the importance of use a regulatory pressing iron in attachment of iron-on tapes in garment construction.
13	Utilizing the steps involved in the attachment of tape in garment construction.
14	Finding out different types of tapes available in the market for tailorsô use.
15	Ability to identify fabrics with fast colours before attaching the tape
16	Discussing the reasons behind the measuring of the area for the attachment of tape before cutting.
17	Discussing the reasons behind holding tapes in a taut position especially on roll line
18	Giving reasons for notching tapes around lower curves of garments.
19	Listing some distinctive characteristics of tape application in garment construction.
20	Emphasizing the use of pressing iron in every beat of garment construction.

B5. Tasks for achieving skills in pad-stitching technique

S/N	**Tasks for achieving skills in pad-stitching techniques**
1	Studying definitions of concepts like pad-stitching in tailoring
2	Listing characteristics of well pad-stitching garments
3	Discussing the importance of the application of pad-stitching techniques to garment construction.
4	Summarizing the effects of poor application of pad-stitching in garment construction.
5	Suggesting factors to be considered for proper application of pad-stitching techniques.
6	Identifying features relating to the positions where pad-stitching could be applied in garment construction.
7	Evaluating various methods of application of pad-stitching in garment construction.
8	Discussing the factors that influence choice of area of pad-stitching in a garment.
9	Brainstorming on the reasons for the application of pad-stitching in construction of garments
10	Visiting tailoring shops to find out the extent they use pad-stitching techniques in their garment construction.
11	Assessing the skills used by the tailors in the application of pad-stitching in construction of garments.
12	Discussing the importance of use a regulatory pressing iron in pad-stitching technique in garment construction.
13	Ability to identify fabrics with fast colours before pad-stitching
14	Discussing the use of matching thread in pad- stitching.
15	Identifying the types of stitches that are best in pad-stitching.
16	Outlining the steps involved in pad-stitching.
17	Giving reasons why tiny stitches are most preferred in pad-stitching.
18	Discussing the necessities of basting before pad-stitching.
19	Demonstrating the use of fastening stitch to anchor the end of pad-stitching.
20	Emphasizing the use of pressing iron in every beat of pad-stitching operations.

C. TAILORING TECHNIQUE PROCESSES

C1. Interfacing technique



Introduction

Interfacing is essentially an extra layer of fabric that provides shape and support in detail areas. It is commonly used in collars, cuffs, lapels, necklines, pockets, waistbands, buttonholes, facings and opening edges. Interfacing is used in all these mentioned areas to keep these areas of garment crisp through repeated washings and wearing. In garment (jacket) construction, interfacings are attached to the shaded areas as in the illustration above to give the parts body, shape and support. In skirts, interfacings are added at the waist and at the hem depending on the pattern

Level of student to be taught: Final year students of universities.

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

- Name different types of interfacing

- List at list three resource materials used in interfacing attachment
- Give three important reasons why interfacing is necessary in garment production
- Cut interfacing accurately using the pattern piece
- Perform the fixing of interfacing on fabrics

Learning resources/materials needed:

Woven interface

Non-woven interface

Pressing Iron

Ironing board

Pressing clothes

Tracing wheel

Tracing carbon

Water bottle

Pattern piece

Tracing carbon

Scissors

Thimble

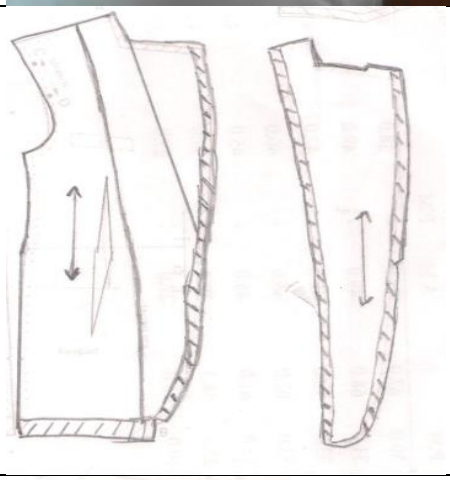
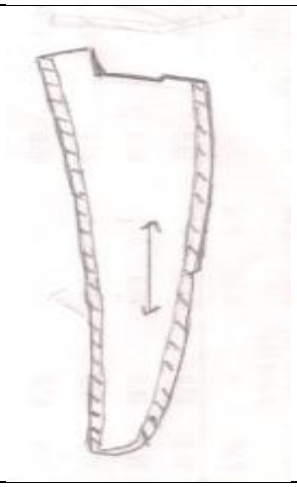
Identifying learners/students prior ideas of the stated task:

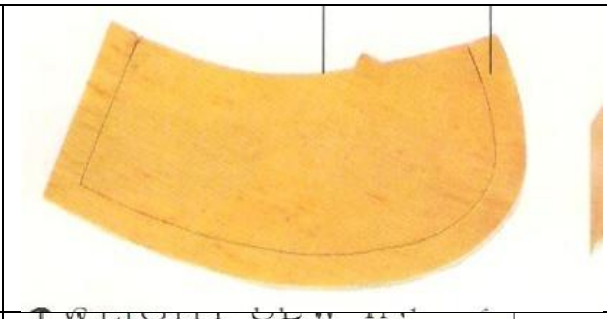
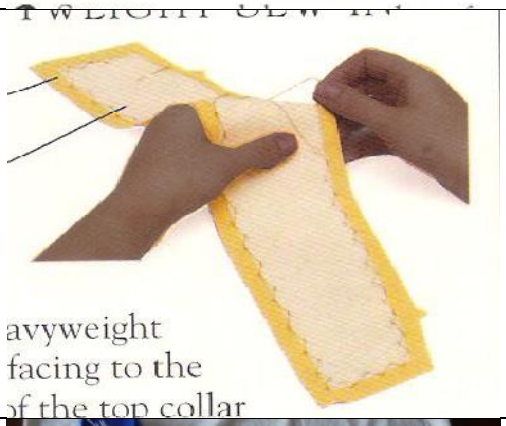
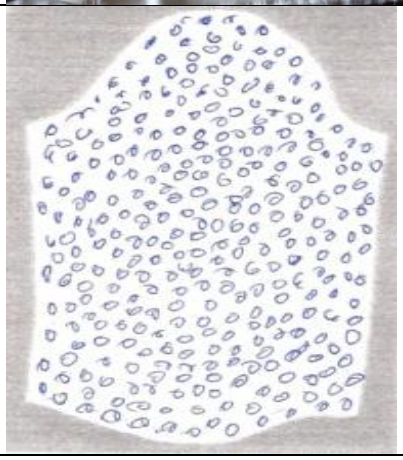
The followings are the learners' prior idea on the stated task-

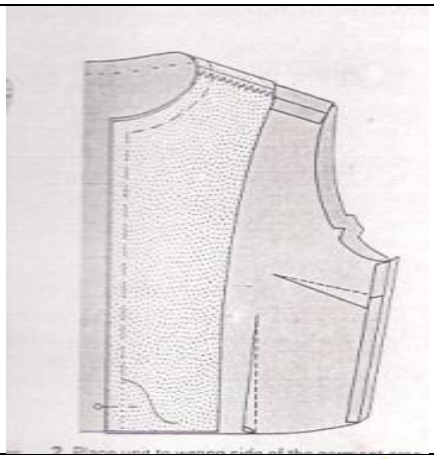
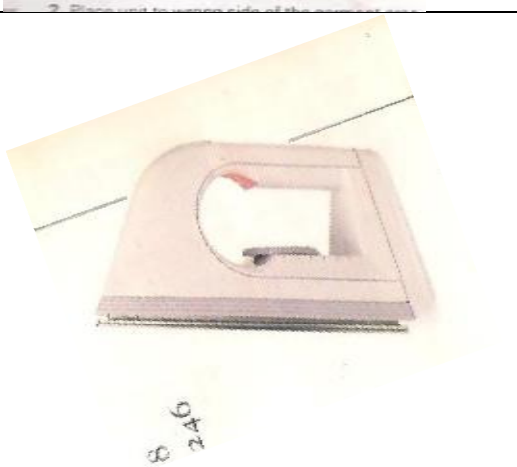
- The learner is aware of the importance of the use of interface in tailoring garments.

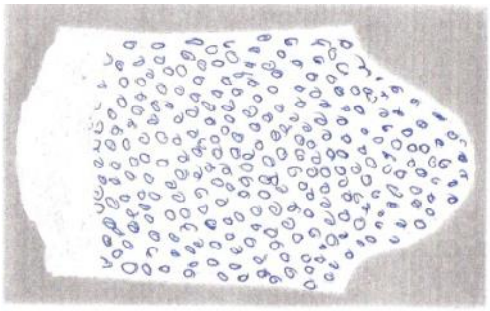
HOW TO APPLY INTERFACING

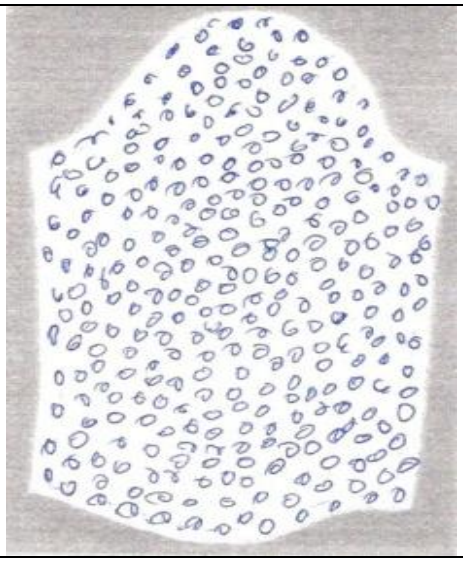
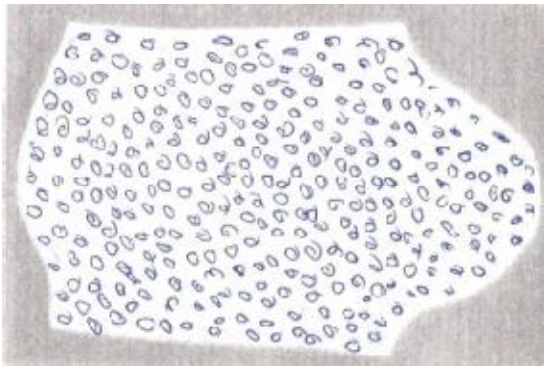
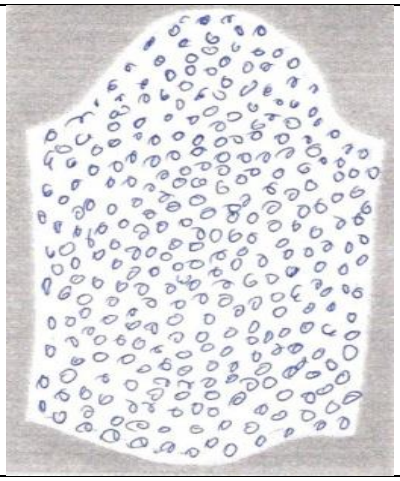
TASKS / PERFORMANCE	Illustration
Pre-shrink the interfacing	
1 If you are using washable woven, wefts and tricot knits for interfacing, fold the interfacing loosely and immerse in a tub of hot water.	
2 Allow it to sit until water cools to room temperature.	
3 Roll it in a towel to remove excess moisture and air dry.	

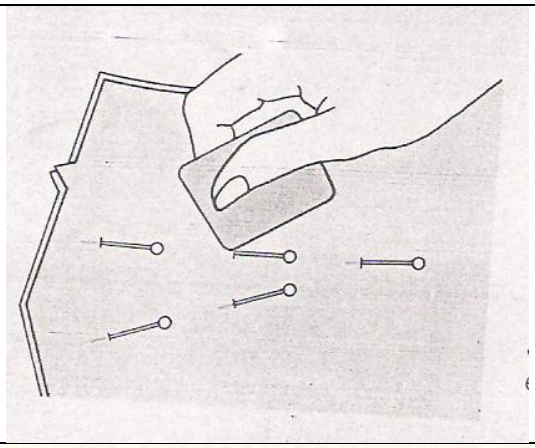
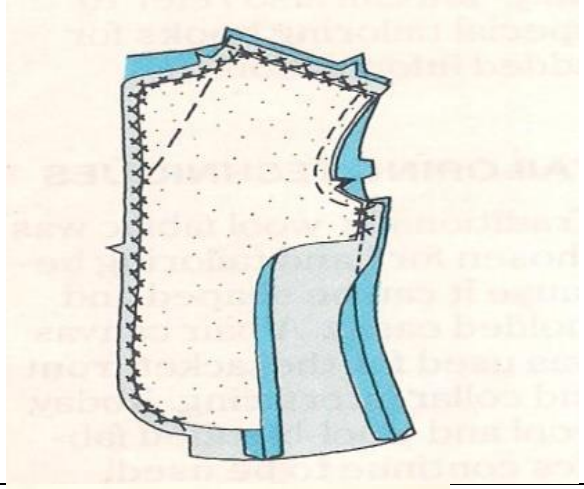
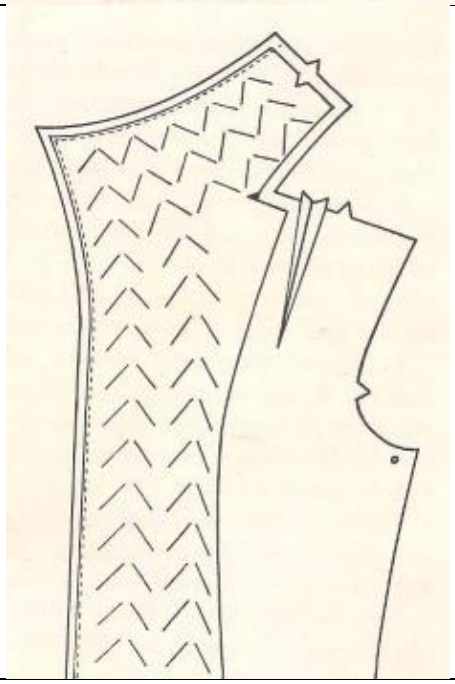
4 If it is fusible interfacing which has resin in one side, steam shrink by sprinkling water at the non resin side	
5 hold the iron about 2.5cm to 5cm above the pieces and steam for 5 ï 7 seconds	
6 Cut out the facing pattern from the front over garment pattern.	
7 Cut fusible interfacing from the facing pattern using the same pattern piece you used in cutting the fashion fabric and that of lining fabric.	

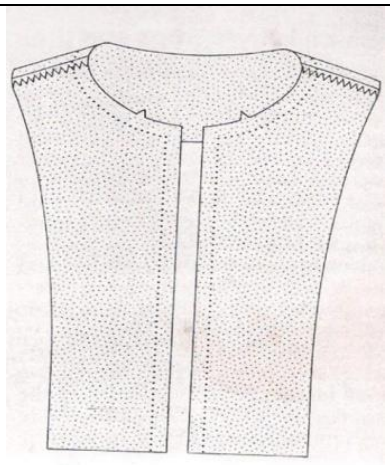
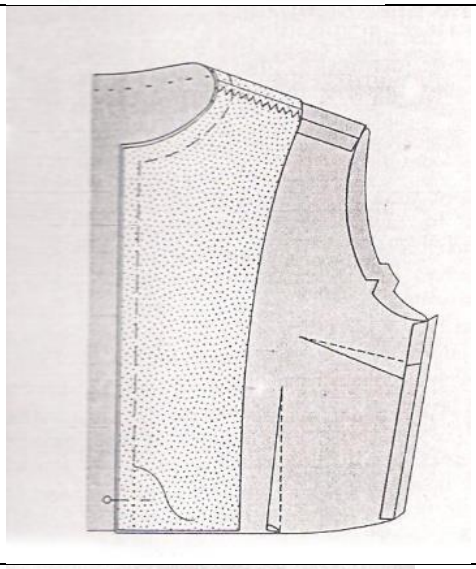
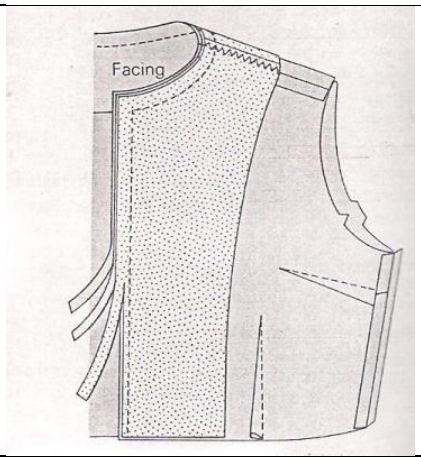
8 Cut out the collar from the fashion fabric and use the same pattern to cut the underlining and the interfacing	
9 Spread out the collar and apply interfacing on one side of the collar	
10 But when it is for small pieces, such as cuffs, it will be much easier to attach interfacing on fabric before placing the pattern piece to cut out.	
11 Lay fashion fabrics on ironing board with the right side down and the wrong side facing up.	

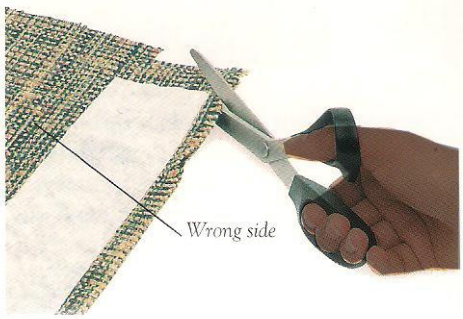
12 Lay interfacing on top of fabric with the glue side on top of wrong side of the fashion fabric.	
13 Heat iron to a temperature compatible to the fabric using electricity or hot charcoal iron.	
14 regulate the heat of the charcoal iron if so high by dipping the iron in cold water for 2 ï 3 times being careful not to allow the water to enter the burning charcoal.	
15 Using the plastic automatic pressing sponge and or water bottle, sprinkle water on the non glued side of the interfacing which is facing up on the ironing board.	

16 Cut the same size of interfacing of 2ò from the hem of sleeve wrist upwards	
17. Steam baste by holding the iron 2.5cm ï 5cm above the interfacing for 5 ï 7 seconds.	
18. Press for 10 seconds at a time covering sections beat by beat employing some weighty strength on the pressing iron.	

19. Lift up the fused fabric and turn to the right side of the fashion fabric placing the fused side downwards on the ironing board with right side facing up.	
20 Smoothen the possible bubbles out to obtain a very smooth surface and ensure adherence of the glue.	
21. Allow the interfacing to cool before further handling , keeping it out to cool for a minimum of 10 minutes or when you touch it and you could not feel any hotness any longer.	

22. Turn to the interfaced side and transfer all pattern markings using water soluble pencil or tailorsô chalk	
23. Use a zigzag or straight stitch to stitch very close to the edges of the interfacing	
24 Non fusible interfacing can be attached with pad stitching.	

25 Cut out and mark the interfacing pieces. Using a lapped or butted seam. Join pieces to form a unit for each garment area that is to be interfaced.	
26 Place unit to wrong side of the garment area it is being applied to. Match seam lines and markings; pin unit in place; tack to garment just inside the seam lines.	
27 Match, tack and stitch other sections, such as facing, to garment. Press and trim interfacing close to seam line.	

28 Attach interfacing on the hem line of the jacket. Trim the allowance diagonally close to the interfacing corners.		
29 Fold in the hem line and press wrong side of fashion fabrics with the wrong side placing the interfacing in between them. Press firmly.		

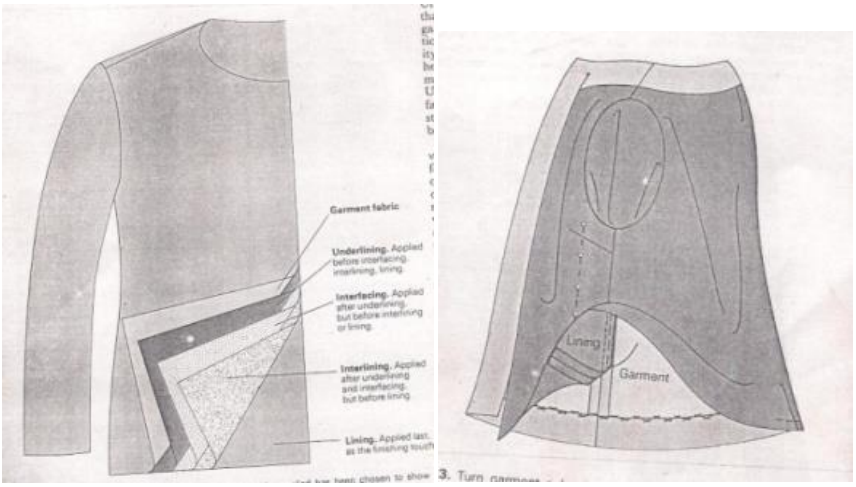
Application of knowledge by learner:

- Learner cuts interfacing accurately with the same pattern piece as that of fashion fabric.
- Learner fixes the interfacing perfectly on fashion fabric.

SELF-EVALUATION BY LEARNER

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtainedd
Attaching interfacing	Cut the woven interfacing on a diagonal grain.	5	
	Sprinkled water on non gum area of interfacing before ironing interfacing on fashion fabric.	5	
	Use the press cloth in fixing interfacing	5	
	Pre-shrink the interfacing bepfore cutting	5	
	Fixed the interfacing smoothly on the fashion fabric.	5	
	Allow the fused fabric to cool down before further touch to avoid bond interference.	5	
	Total score	30	

C2. APPLICATION OF UNDERLINING A GARMENT-



Introduction

Underlining is a layer of fabric stitched to the back of each piece of the outer fabric. It is used to give support to the outer fabric. Underlining is cut from the same pattern piece as of the outer fabric. Both of them are usually stitched together and are handled as one throughout construction. An underlining helps to prevent stretching in the fashion fabric and also prevent see-through in certain areas of the garment.

Level of students to be taught: Final year students of universities.

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

- Give 4 reasons for using underlining in garment construction.
- Cut underlining perfectly using the same pattern piece as in outer fabric.
- Sew underlining perfectly well in fashion fabric.

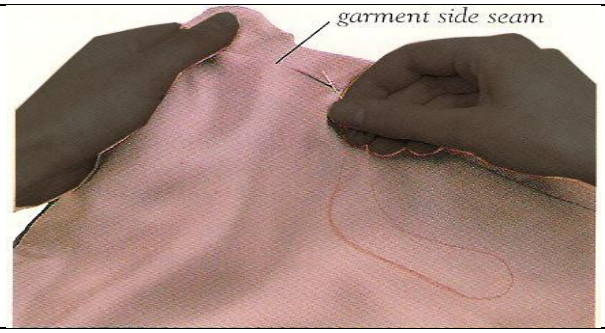
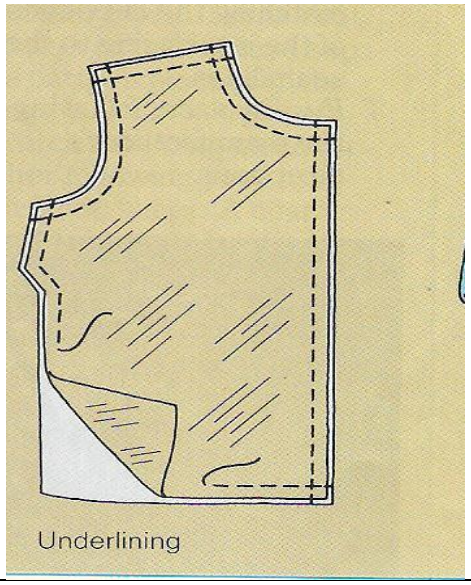
Learning resources/materials
Tailors' chalk
Worn-down pieces of soap
Tracing wheel
Tracing paper
Water erasable marker
Matching thread
Hand needle
Thimble fine tailor pins
Muslin fabrics
Tape
Seam gauge
Pattern piece
Fashion fabric

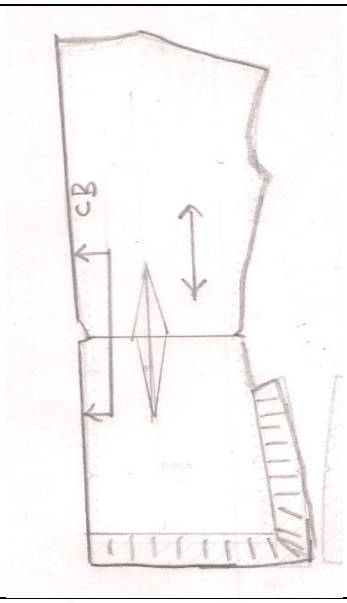
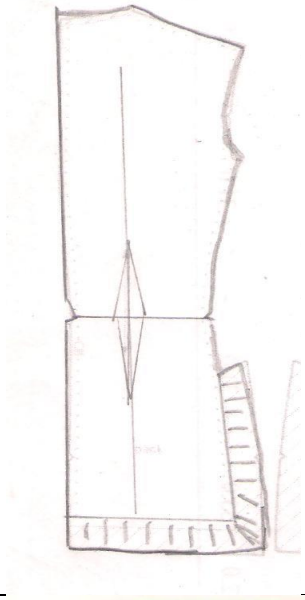
Identifying learners /students prior ideas of the stated task:

- Learners have been using garments sewn with underlining.
- Learner have been seeing dressmakers sewing garments with underlining

PERFORMING UNDERLINING

TASKS / PERFORMANCE	ILLUSTRATION
1 Pre-wash the cotton muslin to make it softer and easier	
2 Cut the underlining and the fashion fabrics using the same pattern piece	

3 Lay the wrong side of the fashion fabric on top of the underlining piece and cut.	
4 Pin around the edges, Press out any bumps and wrinkles.	
5 Baste around the edges of each piece. Stay-stitch ½ô off the edges.	

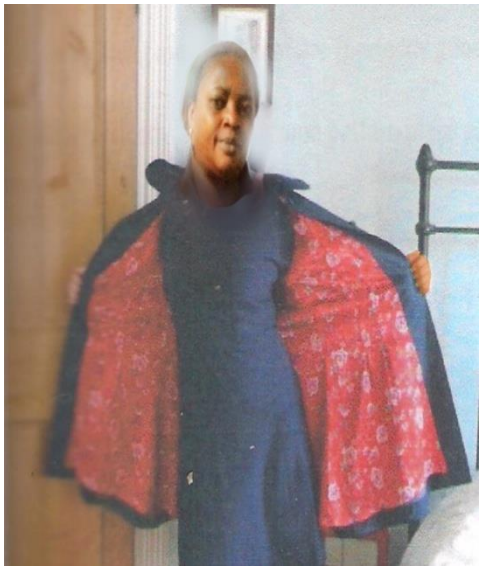
6 Draw all the pattern markings on the underlining	
7 Draw a straight line from the centre of the dart to the dart tip. Stitch a line of machine bastes stitching along the line you just z drew.	
8 Fold along this newly stitched centre line and pin. Stitch darts along marked lines.	

Application of knowledge by learner:

- The learners' ability to cut underlining accurately with the same pattern piece as of the outer fabric
- Stay-stitching both the underlining and the outer fabric.
- Capability of holding both underlining and outer fabric as one piece through construction.
- **SELF-EVALUATION BY LEARNER**

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtained
Pad stitching	- Cut the underlining using the same pattern piece as of the outer fabric. - Baste the underlining to the fashion fabric. - Check whether the underlining will not affect the colour of the outer fabric - Test the compatibility of the two fabrics. - Used soft underlining for a soft outer fabric. - Check whether both the underlining and outer fabric require pressing. Total score	5 5 5 5 5 5 30	

C3. ATTACHING LINING TO GARMENT



Introduction

Lining the garment is the final steps in the construction process and one of the most exciting steps in tailoring. This is to say that another type of fabric comes into use while constructing a garment. Such fabric could be elegant in colour, design or weave. Lining is generally used to give a finished look to the inside of the garment, prevents seams from ravelling, reduce wrinkling, help conceal some figures faults and makes a garments easier to slip on and off. Provide a little luxury or add a little pizzazz to your garment, add durability for items such as children's clothing, stretched seams, prevents sweat stains from affecting the outer garment which will allow longer use.

Level of students to be taught: Final year students of universities.

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

- To identify lining materials that are [perfectly good for each fashion fabric
- Cut lining perfectly with the same pattern piece as of the fashion fabric
- Sew lining neatly in fashion fabric
- Give 4 reasons why lining is important in garment construction
- List 2 types of lining that are commonly used by the dressmakers

Learning resources/materials:

Fine pins,
Matching thread,
Basting thread,
Hand sewing needles (no8&9),
Seam gauge
Scissors
Thimble

Identifying learners/students prior ideas of the stated task:

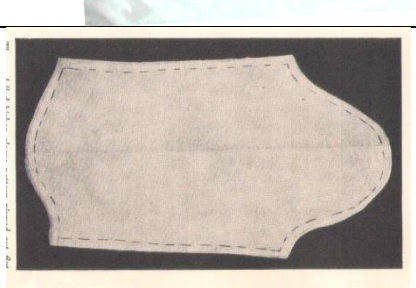
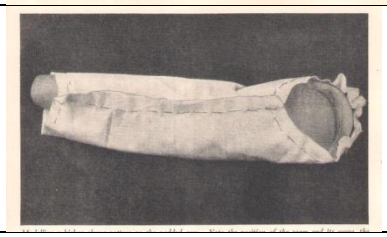
The followings are the learners' prior idea on the stated task-

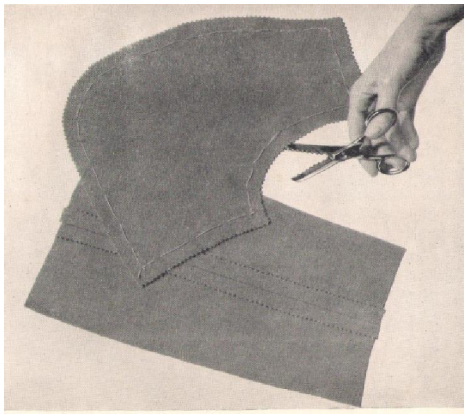
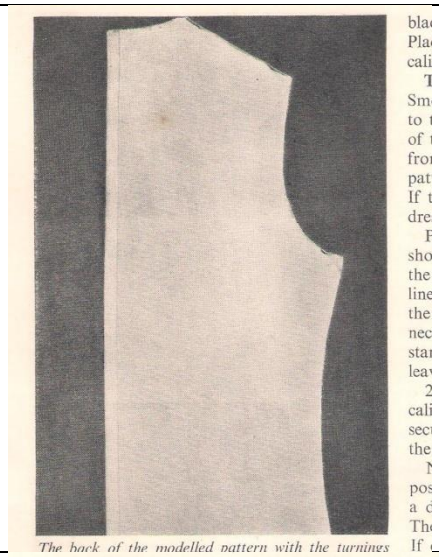
- The learner is aware of the importance of lining a garment.
- The learner must have been wearing garments sewn with lining before now

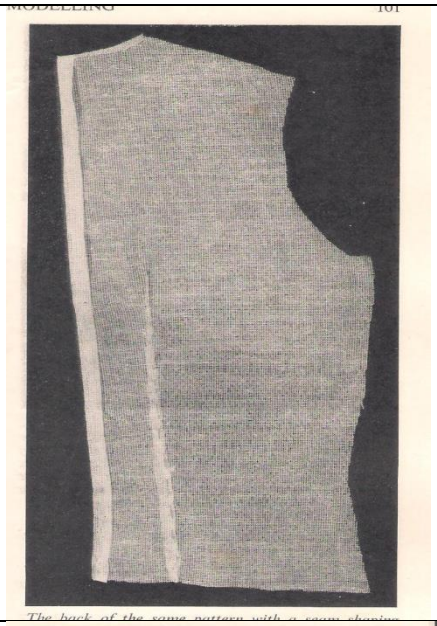
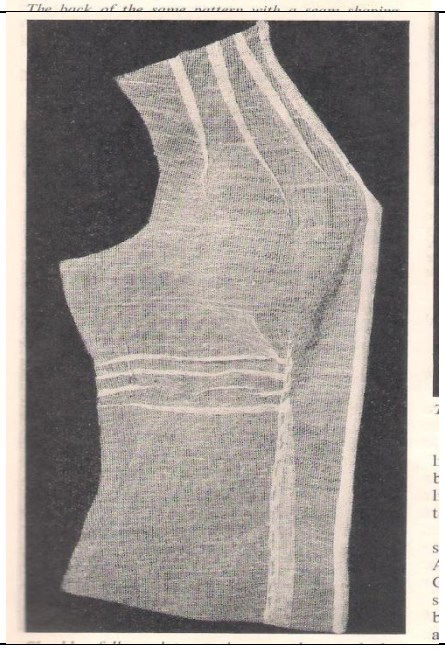
ATTACHING LINING

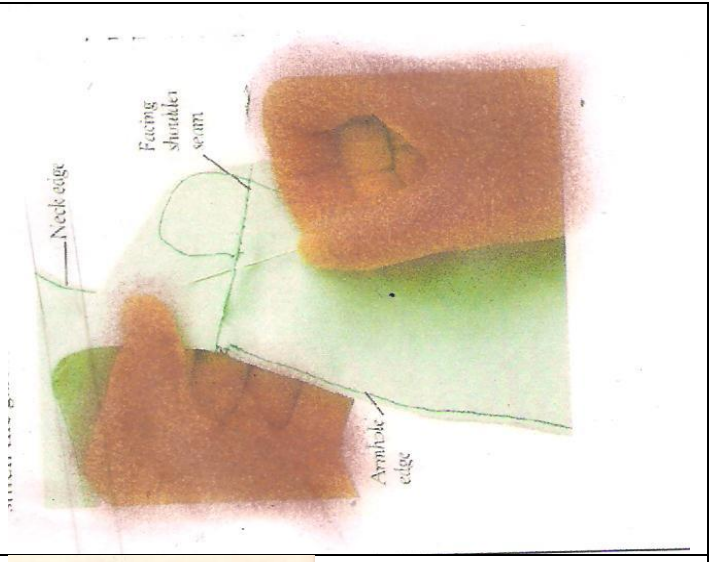
TASKS / PERFORMANCE	ILLUSTRATION
1 Drape your garment fabric over the shaping fabric	
2 Check whether the colour of the lining fabric can change the colour of your outer fabric.	
3 Check whether the fibre content of the two fabrics are compatible	
4 Check whether both of them can be laundered together without affecting their quality	

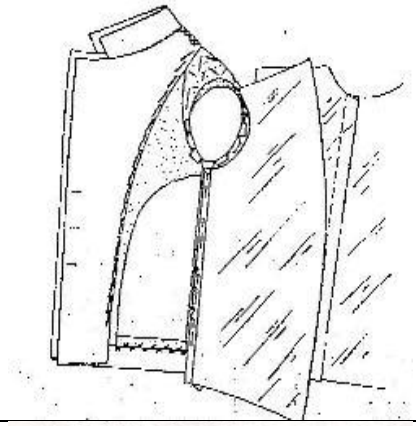
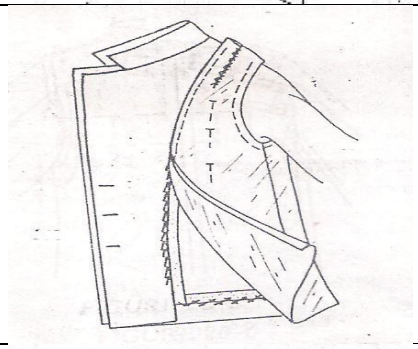
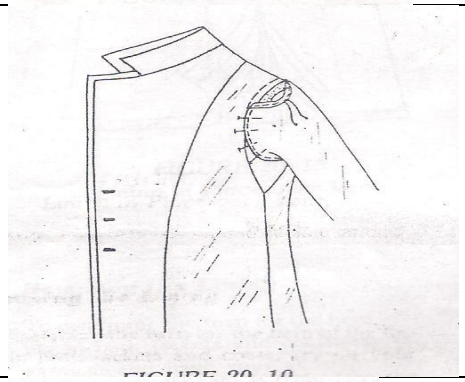
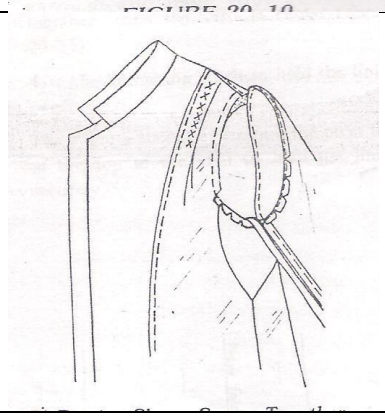
5 Check whether both fabrics can be pressed in the same way without affecting their fitting.	
6 Cut lining with the same pattern piece as of the fashion fabrics	
7 Construct the jacket lining separately by Joining at one or more major seams. Make a pleat at the centre back for ease and Press the seams open,	
8 Construct the skirt lining separately by Joining at one or more major seams. Press the seams open.	

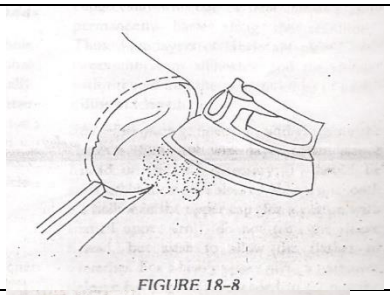
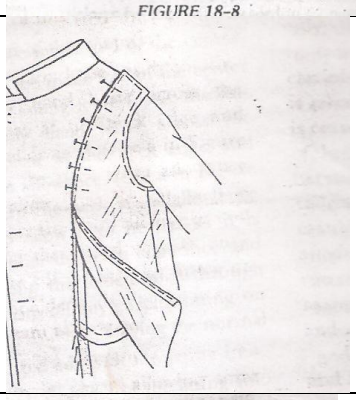
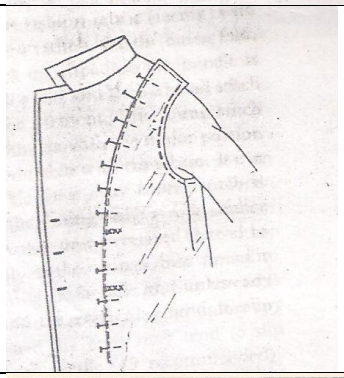
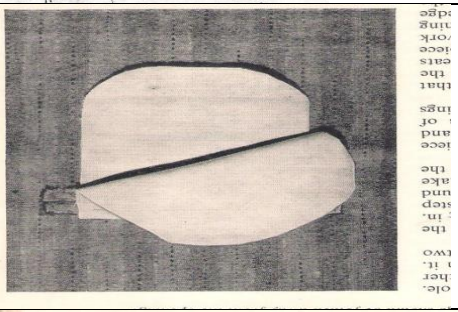
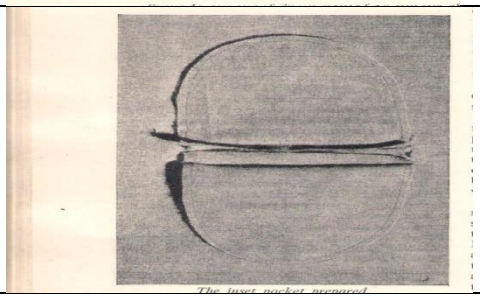
9 Join the fashion fabrics and then join it to the lining- back view	
10 Join the fashion fabrics and then join it to the lining- front view.	
11 Lining for the sleeve	
12 Baste the sleeve lining and insert the sleeve model into the basted sleeve	

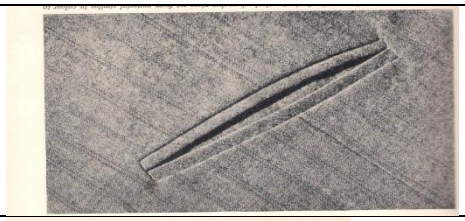
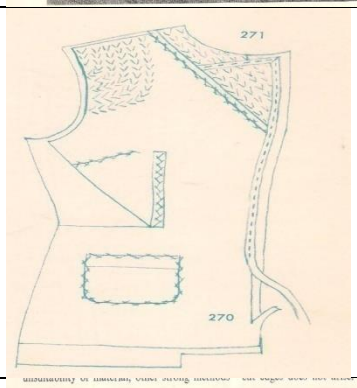
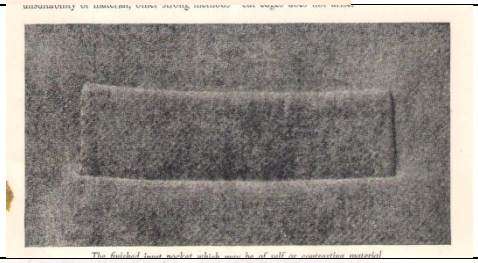
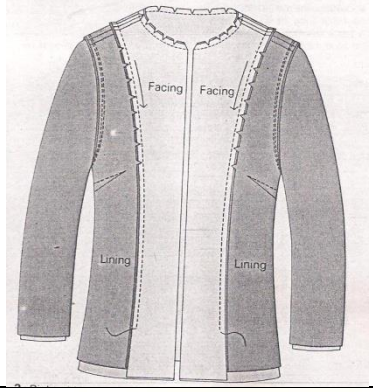
13 Cut all parts of the fashion fabrics with pinking scissors to avoid fraying. Baste the edges.	
14 The back of the modelled pattern with the turnings cut away to the fitting line.	 *The back of the modelled pattern with the turnings*
15 Sew the lining and the fashion fabrics together living a small portion at the armhole. Notch the seam to make it flat when turned. Press	

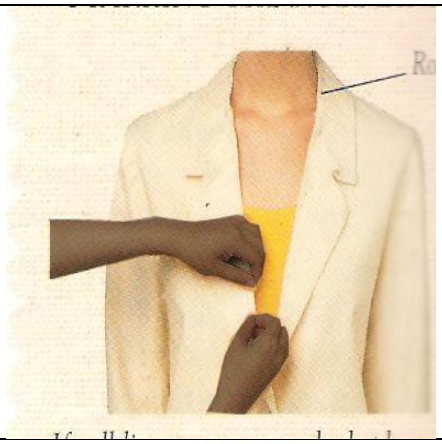
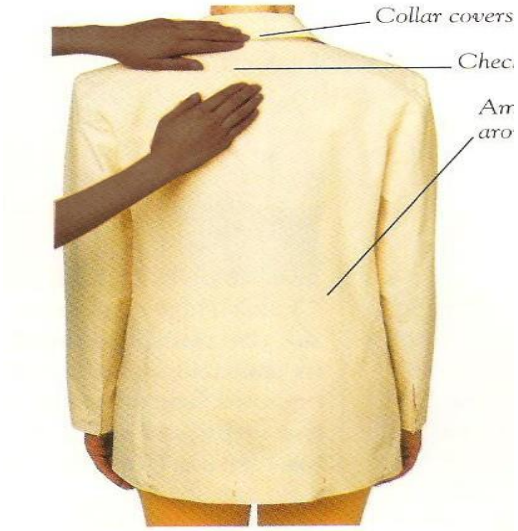
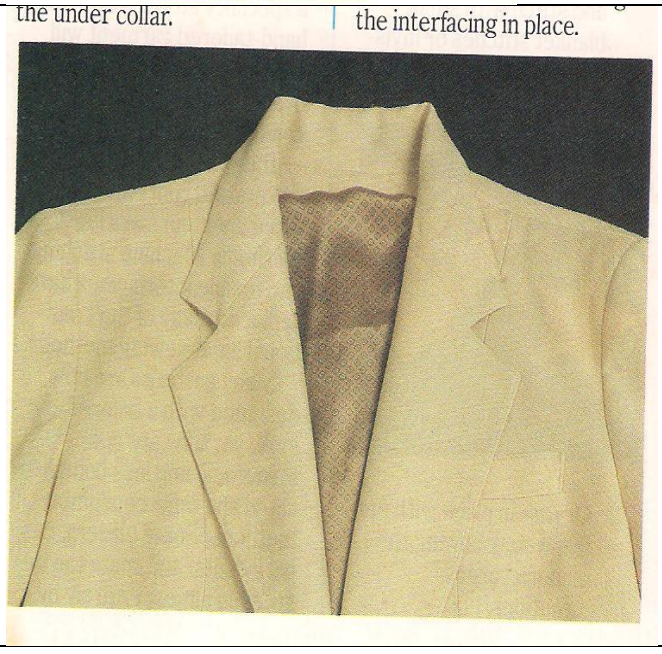
16 Sew back dart with a seam shaping the back into the waist	
17 Sew shoulder and waist darts of the front over garment front to shape the front panel into the waist	

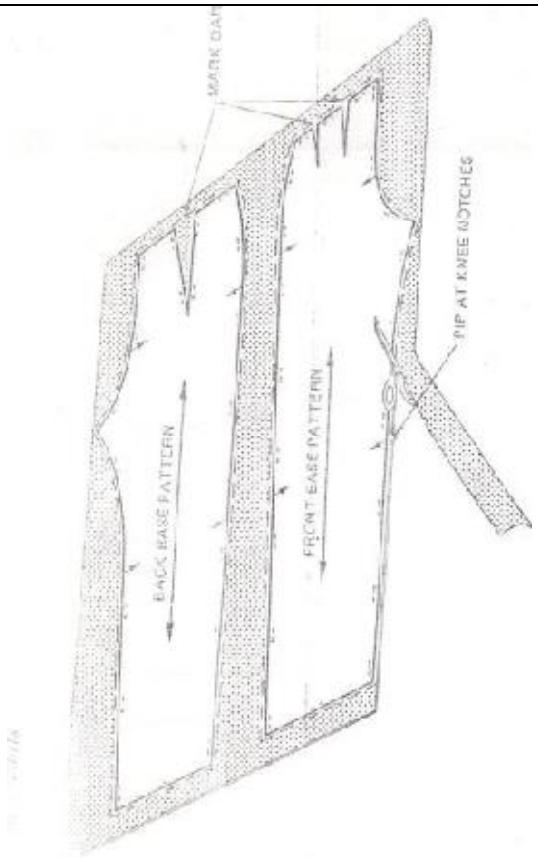
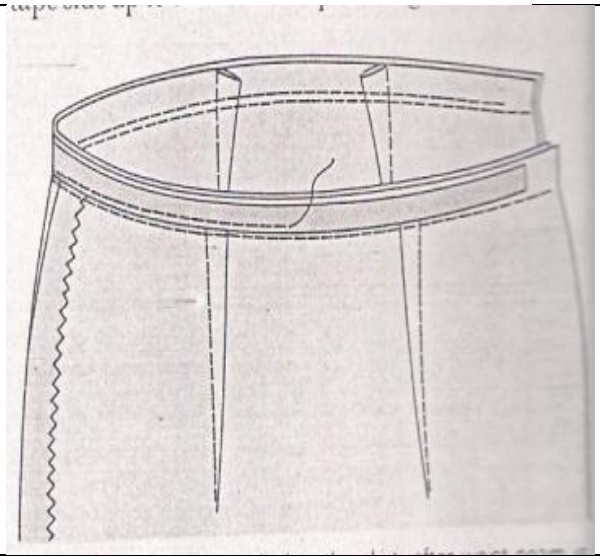
18 Join the two shoulders together	
19 Baste the outer garment shoulder seams together for permanent fitting, easing the back onto the front.	
20 Assemble all parts of the garment together	

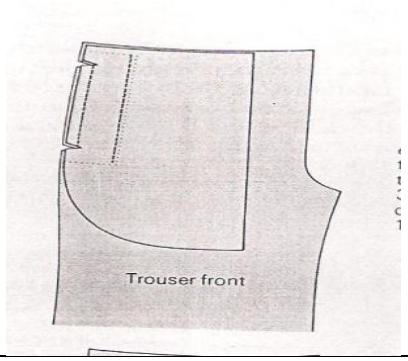
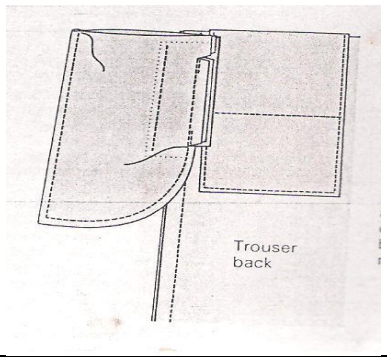
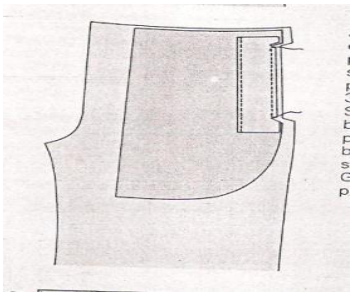
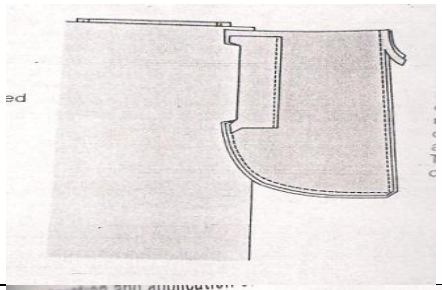
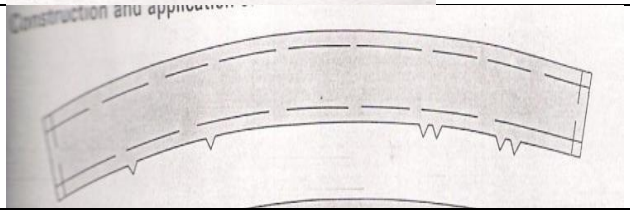
21 Match underarm seams together	
22 Fold back the front section and pin the open seams together	
23 Check the armhole of the lining against that of the garment frequently in fitting.	
24 Place the armhole seam of the lining next to the garment seam	

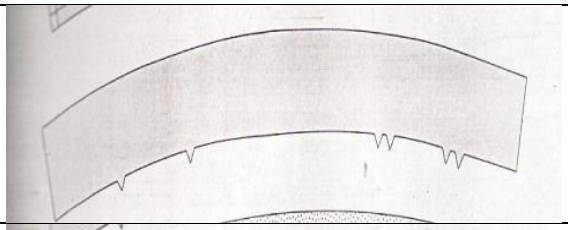
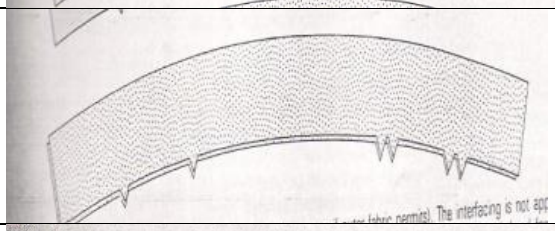
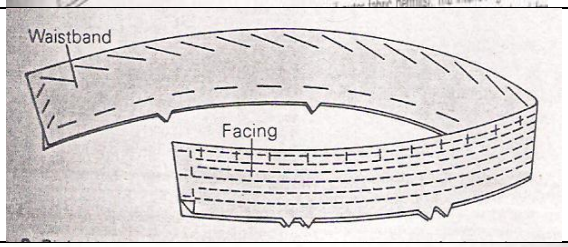
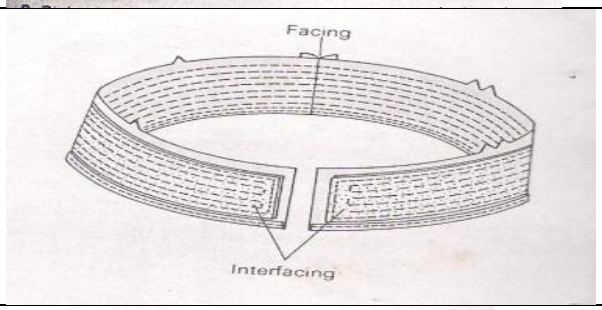
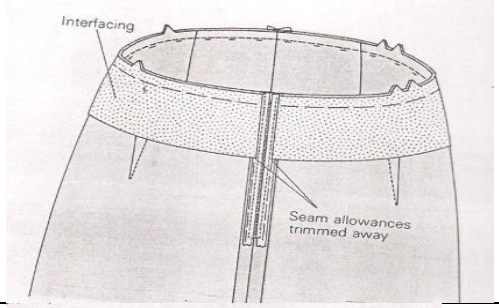
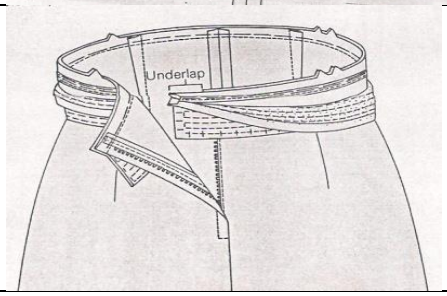
25 From the under arm extend it to the shoulder. Press	 FIGURE 18–8
26 Clip the lining seam to fit the under arm of the garment. Stretch the seam slightly and pin in place along the two front edges of the seam allowance.	
27 Lining must not be taut at any point. Trim off any surplus fabric remaining maintaining the normal seam allowance. Insert a pocket in the lining before the lining is basted to the facing.	
28 Cut lining out from the inner pocket pattern and fix.	
29 Place the underside of the pocket at the predetermined location of the garment Press and join at the wrong side of fashion fabrics	

30 turn to the right side of the garment, stretch both ends of the pocket and press- style 1	
31 Style 2 pocket attachment- Place the underside of the pocket at the predetermined location of the garment	
32 turn to the right side of the garment, stretch both ends of the pocket and press- style 2	
33 Join the assembled lining to the facing. Baste and sew the seam permanently	
34 Mark the positions for buttons by fixing the garment on a model and check the appropriate positions	

35 Check the roll line of the lapel, press to position with a hot pressing iron	
36 Check back of jacket shoulder and hem line whether they are perpendicular to the floor. Roll the back collar and press	
37 Press to shape.	

38 Pin the trouser pattern on the lining fabrics and cut	
39 Construct the lining for the trouser separately. Press open the seams.	

40 Mark out the back pocket of the trouser	
41 Attach the back pocket . baste first and then sew permanently with machine sewing	
42 Baste the side pockets temporarily, press and machine sew	
43 Trim the pocket seam allowance	
44 Use the cut out pattern of a contour waistband for the trouser and skirt, add the seam	

allowance.	
45 Use the same pattern for the lining and the interfacing.	
46 use the same pattern for the fashion fabrics	
47 baste the lining contour waistband with infusible interfacing and pad-stitch the waistband	
48 Notch around the band and leave 1/2ò to the edge of the band.	
49 attach the waistband to the skirt	
50 attach the waistband to the trouser	

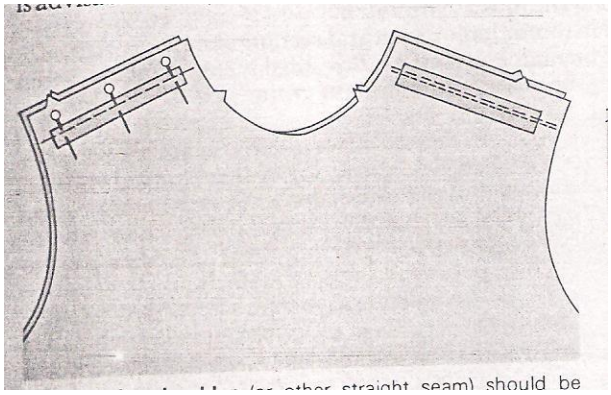
Application of knowledge by learner:

- The learner cuts the lining perfectly.
- The learner can now sew lining to outer fabric perfectly
- Ability to sew lining to fashion fabric using both hand and machine method.

SELF-EVALUATION BY LEARNER

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtained
Application of lining	- Cut lini ng using the same pattern piece as of the outer fabric.	5	
	- Allow a pleat at the back of a jacket for ease of movement.	5	
	- Use hand stitching method to attach the lining.	5	
	- Hem lining separately	5	
	- Hem the garment edge ½'' above the edge of the garment.	5	
	- Check the compatibility of the lining to the outer garment	5	
	- Total score	30	

C4. ATTACHMENT OF TAPE TO GARMENT-



Attaching tape at the shoulder

Introduction

Taping is one of the tailoring techniques that is very essential in garment construction. Some edges of a jacket or coat are taped to prevent stretching. Twill tape or seam tape is hand stitched along the seam line or fold line to stabilize bias or curved areas. Tape is usually used along the roll line where the lapels fold back and around the neck seam. The front edge, shoulder seams, armhole seams and pocket or sleeve openings can also be taped. Sewing machine could also be used in attaching tape to fashion fabric but hand sewing is the neatest.

Level of students to be taught: Final year students of universities.

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

- Identify 5 appropriate places to attach tape in fashion fabric.
- List 3 reasons for attaching tape to fashion fabric.
- Take accurate measurement of the area to attach the tape
- Cut tape accurately.

- Perfectly sew the tape to outer fabric.

Learning resources/materials:

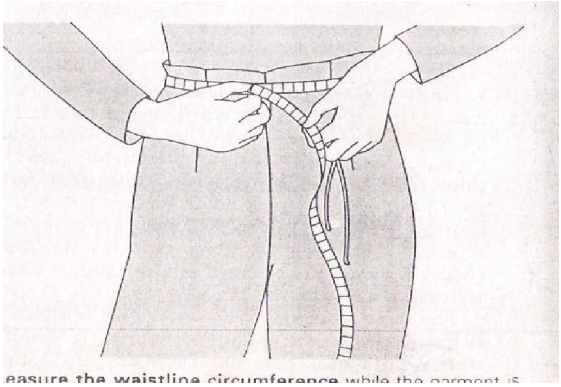
` A fine needle
Matching thread
Sewing machine
Bias tape
Measuring tape
Twill tape

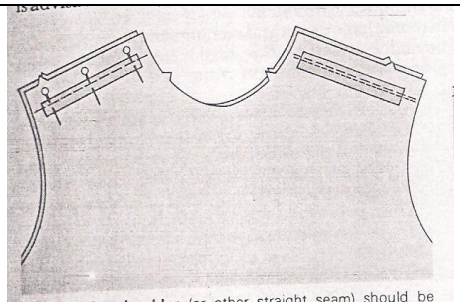
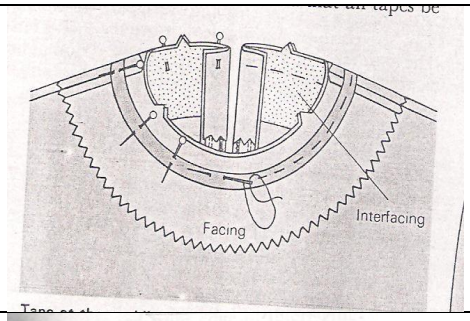
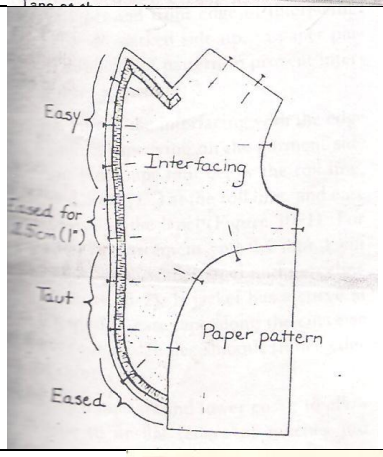
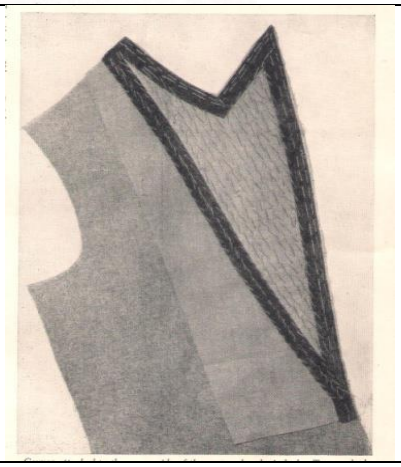
Identifying learners/students prior ideas of the stated task:

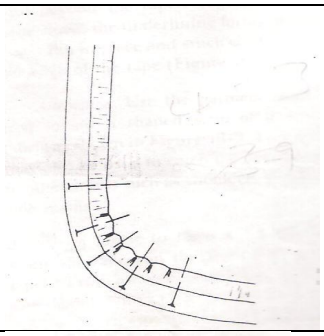
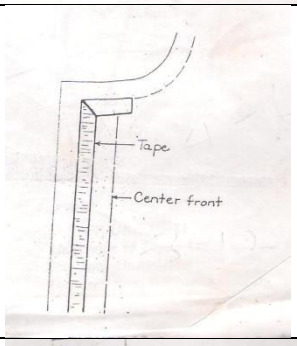
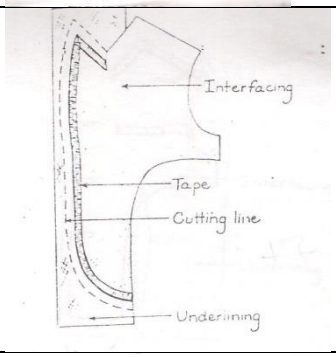
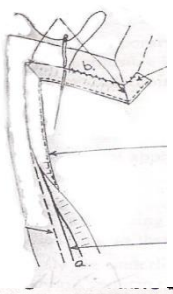
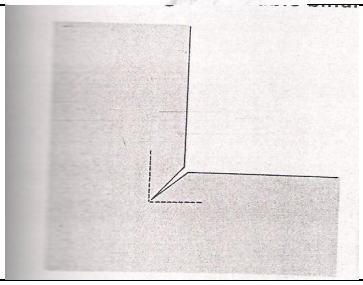
The followings are the learners' prior idea on the stated task-

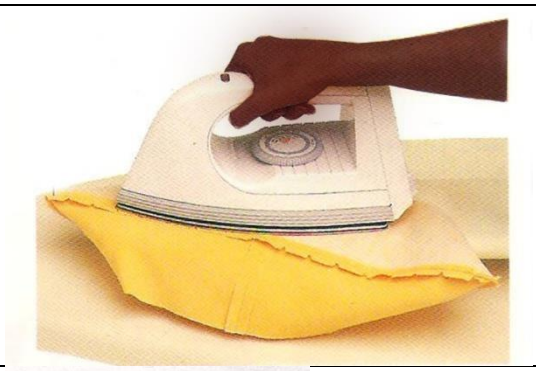
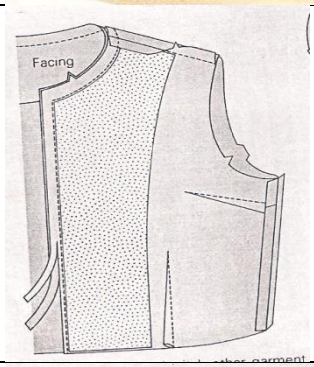
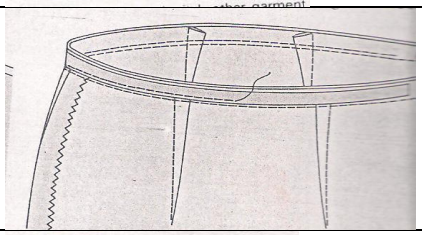
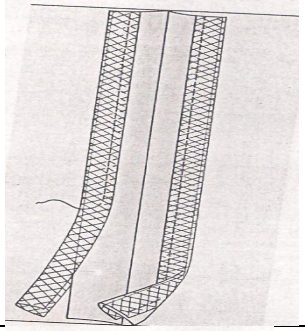
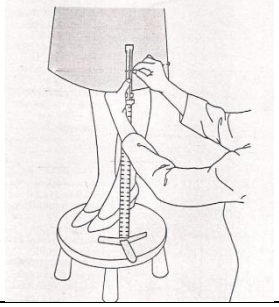
- The learner should have been taught the importance of attaching tape to some areas of an outer fabric.
- The learner must have been wearing garments sewn with tapes at the appropriate areas.

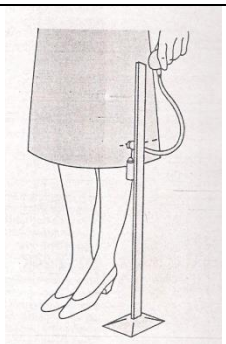
APPLICATION OF TAPING TECHNIQUE

TASKS/ PERFORMANCE	ILLUSTRATION
1 Measure the required area of the garment to be taped. Cut tape following the measurement taken.	

2 Attach tape to the shoulder of the jacket back bodice	
3 Baste the tape round the facing of the neckline of the back over garment/jacket.	
4 Hold tape taut below the roll line	
5 Ease tape for 2.5cm at the roll line. Ease slightly around the lapel	

6 Notch tape around lower curve to make it lie flat	
7 Baste the tape at the centre front and mitre at the gorgeline. For additional re-enforcement end tape 1cm, above the point where the lapel and the gorge line meet	
8 place and baste the tape on the interfaced lining for the front of the jacket	
9 Do not clip through outer edge of tape at any time. Stitch inside edge of tape	
10 Miter tape at point of lapel	

11 Notch the tape at curves and press.	
12 Trim away excess tape	
13 Baste the tape around the trouser waistband	
14 Attach tape to the edge of the skirt. Baste and press open	
15 Mark out the hem line of the skirt. Attach tape to the edge of the hem line and fold	

16 Try the skirt on yourself and mark out the hem line, put it down and attach the tape round the hem line, press and fold.	

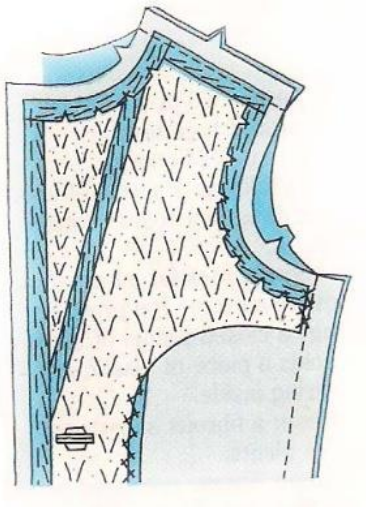
Application of knowledge by learner:

- learner's ability to measure, cut and sew tape on outer fabric

SELF-EVALUATION BY LEARNER

Tasks	Activities surrounding the task- Did the learner	Max Score	Score Obtained
Attachment of tape to garment	- Cut the tape accurately - Place the tape in taut position before sewing. - Notch the tape in a curve so as to lay tape flat. - Miter tape at the point of lapel. - Sew the tape at the accurate position Total score	5 5 5 5 5 25	

C5. PAD STITCHING GARMENTS



Introduction

Pad stitching is a series of small diagonal stitches made by hand through the interfacing and outer fabric. It is done on the under collar and lapels to shape and mold the fabric pad stitching is used mainly in tailoring to fasten canvas interfacing firmly to the fabric on lapels and collars. When the stitches are made short and close together, they shape the fabric three dimensionally. When they are made long and spaced apart, the stitches simply hold the woven interfacing permanently to the fabric. Pad stitching could also be done using sewing machine with straight or zigzag stitches. This is faster to do than the hand pad stitching but not always encouraged as the stitches may show at the right side of the outer fabric.

Level of students to be taught: Final students of universities.

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

- Mention 3 equipments 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.

Identifying learners/students prior ideas of the stated task:

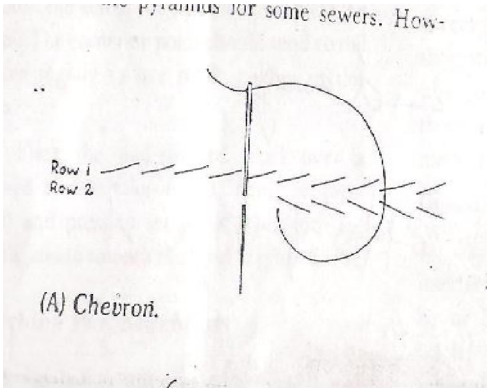
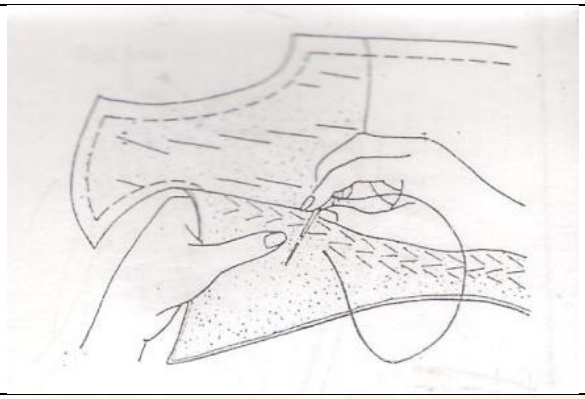
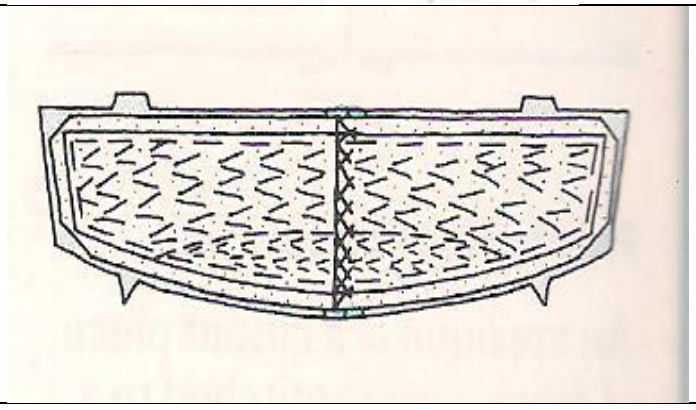
The followings are the learners' prior idea on the stated task-

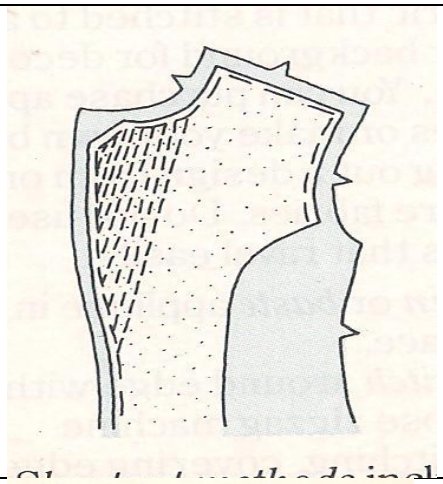
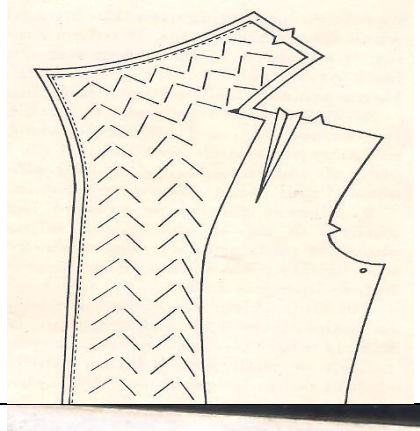
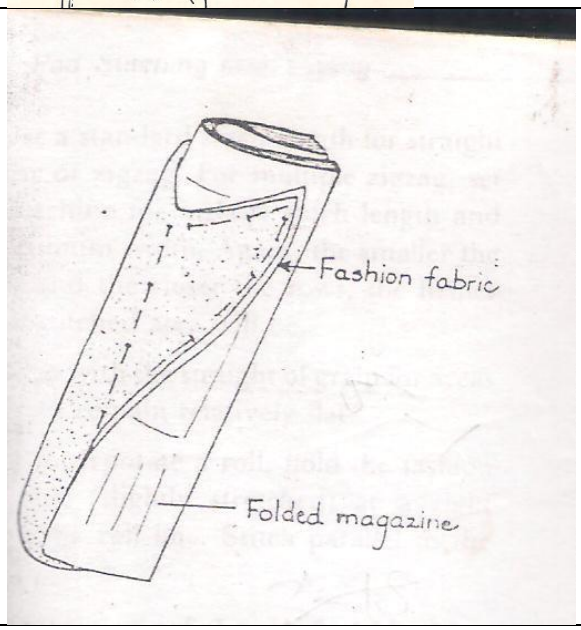
- The learner has been taught how to make stitches.

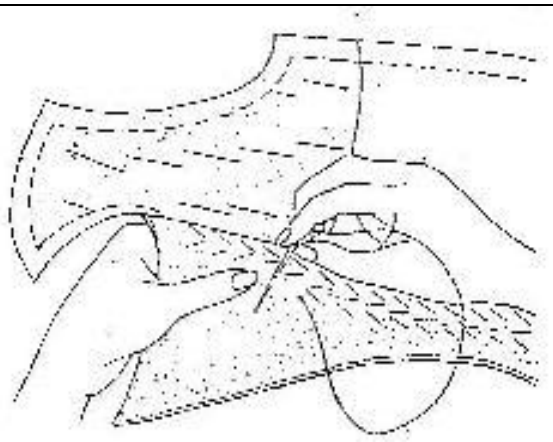
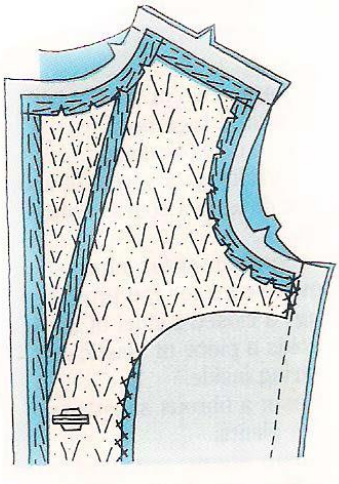
The learner have the skill of making both long and short basting

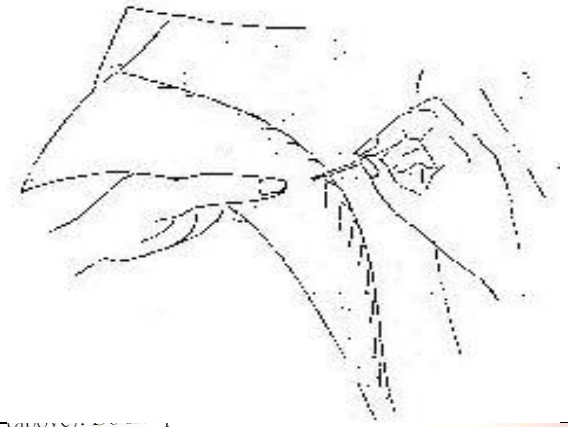
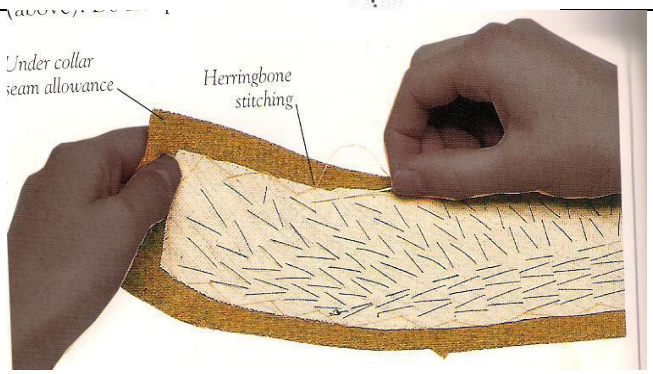
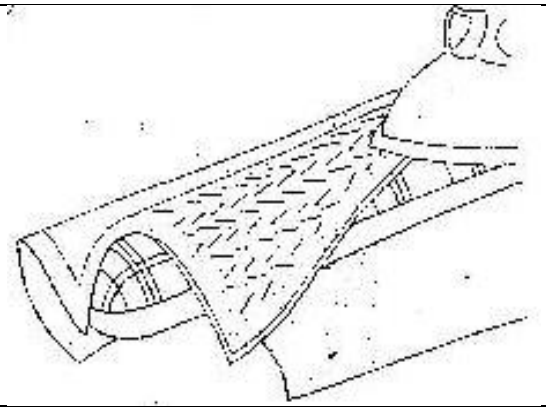
HOW TO PAD-STITCH

TASKS / PERFORMANCE	ILLUSTRATION
1 Cut a matching single thread,	

2 wear a thimble to protect your finger	 Metal thimble
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.	 Row 1 Row 2 (A) Chevron.
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.	
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.	

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.

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	

D. The instructional materials that could be utilised for teaching tailoring techniques in university programme

1	Instructional materials for tailoring techniques
2	matching thread
3	Bais tape
4	Woven and non woven interfacing
5	Pressing clothes
6	Tracing carbon
7	Pattern peice
8	Basting thread
9	Tailorôs chalk
10	Muslin fabrics
11	Fashion fabrics
12	Brown paper
13	Pattern piece

E. The instructional tools and equipment that could be utilised for teaching tailoring techniques in university programme.

S/N	INSTRUCTIONAL TOOLS AND EQUIPMENT
1	A fine hand sewing needle
2	Measuring tape
3	Pressing iron,
4	Thimble
5	Tailors pin,
6	Scissors
7	clip scissors,
8	Magazine.
9	Pressing Iron
10	Ironing board
11	Tracing wheel
12	Fine tailorsô pins- plastic edge
13	Basting thread,
14	Seam gauge
15	Tailorsô chalk
16	Textbooks
17	Teachersô guide
18	Teachersô guide
19	Learnersô course book
20	Computer
21	Tape recordings/recorder
22	Transparencies
23	Overhead projectors
24	Slides
25	Films
26	Chalk board
27	Display board
28	Charts
29	Models
30	Real objects
31	Plastic automatic pressing sponge

F. SELF-EVALUATION ITEMS:

	THE FOLLOWING SHOULD BE INCLUDED IN THE SELF-EVALUATION CRITERIA APPROPRIATE FOR A SELF-INSTRUCTIONAL MANUAL FOR HOME ECONOMICS STUDENTS	
1	Cut the woven interfacing on a diagonal grain.	
2	Sprinkled water on non gum area of interfacing before ironing	interfacing on fashion fabric.
3	Use the press cloth in fixing interfacing	
4	Pre-shrink the interfacing before cutting	
5	Fixed the interfacing smoothly on the fashion fabric.	
6	Allow the fused fabric to cool down before further touch to avoid	bond interference
7	Cut lining using the same pattern piece as of the outer fabric.	
8	Allow a pleat at the back of a jacket for ease of movement.	
9	Use hand stitching method to attach the lining.	
10	Hem lining separately	
11	Hem the garment edge ½ôô above the edge of the garment.	
12	Check the compatibility of the lining to the outer garment	
13	Cut the underlining using the same pattern piece as of the outer	fabric.
14	Baste the underlining to the fashion fabric.	
15	Check whether the underlining will not affect the colour of the outer	fabric
16	Test the compatibility of the two fabrics.	
17	Used soft underlining for a soft outer fabric.	
18	Check whether both the underlining and outer fabric require	pressing.
19	Cut the tape accurately	
20	Place the tape in taut position before sewing.	
21	Notch the tape in a curve so as to lay tape flat.	
22	Mitre tape at the point of lapel.	
23	Sew the tape at the accurate position.	
24	Cut the lapels and collars on a diagonal grain.	
25	Cut the lapels and interface using the same pattern piece.	
26	Sew pad-stitching with the appropriate stitch length/size.	
27	Hand pad-stitching hidden at the right side of the outer fabric.	
28	Use chevron pad-stitch to sew woven canvas interfacing on outer fabric.	
29	Press the pad-stitched lapel after sewing.	
30	Check the roll line of the lapel	
31	Correct use of tools and equipment	
32	Dependability in handling tailoring jobs	

APPENDIX E

Instrument 3

Validation assessment questionnaire (VAQ)

This questionnaire was developed to assess the appropriateness of the self-instructional manual in tailoring techniques by the validates (Home Economics lecturers, Technical Instructors and tailors.

	The following constitute the frame work for developing the self-instructional manual	**VA**	**A**	**IA**	**VIA**
1	Task.				
2	Introducing task to be learnt.				
3	Level of students that are learning the task				
4	Stating the instructional objectives of the task.				
5	Listing the instructional resources / materials for learning the task.				
6	Identification of studentsô prior ideas.				
7	Step by step listing of instructions to be followed in performing the specific tailoring tasks (listing learnersô role/activities.				
8	Learners applying skills listed in the task				
9	Evaluating task performance using self-assessment				
A	**Content area items**				
1	Comprehensiveness of the self- instructional manual				
2	Specificity of instructions in self-instructional manual				
3	Accuracy of information in the self-instructional manual				
4	Readability of the self-instructional manual				
5	Acceptability of the resources listed in self-instructional manual				
B	**Format - items include**				
1	Over all design of the self-instructional manual				
2	Appearance of the self-instructional manual				
3	Length of the self-instructional manual				
4	Format appeal of the self-instructional manual				
C	**Utility- Appropriate users of the self instructional manual includes**				
1	Home Economics teachers				
2	Clothing and textile teachers				
3	Clothing and textile students				
4	Dressmaking students				
5	Apprentices in tailoring				
6	Individuals who are interested in sewing at home				
7	Teachers who need refresher course				

Key: *Very appropriate VA, Appropriate A, Inappropriate 1A, Very inappropriate VI*

APPENDIX F

TEST ITEMS FOR ASSESSING THE EFFECTIVENESS OF THE MANUAL

PRACTICAL SKILL ASSESSMENT ITEMS ON TAILORING TECHNIQUES

Instruction: Answer all the questions- circle the alphabet of your choice

Interfacing technique

1. Preshrinking of fusible interfacing can be achieved by:
    a) Soaking in cold water for 24 hours and left to dry
    b) Soaking in hot water for 12 hours and wrung out
    c) Soaking in cold water for 12 hours and wrung out
    d) Washing in cold water by kneading and squeezing
    e) Sprinkling water at the non resin side and heating for 5-7 seconds

2. To transfer pattern marks on interfaced fabrics the best marking procedure to choose is
    a) Tracing wheel
    b) Tailors tacking
    c) Tailors chalk
    d) Chalk pencil
    e) Tailors wax.

3. Woven interfacing are cut on
    a) Vertical grainline
    b) Diagonal grainline
    c) Horizontal grainline
    d) None of the grainlines
    e) All of the grainlines.

4. Interfaced fabric should be allowed to cool before further construction for a minimum of:
    a) 40 mins
    b) 10 mins
    c) 1 hour
    d) 24 hours
    e) None of the above.

5. Press cloth is used in fixing interfacing to fashion fabric to
    a) Prevent overheating
    b) Make fashion fabric smooth
    c) Beautify the fashion fabric

d) Damage to the fashion fabric
e) None of the above.

6. Allow the fused fabric to cool down before further touch to
    a) Avoid bond interference
    b) Avoid fused fabric stitching on the machine
    c) Permit speed sewing
    d) Make the fashion fabric strong
    e) Make underlining conform to the fashion fabric.

7. Interfacing application in garment construction is to add
    a) Firmness to the fashion fabrics
    b) Increase the measurement of the fashion fabric
    c) Separation between the fashion fabrics and the underlining
    d) All of the above
    e) Non of the above

8. Interfacing are applied for the re-enforcement in garment at the
    a) Collars
    b) Button holes
    c) Cuffs
    d) All of the above
    e) Non of the above

9. Woollen interfacing should have the same with the fashion fabrics
    a) True
    b) False
10. Interfacing should be attached to fashion fabrics before cutting out small piece of patterns such as cuffs.

    a) True
    b) False

Underlining technique

11. Cotton underlining are pre-washed before attachment to
    a) Make it beautiful
    b) Make it softer and easier
    c) Make it stiff
    d) Make it smooth
    e) None of the above.

12. Underlining fabrics are pressed before cutting to
    a) Avoid bumps and wrinkles

b) Clearly see the designs
c) Make underlining strong
d) Make underlining washable
e) Make underlining cheaper.

13. Underlining are temporarily held together with
    a) Back stitch
    b) Basting stitch
    c) Machine stitch
    d) Decorative stitch
    e) None of the above

14. Underlining fabrics are drapped around the fashion fabric to check whether
    a) The colour matches the fashion fabric
    b) It is beautiful
    c) it fades
    d) It is strong enough
    e) It is washable.
15. Light weight underlining fabrics are most appropriate for the construction of garment with
    a) Cotton fabrics
    b) Nylon fabrics
    c) Silk fabrics
    d) Woollen fabrics
    e) None of the above

16. Colour of the underlining fabrics must be compatible to the fashion fabrics
    a) True
    b) False

17. Underlining fabrics should be as durable as the fashion fabrics
    a) True
    b) False

18. Considering colour fastness is very important in the choice of underlining fabrics
    a) To avoid changing the colour of the fashion fabrics
    b) To make the garment more beautiful
    c) To make the fashion fabric last longer
    d) All of the above
    e) None of the above
19. Underlining fabrics are cut in the same grain line with the fashion fabrics
    a) True
    b) False

20. Underlining fabrics should be free from bumps and wrinkles before placing the pattern piece to cut using a pressing iron
    a) True
    b) False

Lining technique

21. Allow a pleat of lining at the back of a jacket for
    a) Ease of movement
    b) A style
    c) A design
    d) Fit
    e) None of the above.
22. Heavy weight lining is most appropriate for
    a) Heavy weight fashion fabrics
    b) Light weight fashion fabrics
    c) Lace materials
    d) Bridal satin
    e) None of the above.

23. The fastest method of attaching lining to garments is by
    a) Hand basting
    b) Machine basting
    c) Use of glue dots
    d) None of the above
    e) All of the above.

24. Cutting lining using the same pattern piece for the outer fabric is
    a) For easy handling
    b) For accuracy
    c) All of the above
    d) To avoid waste
    e) None of the above.

25. Hemming lining separately from the fashion fabric is to
    a) Make the work easy
    b) Make the wearer comfortable
    c) Make the garment expensive
    d) Make the garment cheap
    e) Make the garment relaxed.

26. To check whether the colour of the lining is compatible to fashion fabric
    a) Drape the lining on the fashion fabric
    b) Stitch the lining on the fashion fabric

c) Baste the lining and the fashion fabric together
d) Place lining on top of the fashion fabric
e) Drape the fashion fabric on top of the lining.

27. Linings are subject to more wear and stress than the fashion fabrics
    a) True
    b) False
28. Lining fabrics should not have the ability to absorb perspiration
    a) True
    b) False

29. How many layers of fabrics are there between the fashion fabrics and the lining
    a) Underlining
    b) Interlining
    c) Interfacing
    d) All of the above
    e) None of the above

30. Lining attached at the neckline and facing and are hanging loose provides a professional finish to the inside as all seams are neatly hidden.
    a) True
    b) False

Tapping technique

31. Tape lies flat and smooth in curved edges if:
    a) Tape is notched
    b) Tape is squared
    c) Tape is mitred
    d) Tape is straight
    e) None of the above.

32. Place the tape in taut position before sewing to
    a) Have a stiff finishing
    b) Have a rough finishing
    c) Have a smooth finishing
    d) Have a flat smooth finishing
    e) Have a broad finishing.
33. The width size of tape most appropriate to sew the lapel is
    a) 5 inches
    b) 1 inch
    c) 3 inches
    d) 7 inches
    e) 9 inche

34. Nylon tapes are best used in sewing
    a) Waistband
    b) Jacket front
    c) Slip cover
    d) Valances
    e) All of the above

35. Attaching tape at zipper position makes it bulky
    a) True
    b) False

36. The best temperature for pressing tape is
    a) Warm
    b) Very hot
    c) Cold
    d) Very cold
    e) None of the above

37. Fleece side of the tape are normally attaché to the section that comes in contact with the body
    a) True
    b) False

38. Burr side of the tape are not attached to be in contact with the body because
    a) It is harder than the fleece side
    b) It is slippery
    c) It is not beautiful
    d) All of above
    e) None of the above

39. Burr side of the tapes are positioned
    a) Right side up
    b) Right side down
    c) Under-lap
    d) Over-lap
    e) None of the above

40. Tapes are cut from a diagonal grain line
    a) True
    b) False

Pad-stitching technique

41. The best stitch for pad-stitching is
    a) Running stitch
    b) Back stitch
    c) Satin stitch
    d) Chevron stitch
    e) All of the above.

42. Pad-stitching must be invisible at the outer side of the fashion fabric
    a) True
    b) false

43. Pad- stitching not visible from fashion fabric side when:
    a) Lapel is folded
    b) Lapel is rolled
    c) Lapel is flattened
    d) Lapel is attached
    e) None of the above

44. Small pad-stitches are done in the turn area to obtain
    a) A sharp, firm roll
    b) Smooth roll
    c) Flat roll
    d) Stiff roll
    e) None of the above.

45. After some lines of pad-stitches
    a) Press
    b) Fold
    c) Notch
    d) Beat
    e) All of the above.

46. Thread for pad-stitching is best when
    a) Double
    b) Single
    c) Thick
    d) Coarse
    e) Smooth.

47. Thimbles are used in pad stitch to
    a) Make the work faster
    b) Protect the finger
    c) Make stitches beautiful
    d) Make stitches stronger
    e) Make stitches smoother.

48. Pad-stitching are best sewn when Pad-stitching thread catches one or two threads of the fashion fabrics
    a) True
    b) False

49. One of the major function of Pad-stitching is
    a) To change the design of the fashion fabrics
    b) To tack interfacing to collars or lapels
    c) To make garment easy to wear
    d) All of the above
    e) None of the above

50. Pad-stitching within the seam allowance is not necessary
    a) True
    b) False

APPENDIX G

KENDALLS COEFFICIENT OF CONCORDANCE

	N	Mean	Std. Deviation	Minimum	Maximum
Cut the woven interfacing on a diagonal grain.	5	2.8000	.44721	2.00	3.00
Sprinkled water on non gum area of interfacing before ironing interfacing on fashion fabric.	5	3.0000	.00000	3.00	3.00
Use the press cloth in fixing interfacing	5	2.0000	.000000	2.00	2.00
Pre-shrink the interfacing before cutting	5	2.0000	.000000	2.00	2.00
Fixed the interfacing smoothly on the fashion fabric.	5	3.0000	.000000	3.00	3.00
Allow the fused fabric to cool down before further touch to avoid bond interference	5	2.0200	.44721	2.00	3.00
Cut lining using the same pattern piece as of the outer fabric.	5	2.8000	.44721	2.00	3.00
Allow a pleat at the back of a jacket for ease of movement.	5	3.0000	.44721	2.00	3.00
Use hand stitching method to attach the lining.	5	2.8000	.00000	3.00	3.00
Hem lining separately	5	2.0000	.44721	2.00	3.00
Hem the garment edge ½ĉô above the edge of the garment.	5	2.0000	.00000	2.00	2.00
Check the compatibility of the lining to the outer garment	5	2.4000	.00000	2.00	2.00
Cut the underlining using the same pattern piece as of the outer fabric.	5	2.4000	.89443	1.00	3.00
Baste the underlining to the fashion fabric.	5	2.0000	.00000	2.00	2.00
Check whether the underlining will not affect the colour of the outer fabric	5	3.000	.00000	3.00	3.00
Test the compatibility of the two fabrics.	5	2.2000	.44721	2.00	3.00
Used soft underlining for a soft outer fabric.	5	3.0000	.00000	3.00	3.00
Check whether both the underlining and outer fabric require pressing.	5	2.0000	.00000	2.00	2.00
Cut the tape accurately	5	3.0000	.00000	3.00	3.00
Place the tape in taut position before sewing.	5	2.0000	.00000	2.00	2.00
Notch the tape in a curve so as to lay tape flat.	5	1.2000	.44721	1.00	2.00
Mitre tape at the point of lapel.	5	.20000	.44721	.00	1.00
Sew the tape at the accurate position.	5	2.8000	.44721	2.00	3.00
Cut the lapels and collars on a diagonal grain.	5	3.0000	.00000	3.00	3.00

Cut the lapels and interface using the same pattern piece.	5	2.8000	.44721	2.00	3.00
Sew pad-stitching with the appropriate stitch length/size.	5	2.8000	.44721	2.00	3.00
Hand pad-stitching hidden at the right side of the outer fabric.	5	2.0000	.00000	2.00	2.00
Use chevron pad-stitch to sew woven canvas interfacing on outer fabric.	5	3.0000	.30000	3.00	3.00
Press the pad-stitched lapel after sewing.	5	3.0000	.30000	3.00	3.00
Check the roll line of the lapel	5	2.0000	.00000	2.00	2.00

Test statistics

N	5
Kendallô$_W$[a]	.801
Chi-Square	116.153
Df	29
Asymp.Sig.	.000

APPENDIX H

ANCOVA

Analysis of Covariance

Source	Type III sum of squares	Df	Mean Square	F	Sig.
Corrected Model	600.030[a]	2	300.015	3.488	.037
Intercept	17670.108	1	17670.108	205.409	.000
Pre-test	10.849	1	10.849	.126	.724
Group	599.336	1	599.336	6.967	.011
Error	4903.370	57	86.024		
Total	236888.000	60			
Corrected Total	5503.400	59			

APPENDIX I

SPECIMEN ANSWERS FOR THE PRACTICAL SKILL TEST ITEMS (PSTI)

1	E	11	A	21	A	31	D	41	B
2	A	12	D	22	A	32	E	42	D
3	B	13	A	23	D	33	B	43	C
4	B	14	B	24	D	34	C	44	B
5	B	15	D	25	D	35	C	45	A
6	B	16	B	26	B	36	D	46	A
7	E	17	C	27	B	37	D	47	B
8	A	18	A	28	A	38	B	48	B
9	D	19	B	29	B	39	A	49	E
10	D	20	B	30	A	40	D	50	A

APPENDIX J

Validates result

		$\overline{X_1}$	SD_1	$\overline{X}_2$	SD_2	$\overline{X}_3$	SD_3	$\overline{X}_g$	SD
*VAR*1	20	4.20	0.77	4.48	0.81	4.38	0.83	4.39	0.82
VAR 2	20	4.39	0.65	4.34	0.85	4.36	0.81	4.36	0.81
VAR 3	20	4.21	0.73	4.49	0.80	4.40	0.79	4.40	0.79
VAR 4	20	4.21	0.71	4.38	0.80	4.21	0.89	4.26	0.85
VAR 5	20	4.25	0.77	4.30	0.87	4.36	0.87	4.33	0.86
VAR 6	20	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78
VAR 7	20	4.46	0.66	4.32	0.80	4.45	0.75	4.42	0.75
VAR 8	20	4.39	0.65	4.34	0.85	4.36	0.81	4.36	0.81
VAR 9	20	4.21	0.73	4.49	0.80	4.40	0.79	4.40	0.79
VAR 10	20	4.21	0.71	4.38	0.80	4.21	0.89	4.26	0.85
VAR 11	20	4.25	0.77	4.30	0.87	4.36	0.87	4.33	0.86
VAR 12	20	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78
VAR 13	20	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78
VAR 14	20	4.46	0.66	4.32	0.80	4.45	0.75	4.42	0.75
VAR 16	20	4.25	0.77	4.43	0.77	4.49	0.75	4.45	0.76
VAR 17	20	4.18	0.83	4.40	0.84	4.36	0.80	4.35	0.81
VAR 18	20	4.39	0.65	4.34	0.85	4.36	0.81	4.36	0.81
VAR 19	20	4.21	0.73	4.49	0.80	4.40	0.79	4.40	0.79
VAR 20	20	4.21	0.71	4.38	0.80	4.21	0.89	4.26	0.85
VAR 21	20	4.25	0.77	4.30	0.87	4.36	0.87	4.33	0.86
VAR 22	20	4.25	0.81	4.38	0.81	4.39	0.77	4.37	0.78
VAR 23	20	4.46	0.66	4.32	0.80	4.45	0.75	4.42	0.75
VAR 24	20	4.46	0.66	4.32	0.88	4.44	0.75	4.41	0.78
VAR 25	20	4.25	0.77	4.43	0.77	4.49	0.75	4.45	0.76

APPENDIX K

Students in clothing laboratory working with the self-instructional manual

Sample of students working with the self-instructional manual

Federal University of Agriculture Makurdi students working in the clothing lab

Nasarawa state university students working in the clothing lab

Kogi State University students working in the clothing laboratory.

APPENDIX L

PRACTICAL SKILL TEST ITEM- ASSESSMENT ANSWER SHEET

NAME OF INSTITUTION.....

.....

Instruction: Answer all the questions-shade the alphabet of your choice in the answer sheet.

1	**A**	**B**	**C**	**D**	**E**		**26**	**A**	**B**	**C**	**D**	**E**
2	**A**	**B**	**C**	**D**	**E**		**27**	**A**	**B**	**C**	**D**	**E**
3	**A**	**B**	**C**	**D**	**E**		**28**	**A**	**B**	**C**	**D**	**E**
4	**A**	**B**	**C**	**D**	**E**		**29**	**A**	**B**	**C**	**D**	**E**
5	**A**	**B**	**C**	**D**	**E**		**30**	**A**	**B**	**C**	**D**	**E**
6	**A**	**B**	**C**	**D**	**E**		**31**	**A**	**B**	**C**	**D**	**E**
7	**A**	**B**	**C**	**D**	**E**		**32**	**A**	**B**	**C**	**D**	**E**
8	**A**	**B**	**C**	**D**	**E**		**33**	**A**	**B**	**C**	**D**	**E**
9	**A**	**B**	**C**	**D**	**E**		**34**	**A**	**B**	**C**	**D**	**E**
10	**A**	**B**	**C**	**D**	**E**		**35**	**A**	**B**	**C**	**D**	**E**
11	**A**	**B**	**C**	**D**	**E**		**36**	**A**	**B**	**C**	**D**	**E**
12	**A**	**B**	**C**	**D**	**E**		**37**	**A**	**B**	**C**	**D**	**E**
13	**A**	**B**	**C**	**D**	**E**		**38**	**A**	**B**	**C**	**D**	**E**
14	**A**	**B**	**C**	**D**	**E**		**39**	**A**	**B**	**C**	**D**	**E**
15	**A**	**B**	**C**	**D**	**E**		**40**	**A**	**B**	**C**	**D**	**E**
16	**A**	**B**	**C**	**D**	**E**		**41**	**A**	**B**	**C**	**D**	**E**
17	**A**	**B**	**C**	**D**	**E**		**42**	**A**	**B**	**C**	**D**	**E**
18	**A**	**B**	**C**	**D**	**E**		**43**	**A**	**B**	**C**	**D**	**E**
19	**A**	**B**	**C**	**D**	**E**		**44**	**A**	**B**	**C**	**D**	**E**
20	**A**	**B**	**C**	**D**	**E**		**45**	**A**	**B**	**C**	**D**	**E**
21	**A**	**B**	**C**	**D**	**E**		**46**	**A**	**B**	**C**	**D**	**E**
22	**A**	**B**	**C**	**D**	**E**		**47**	**A**	**B**	**C**	**D**	**E**
23	**A**	**B**	**C**	**D**	**E**		**48**	**A**	**B**	**C**	**D**	**E**
24	**A**	**B**	**C**	**D**	**E**		**49**	**A**	**B**	**C**	**D**	**E**
25	**A**	**B**	**C**	**D**	**E**		**50**	**A**	**B**	**C**	**D**	**E**

APPENDIX M

PRACTICAL SKILL PRE-TEST ITEM RAW SCORE

S/N	NSUK score	KSU score	FUA score	S/N	NSUK score	KSU score	FUA score
1	23	24	23	26	22	30	24
2	22	25	23	27	25	31	25
3	24	28	22	28	24	28	28
4	23	21	22	29	23	23	21
5	23	22	22	30	23	22	22
6	23	22	21	31	23	23	22
7	22	22	21	32	24	23	22
8	22	22	28	33	22	22	22
9	22	24	24	34	22	22	24
10	21	24	25	35	22	22	24
11	21	28	28	36	24	21	28
12	24	28	21	37	25	21	28
3	25	26	22	38	28	26	26
14	28	22	22	39	21	24	23
15	21	22	22	40	22	25	23
16	22	22	22	41	22	28	22
17	22	22	24	42	22	21	22
18	22	23	24	43	22	22	22
19	22	24	28	44	24	22	21
20	24	24	28	45	24	22	21
21	24	22	26	46	28	22	28
22	23	22	24	47	28	24	30
23	26	22	23	48	26	24	28
24	26	22	23	49	22	28	28
25	24	26	23	50	24	28	26

APPENDIX N

PRACTICAL SKILL POST-TEST ITEM RAW SCORE

S/N	NSUK score	KSU score	FUA score	S/N	NSUK score	KSU score	FUA score
1	42	32	40	26	42	42	39
2	42	32	40	27	40	38	38
3	38	36	40	28	39	36	38
4	36	50	43	29	38	36	34
5	36	50	43	30	34	36	40
6	36	40	40	31	32	34	42
7	34	43	42	32	32	38	38
8	38	43	38	33	36	40	36
9	41	43	36	34	50	40	36
10	40	45	36	35	50	40	36
11	38	46	36	36	40	32	34
12	40	42	34	37	43	32	38
3	40	38	38	38	43	36	50
14	46	36	49	39	43	50	50
15	48	36	32	40	45	50	50
16	48	36	32	41	46	40	32
17	48	34	36	42	45	43	32
18	46	38	50	43	44	43	36
19	38	42	50	44	44	43	50
20	38	38	40	45	42	45	50
21	36	38	43	46	39	46	40
22	36	36	43	47	39	42	43
23	36	36	43	48	50	41	43
24	36	36	45	49	50	40	43
25	40	48	46	50	47	42	45