ASSESMENT ON THE USAGE OF 'REAL' FABRIC DRAPING FOR DESIGN IN PUBLIC INSTITUTIONS OF HIGHER LEARNING AND BY FASHION DESIGNERS IN NAIROBI COUNTY, KENYA

By

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H87/23028/2011

A THESIS SUBMITTED IN FULFILMENT OF REQUIREMENS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE SCHOOL OF APPLIED HUMAN SCIENCES OF KENYATTA UNIVERSITY

NOVEMBER, 2014

DECLARATION

This thesis is my original work and has not been presented for a degree in any other university or any other award.

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In memory of my late Brother Maurice Mwendwa Isika for his unwavering love and commitment towards his siblings. I am forever thankful for his endowment of my 1st 'electric sewing machine'.

ACKNOWLEDGEMENT

I am highly indebted and grateful to my university supervisors Prof. Keren G. Mburugu, Dr. Everlyn K. Nguku and Prof. John A. Obere. Their scholarly guidance, thoughtfulness and patience throughout this project is invaluable, may you have Gods favor always. I appreciate the support from Kenyatta University and National Commission of Science, Technology and Innovation (NACOSTI), without which this study would not have been successful. I express my appreciation to the research assistants, all Heads of departments, teachers, students and fashion designers who facilitated in the filling out of the questionnaire and interview schedule.

Special gratitude goes to my supportive and loving husband Wycliffe Kivunira, for his unlimited moral and financial support. Grateful towards our children Audrey, Jed and Jaden for trying to understand the importance of Moms work. I am deeply appreciative to my selfless parents Martin and Mary Isika for their prayers. To my siblings Michael, Maureen and Angela: thank you for your unwavering encouragement and support. I am indebted to my sister Susan for her personal sacrifice in my life. My heartfelt gratitude goes to my colleges, friends and any other individual for their priceless support.

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ABSTRACT

‘Real’ fabric draping involves use of sample textile, fabric or cloth to make patterns or garments on a model or dress form stands manually. Final material used to produce garments has similar characteristic to one used to drape. Technique is suitable for ready to wear and couture garment designs with numerous advantages. These are such as satisfaction with garment fit, accurate proportions of fabric division and reduced time waste as pattern making technique. Numerous studies in Kenya have been carried out to investigate Home science. However, there is limited ongoing research or documentation on ‘real’ fabric draping for design in Kenya. These demands for a study to assess the usage in ‘real’ fabric draping for design in public institutions of higher learning and fashion designers in Nairobi County, Kenya. Specific objectives included: Identifying competencies of fashion design teachers, determine the usage of ‘real’ fabric draping for design in public institutions of higher learning and among fashion designers, establish the influence of learning resources. Determine the relationship between use of ‘real’ fabric draping for design and teachers’ area of training, source of curriculum, garment categories created, pattern development taught and student’s attitude. The study was guided by the Activity theory and pedagogic activity system structure. A cross-sectional survey research design was employed. Five public institutions of higher learning were purposively selected in Nairobi County namely: Kenyatta University, Technical University of Kenya, Kenya Technical Teachers College, Kenya Textile Training Institute and Nairobi Technical Training Institute. The sample size comprised of five heads of department, 32 teachers, 266 students and 30 fashion designers. The data was collected using questionnaires and interview schedules. Both qualitative and quantitative data analyses were used. The results revealed that very few public institutions of higher learning using ‘real’ fabric draping for design. Majority of the teachers (respondents) in this study were not trained in the area of fashion design. Most of the fashion designers used ‘real’ fabric draping for design and recommended all fashion design students to be taught. The absence of body forms, draping manuals posed a challenge learning ‘real’ fabric draping for design. Chi-square results yielded a fairly strong relationship between use of ‘real’ fabric draping for design and pattern development technique taught (V= 0 .646; $p < 0.0001$*), sources of curriculum (V= 0.623; $p < 0.0001$*). Use of ‘real’ fabric draping for design had a weak association with teachers’ area of training (V = 0. 018; $p <$ 0.006. It was concluded that pattern development technique taught, sources of curriculum and teachers’ area of training are issues associated with the use of ‘real’ fabric draping for design in public institutions of higher learning. On the contrary availability of learning resources and students’ attitude were issues not associated with the use of ‘real’ fabric draping for design. It was recommended that a need assessment research should be carried out in institutions teaching fashion design courses. This would establish the technological gaps in fashion design curricula in Kenya hence would reduce the inconsistency in skills acquisition.

OPERATIONAL DEFINITIONS OF TERMS

This section provides definition of terms as they have been used in this study.

Academic background – this is the educational history of an individual with regards to formal training and certificates attained. This was obtained by asking the respondents to indicate the highest level of academic qualification attained.

Attitude – this is a person's mind –set**.** It is perceived to be closely linked to beliefs, perception and motivation that shape ones behavior towards learning. Statement related to use of 'real' fabric draping for design bearing positive and negative value were used as indicators in a five gradation Likert scale.

Fashion design practices - this is the sequence of techniques applied in the creating garments for humans. The teachers were asked to tick among the practices listed which ones they utilized when teaching fashion design courses in public institutions of higher Learning.

Fashion design student – this is an individual undertaking training in apparel design or clothing technology in a public institution of higher learning with the aim of attaining a certificate and proficiency in fashion design.

Fashion design teacher – this is an educator or lecturer in apparel design or clothing technology in public institutions of higher learning imparting knowledge to create different apparel styles.

Fashion designer – this is an individual who holds an official document (certificate) in fashion design or clothing production and is actively involved in production of different types of garments and accessories for the clients.

Fashion design course – this is specialized learning related to aspects of garment making procedures to prepare the learners for entry into an occupation. In this study this is refered to as training, retraining or upgrading of skills at public institution of higher learning at diploma, higher diploma or degree level.

Learning resources – is the investment needed for knowledge acquisition by learners. They include human and physical resources related to the learning capital investments indicators. Equipment, tools and materials learners use were itemized as indicators in a five point - continuum Likert scale.

Learning conditions – these are the actual surroundings and learning atmosphere of the fashion design students in public institution of higher learning. They included lighting, ventilation, furniture and blackboard/ flip chart.

Public Institutions of higher learning – are organizations run by the government that offer individuals an opportunity to study beyond the level of secondary education. This comprised of universities, institutes of technology, technical training institutes and teacher-training colleges that offer apparel design or clothing technology education. The students attain degrees or diplomas at end of the prescribed course of study.

'Real' fabric draping – involves use of sample material or cloth used to make patterns or garments with similar characteristic to the final material that will used to produce the actual garments. Technique is suitable for ready to wear and couture garment designs.

'Real' fabric draping for design – technique used to make patterns or garments on a dress form. The process involves positioning and pinning fabric on a dress form by smoothing, contouring and manipulation to create the garment design structure or pattern.

Semi couture – this is apparel design that allows customers to obtain semi-fitted apparel at lower cost than couture designs done for an exclusively upper end and luxury fashion.

Usage of 'real' fabric draping for design – this is the practice of draping fabric on a dressmakers body form to produce patterns or garments by novice or professional fashion designers. The respondents were asked to indicate if they used or did not use 'real' fabric draping for design

ABBREVIATIONS AND ACRONYMS

AFAD	Association of Fashion Designers
CAD	Computer Aided Design
CHE	Commission of Higher Learning
CUE	Commission of University Education
GOK	Government of Kenya
JAB	Joint Admissions Board
KCSE	Kenya Certificate of Secondary Education
KICD	Kenya Institute of Curriculum Development
KIE	Kenya Institute of Education
KNBS	Kenya National Bureau of Statistics
KPUC	Kenya Polytechnic University College
KTTC	Kenya Technical Teachers College
KTTI	Kenya Textile Training Institute
KU	Kenyatta University
MOYAS	Ministry of Youth and Sports
MPET	Master Plan of Education and Training
NACOSTI	National Commission of Science Technology and Innovation
NITA	National Industrial Training Authority
NTTI	Nairobi Technical Training Institute
SPSS	Statistical Package for Social Sciences
TIVET	Technical Industrial, Vocational and Entrepreneurship Training
UNIDO	United Nations Industrial Development Organization
USA	United States of America

CHAPTER ONE: INTRODUCTION

1.1. Background to the Study

Throughout human history fashion and textiles have been enormously important, so have their materials, production tools and techniques, social significance and cultural influences. Fashion design is an artistic and functional industry that helps to clothe people while incorporating style. Fashion design goes beyond just a designer thinking of a garment, sketching it and then sewing it together. There are three techniques used between the design concept phases (when the design sketch is made) and the construction or sewing of the garment. These are flat pattern making, draping design and CAD technique (Pierce, 2010).

Clothing as any covering used for the human body. The wearing of clothing is exclusively a human characteristic and is a feature of most human societies. Vanderhoff (1981), states that the amount and type of clothing worn depends on functional considerations and social considerations. There are three basic ways clothes are made that classify garments into draped or fitted clothes and those that are a combination of the two methods. Draped clothes have luscious fabric looped and laid in places you require it to camouflage abdomen imperfections, draped dramatically to show one's décolletage or side-swept to pull away the eye from areas beyond our control.

According to Webster's New World College Dictionary (2010), draping is a transitive verb meaning to cover, hang, or decorate with cloth or clothes in loose folds or to arrange (a garment, cloth, etc.) artistically in folds or hangings. Designers (2011) documents that, fashion draping is an important part of fashion design. Draping for fashion design is the process of positioning and pinning fabric on a dress form to

develop the structure of a garment design. A garment can be draped using a design sketch as a basis, or a fashion designer can play with the way fabric falls to create new designs at the start of the apparel design process. After draping, the fabric is removed from the dress form and used to create the sewing pattern for the garment. This clearly depicts that draping requires a certain set of skills. Not all good designers can drape well, as such fashion designers therefore need to be trained in this art.

Cultural traditions are very important in style of clothing. Fashion designers are inspired by many cultures around the world and this is reflected in the clothing styles they generate for their consumers. Although draping is often associated with ancient times and places, it is heavily used in more modern fashion. A drape effect will appear in evening gowns, skirts, dresses, shirts or even shoes. Chiffons, satins and silks are quite frequently utilized in drape-style clothing. For example, in the 2010 collections, contemporary designers such Haider Arkerman, Alexandra McQueens and Dries Van Noten used fabric draping for design proving that this age-old art can be re-explored infinitely. This is solid proof that different aspects of cultural traditions such as 'real' fabric draping for design should be incorporated into modern day dress. Many of the modern garments have through the years reflected the characteristics of the first draped garments. It is possible to see true draping of ancient times or designs which appear to be draped, in ponchos, caftans, capes, saris or sarongs.

Ministry of State for Planning, National Development and Vision 2030 (Government of Kenya, 2010), documents that working age population is defined as 15-64 years of age are 19.7 million or about 51 percent of the population as per 2009 population Census. However due to high levels of unemployment, most of them have not been absorbed in the job market (MOYAS, 2011). The government further observes that there exists a

mismatch between demand and supply in the labour market. Problems in education and training where many youth are failed by limited access to the relevance of the education system may be solved by adapting vocational and technical training system suitable to labor market and create links between training institutes and industry (Munavu, Ogutu and Wasanga, 2008). This literature brings to light challenges facing the youth in the education system in Kenya.

Kang'a (1994), found that with the rush and eagerness to get white collar jobs, Home Science and other technical subjects lost the emphasis they had during the colonial times. Therefore, by 1970 unemployment was becoming a great problem in Kenya. There was a call by educationists to include industrial skills in the curriculum so that learners could become self – reliant on leaving school. However, for a long time Home Science could be pursued at the University only if one wanted to be a Home Science teacher and singling out Clothing and Textile.

Over the past decades, the number of students enrolled at various levels of education in institutions of higher learning has substantially increased. This has not been the case in clothing design or textile related courses. Curriculum development and articulation in these courses is therefore vital. Munavu *et al.* (2008) noted that whereas the curriculum development process at the Kenya Institute of Curriculum Development (KICD) involves most stakeholders including higher learning institutions, the curriculum in universities is developed by individual universities. Serem (2010), recognized that problems associated with the learning and teaching can be detrimental to any subject. Problems may be due to an environment which is not conducive, the amount of time given against the topics and practical to be covered, lack of learning materials, and

unclear usefulness of the unit. This literature highlights the observable facts in practical subjects and will be investigated in this study.

Kavilu (1990), Karimi (1992), Racho (2000) and Telewa (2004), studies reveal that the major constraints faced by Home Science teachers include: inadequate teaching resources, limited time allocated for teaching Home Science, no induction course, wide curriculum (scope) and large classes. Kang'a (1994), further noted that teachers lacked relevant training in the teaching and assessment of practical sessions. This could have a negative impact in learning and examining of practical courses such as 'real' fabric draping. The Home Science students on the other hand according to Kang'a (1994), were facing major constraints that include: inadequate teaching resources, large classes, limited time and facilities. Kobia (1991), documents that boys were not aware of the future careers in Home Science.

The documented literature shows tendencies that could negatively impact fashion design courses as a practical oriented course. This research observes that institutions of higher learning that teach fashion design and practicing fashion designers in Kenya use various garment design techniques. Many issues may influence the use of 'real' fabric draping for design and were therefore investigated in this study.

1.2. Problem Statement

In today's fast, inter-related and versatile economy, employers are looking for productive employees who are quick, creative, flexible and up-to-date in new technology. Employees with these qualities can keep up with changing systems and techniques in the workplace (World Bank, 1999). These observations include technology: production tools and techniques taught and used within the apparel industry.

Dumridhammaporn, Jatuphatwarodom, Punyopat, Chonsakorn (2012), found that 'real' fabric draping for design had advantages such as satisfaction with garment fit, accurate proportions of fabric division and reduced time waste as pattern making technique.

However, until recently, little of practical use has been published on the art of draping beyond introductions of the basics, leaving the craft to become a skill passed on from master to apprentice, just like tailoring (Lindqvist, 2013). Many contemporary designers such as Alexandra McQueen's in his 2010 collections used 'real' fabric draping for design proving that an age-old art can be re-explored infinitely.

The clothing and textile industry is a field which is under-researched and under-represented academically (Boulanger, 2003). Moreover, it appears there is limited ongoing research on 'real' fabric draping for design, recording or preservation in the world. In Kenya, there is inadequate documentation, literature and research done in the area of 'real' fabric draping for design and its use. Very scanty literature directly related to learning 'real' fabric draping for design is available. This is mainly because hardly has any research been done with regard to the use of 'real' fabric draping for design in the current 8-4-4 system of education. The study therefore filled these gaps.

The changes call for investigation on the use of 'real' fabric draping for design as a basic pattern making or fashionable pattern making in any styles in fashion design courses and among fashion designers in Kenya. The study therefore filled this gap in research and information in this area. The findings have been used to form basis to argue for the case of 'real' fabric in public institutions of higher learning and fashion designers in Nairobi County.

1.3. Purpose of the Study

The purpose of this study was to assess the use of 'real' fabric draping for design in public institutions of higher learning and among fashion designers in Nairobi County.

1.4. Objectives of the Study

The study addressed the following specific objectives:

1. Identify competencies of fashion design teachers in public institutions of higher learning.
2. Determine the usage of 'real' fabric draping for design in public institutions of higher learning.
3. Determine the usage of 'real' fabric draping for design among fashion designers.
4. Establish the influence of learning resources and facilities on the use of 'real' fabric draping for design.
5. Assess the relationship between use of 'real' fabric draping for design and teachers' area of training, source of curriculum, garment categories created and pattern development techniques taught.
6. Evaluate the relationship between the students' attitude and the use of 'real' fabric draping for design in public institutions of higher learning.

1.5. Null Hypotheses

The study tested the following hypotheses:

1. H_{O1} Teachers' area of training is independent of the use of 'real' fabric draping for design in public institutions of higher learning.
2. H_{O2} Source of curriculum is independent of the use of 'real' fabric draping for design in public institutions of higher learning

3. H_{O3} Pattern development techniques taught is independent of the use of 'real' fabric draping for design in public institutions of higher learning.
4. H_{O4} Availability of learning resources and facilities is independent of the use of 'real' fabric draping for design in public institutions of higher learning.
5. H_{O5} Students' attitude is independent of the use of 'real' fabric draping for design in public institutions of higher learning.

1.6. Significance of the Study

An instruction booklet on "Training Guidelines on 'Real' Fabric Draping for Design" will be development. This will add to the limited inventory of literature available for fashion design students. It was hoped it will be used as a teaching aid and act as reference material for all trainers and trainees in the fashion design industry.

The study contributes to the existing field knowledge of fashion design by documentation of 'real' fabric draping for design. It will also highlight any concerns or issues that may jeopardize the use of 'real' fabric draping for design. It also generated useful information for the fashion institutions on resources that are relevant for 'real' fabric draping to be implemented. Therefore the results from the study can be used for decision making with regards to the phenomenon under study.

The training workshops scheduled for fashion design students will increase the students' knowledge on 'real' fabric draping for design. The interaction with professional fashion designers who use the technique may generate more interest in 'real' fabric draping for design. Thus, venturing into 'real' fabric draping for design may result in less fit and creative design for consumers.

The findings of this study are expected to act as base line data, for other related researches in the area of fashion design. The findings are expected to contribute to the existing field of knowledge in fashion design. Information gathered from this study will be communicated to the Ministry of Higher Learning Science and Technology for implementation.

1.7. Delimitation of the Study

The study was confined to assessing issues related to the use of 'real' fabric draping for design in public institutions of higher learning and among fashion designers within Nairobi County.

1.8. Limitations of the Study

1. There were methodological limitation since fashion apparel trends change very rapidly and students have a fixed period within which they must complete the learning process.
2. The findings of this study were confined to investigating those respondents who were involved in the practice or training in apparel design as information sought was unique to the apparel, garment or clothing design development.
3. Due to financial and time constraints limitations the study was only carried out in Nairobi County.

1.9. Assumptions of the Study

This study was based on the following assumptions:

1. The study assumed that the selected institutions of higher learning have teachers and students who learn aspects of 'real' fabric draping for design and would provide the information required.
2. The fashion designers in Nairobi County were assumed to be utilizing 'real' fabric draping for design in pattern development or garment design.

1.10. Theoretical Framework

The study was based on the Activity Theory developed by Kaptelinin, Kuutti & Bannon (1995). The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in the development of cognition (UNESCO, 2002). The pedagogic activity system structure by Robertson (2008) was used to explain the usage of 'real' fabric draping for design in public institutions of higher learning and among fashion designers. The Activity Theory is more of a descriptive framework than a predictive theory. It considers an entire activity system by groups and institutions involved beyond just one user. It accounts for the environment, history of the person, culture, role of the artifact, motivations and complexity of real life action (Kaptelinin, *et.al.*, 1995).

According to Serem (2010), problems associated with the learning and teaching can be detrimental to any subject. The theory was therefore used to account for the various elements in the pedagogic activity system such as: teachers' competencies, learning resources and conditions, student's attitude, source of curriculum and pattern making techniques among others. The proposed theory was useful in examining contradictions in the research to assess the usage of 'real' fabric draping for design in public institutions of higher learning and among fashion designers.

1.11. Conceptual Framework

According to Jochems *et.al.* (2004), the activity theory provides a common word list to describe the pedagogic perspectives in terms of subjects, tools, object and outcome, rules, community and division of labour. Mwanza & Engestrom (2003), indicated that a single activity system provides an opportunity to identify tensions and contradictions within it and listed eight questions that need to be addressed when investigating an activity system (Table 1.1).

Table 1.1: Issues to consider when investigating a human learning system

Activity	What sort of activity would I be interested in investigating?
Objective	Why is the activity taking place?
Subjects	Who is involved in carrying out the activity
Tools	By what means are the subjects performing the activity?
Rules and regulations	Are there any cultural norms, rules or regulations governing the performance of the activity?
Division of labour	Who are responsible for what, when carrying out an activity and how are those roles organized?
Community	What is the environment in which this activity is being carried out?
Outcomes	What is the desired outcome from carrying out this activity?

(Source: Mwanza & Engestrom, 2003)

Based on the activity theory, an operational model (Figure: 1.1) was conceptualized for the study by adopting constructs of the human activity system (Table 1.1). The structure of the pedagogical Activity System was modified to conceptualize how students and teachers use 'real' fabric draping for design in public institutions of higher learning and also among fashion designers. The pedagogic activity system represented those with the responsibility for teaching and learning and would desire an outcome in use of 'real'

fabric draping for design. It captured the fundamentals in the activity system necessary for the successful learning in ‘real’ fabric draping for design. This creates an opportunity for constraints experienced to be resolved or addressed.

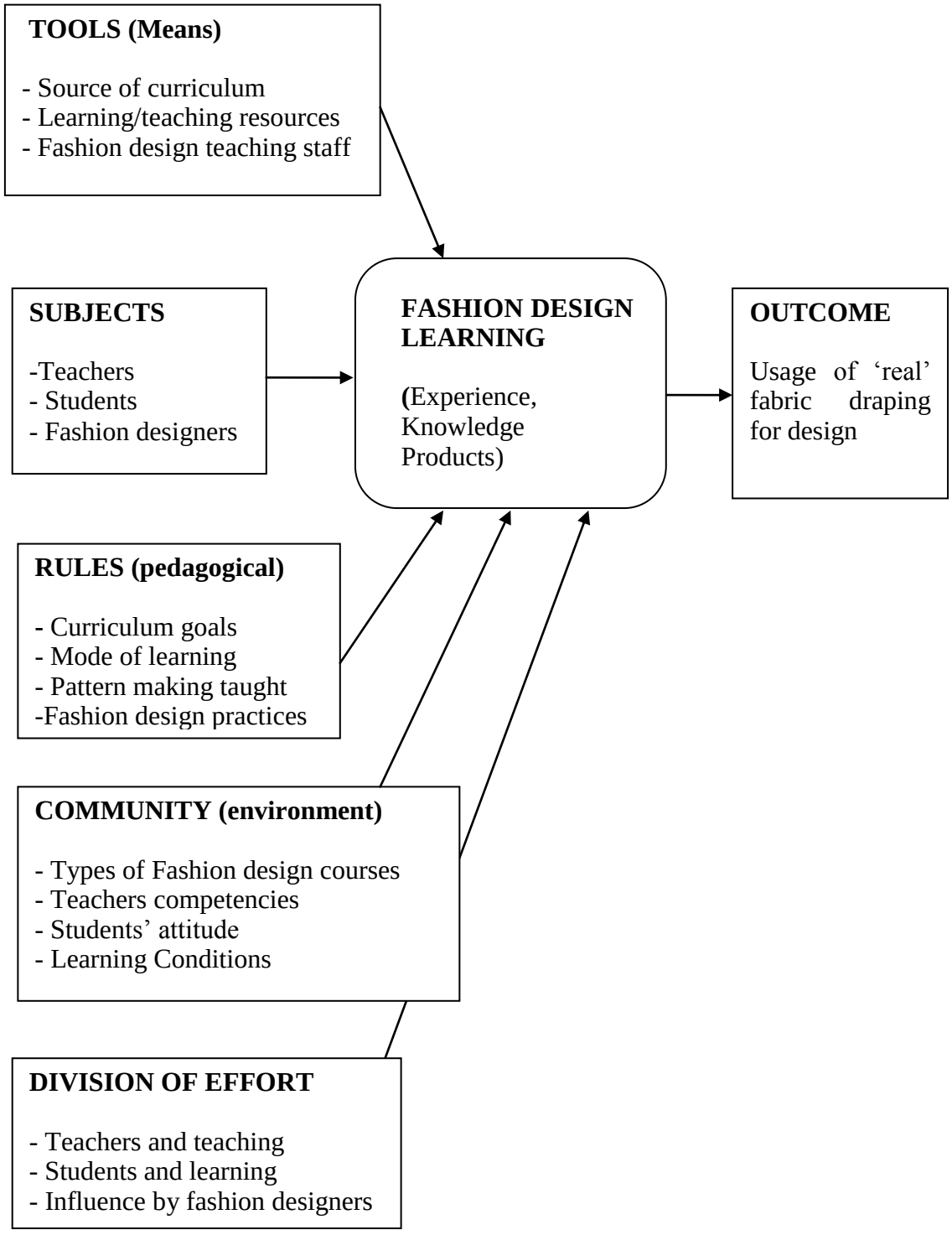

Figure 1.1: Conceptual framework model showing interaction of variables on the usage of 'real' fabric draping for design

Source: Modified from the pedagogic activity system (Robertson, 2008) and Human Activity System (Engestrom, 2001)

In this study some of the constructs were modified to suit the scope of fashion design learning. This is due to the fact that fashion designers as employers may influence the learning process. A wide range of issues impact the pedagogic activity i.e. fashion design learning in order to achieve an outcome. In fashion design learning its necessary to fulfill certain objectives and meet the goal of community i.e. fashion designers, teachers and students obtain experiences, knowledge and garment designs in the use of 'real' fabric draping for design. The environment in which learning occurs is vital for the learning in the system to occur. The teachers' competencies, students' attitudes towards course and learning condition need to be investigated. This would give an indication of what kind of environment learning is taking place.

Tools such as learning/teaching resources, curriculum and fashion design teaching staff used by subjects. They engage in teaching and learning to achieve an outcome in 'real' fabric draping. Fashion designers engage in curriculum development, offer employment or act as guest tutors and may manipulate what is taught or how it is taught. The rules deployed involve fulfilling curriculum outcomes such as mode of learning, pattern making taught and fashion design practices. Tacit rules are the dispositions of teacher competencies and vocational disciplines (fashion design practice) and mode of teaching the learner. There is potential for use of 'real' fabric for design in learning when the objects of the human learning activity systems come into contact. These different issues involved in the use of 'real' fabric draping for design were therefore assessed. Therefore, the Activity Theory and Pedagogic Activity structure constitute the various aspects in the fashion design learning. Therefore, they could assist in understanding the use of 'real' fabric draping for design in public institutions of higher learning and among fashion designers in Kenya.

CHAPTER TWO: LITERATURE REVIEW

2.1. Fashion Design Techniques and Practices

Internationally, famous fashion designers create original products using inspiration from various historical and contemporary sources. Many apparel designers develop new products of various types in accordance with the trends set by the leading international designers (Friggs, 2008). Style is one of the most important aspects in garment design. Fashion design involves the designer thinking of a garment, sketching it and then sewing it together. There are three techniques core to realization of the design concept and finally construction of the garment design. These methods are flat pattern making, draping design and CAD technique (Pierce, 2010). According to Stanley (1991), modern students of dress design and pattern making have one fervent wish which is to translate their designs as speedily as possible into finished garments. This desire is further fuelled by the fashion design industry with large turnover of styles every year. The prospective fashion designer must be artistically creative and understand technical aspects design. Fashion design is highly competitive and the more prepared the aspiring designers are, they broaden their opportunities.

Friggs (2008), documented that draping is done by cutting and shaping the muslin or garment fabric on a dress forms to create a pattern. The designer sees the proportions and lines of the design exactly as they will look on a human like figure (body form). Draping is ideal for soft, flowing designs. The method is mainly used for producing couture dresses and evening wear. In flat pattern design however, basic patterns of bodices, sleeves, pants, or skirts are draped or drafted. The flat pattern method uses angles, rulers and curves to change existing board patterns. In computer aided design systems have small graphic patterns that are manipulated on the computer screen by the

pattern maker. The use of geometry drivers makes infinite number of changes to the shapes and sizes of the patterns. The large quantity of styles produced in the fashion industry demands from today's designer and pattern cutter a great degree of versatility and knowledge of pattern making (Stanley, 1991). Kamau (2012), found that fashion design students felt that the training they received in apparel CAD did not prepare them adequately to undertake CAD-related jobs in the apparel industry.

Pierce (2010), noted that pattern making, draping design and CAD techniques are critical to the fashion designer's concept being made into a garment. Each of these techniques serves the purpose of creating a style pattern that can be used to construct the designer's concept. It is important to remember that without using one of these techniques, it is almost impossible for a new fashion design concept to be made into a wearable garment. Friggs (2008), noted that a good pattern maker must learn how to drape a pattern on a dress form, draft perfect flat patterns and create patterns by computer. This is because their first job placement may be as a sample cutter or pattern grader. Rissanen (2005), documented eight fashion design practices (Appendix X), three of which utilized 'real' fabric draping for design (Table 2.1).

Table 2.1: Fashion design practices that utilize 'real' fabric draping

Sketch – Draping – Pattern –Toile – (Design alteration) – Pattern alteration - Sample garment
Draping – Pattern –Toile – (Design alteration) – Pattern alteration - Sample garment
Textile print on paper – Draping Textile/paper on bodyform – (Sketch) - Pattern – Toile – (Design alteration) – Pattern alteration – Sample

Dumridhammaporn, *et.al.* (2012), found several advantages of using 'real' fabric draping. The first was that pattern making by draping technique reduced time waste as

pattern making technique. Secondly, draping was more accurate in getting the right proportion to the cloth design than flat pattern making technique. Thirdly, patterns made on the mannequin while working on the task (3 dimensions) could be clearly seen by the pattern makers and corrected immediately within one time. Lastly, result collected by surveying the models' satisfaction indicated that they preferred the samples made from draping pattern making to flat pattern making techniques. Based on the arguments of the reviewed literature, there is need to establish the use of 'real' fabric draping for design by fashion design students and designers given the above listed advantages and the feeling of incompetence.

2.2. Garment Design by Draping

Vanderhoff (1981), states that basic ways in which clothes are made classify them into draped, fitted clothes and those that are a combination of the two methods. Draped clothes have luscious fabric looped and laid in places. One requires it to camouflage imperfections, draped dramatically to show one's décolletage or side-swept to pull away the eye from areas beyond our control. Drapery is best done on a live body or a dress form, which certainly was available to the 1880's dressmakers. Advertisements for dress forms made of wire (some of them folded up like an umbrella) were common and persuasive by the late 1880's. Draping in fabric on the dress form is a method used to create three dimensional models that will ultimately be developed into a collection of finished sample garments (mostly in muslin).

Until recently, little of practical use has been published on the art of draping beyond introductions of the basics, leaving the craft to become a skill passed on from master to apprentice, just like tailoring (Lindqvist, 2013). Draping requires the use of a dress form and cheap fabric that closely resembles the fabric of the finished garment. Fashion

designing using the draping technique is the smoothing, contouring and manipulation of fabric on a dress form to create a garment or pattern (Pierce, 2010). When designing garments by draping, a fashion designer will loosely hangs the material over and around a dress form. Bias tape may be used to guide the draping fabric to the intended design. The advantage of garment design by draping is that the designer sees how the design will look on the body before it is made up. The designers will first mark the seams and style seams. Then drape using cheap draping fabric that resembles the actual fabric to be used during construction. The garment pieces are then cut from the fabric to create a cloth pattern for sewing the final garment. Fashion designers who are skilled drapers create designs on the dress form in the final fabric and construct it as they drape. Draping, being one of the oldest methods used to generate patterns was investigated and documented in this study.

Pierce (2010), documents that draping has been a key component in fashion design for centuries. In fact, it's probably most closely associated with ancient times, and more specifically ancient Greece and ancient Rome. The toga is probably draping most popular example of the style. Although draping is often associated with ancient times and places, draping is heavily used in more modern fashion. Several designers may use similar fashion design ideas because they have been inspired by a common source. The trend may appear in a new unique fabrication, silhouette, or design element that appears in multiple collections (Friggs, 2008). Draped garments could be one-piece garments such as kangas, loincloths, togas, kilts, saris and sarongs. Figure 2.1, illustrates the use of ‘real’ fabric draping for pattern making. Yang and Yu (2002), pointed out that short product life cycle, powerful customer demands, and knowledge management were the keys to developing new products. There is need to establish whether fashion design students are imparted with knowledge in ‘real’ fabric draping for design to be enable

them meet customer demands or be innovative. Moreover, draping skills are acquired with patience and practice over a period of time (Crawford, 1989).

Figure 2.1: Pattern development by ‘real’ fabric draping for design

Source: www.thedreamstress.com

Kirke (1998), states that draping can also be a way of exploring the potential of a fabric on the body; therefore it can initiate the design idea. For example, Madeleine Vionnet , a French designer of the twentieth century developed garment design ideas exclusively through draping on a half-scale mannequin. Anicet, Cunha & Broega (2012), documented that draping technique also referred as *moulage*, opens a vast field of possibilities in the creation of new products giving room to total innovation and differentiation of patterns. The advantages can be even more significant if this technique is applied to the development of customized and differentiated female clothing products.

Figure 2.2 shows one of fashion's best design trends to enter. The current style scene is characterized by elements of draping, an ancient design tool of design being incorporated into modern style (Ikissa, 2010).

Figure 2.2: Summer 2010 Trend theme draped

Source: Art of Draping: Posted by Louise Ikissa in Fashion News Jan 24th 2010

2.3. Skills in Training for Fashion Design Students

Essential matters for apparel designers are the ability to apply materials and professional training. These traits in a fashion designer can be achieved through professional training. It is evident therefore that specialized techniques are crucial for an outstanding apparel designer. Production time and sewing skills are seen as being of more relevance to production and not the key skills for an apparel designer. Based on these arguments, this study seeks to establish whether fashion design students and teachers and fashion designers learn new concepts and skills. Therefore for one to be successful in the field of designing one must continuously learn.

The skills in training for fashion and textiles students should lead to employability and job creation for its graduates (Kamau, Wamutitu & Mbugua, 2013). Apparel design courses are increasingly offered at different institutions of higher learning in Kenya. The lowest grade is artisan level examined by the National Industrial training Authority (NITA) craft and diploma examined by the Kenya National Examination Council (KNEC) and Bachelors' degree, master's level and doctorate degrees offered by the universities (Kamau, 2012). These institutions offer courses in apparel design for those who qualify with secondary or post-secondary education. National Polytechnics, Institutes of Technology and Technical Training Institutes also admit trainees for apparel design courses. According to Utz (2006), there are four pillars of a knowledge economy, towards which a country can align educational strategy. The education pillar denotes that an educated workforce should be developed that can use knowledge effectively. The innovation pillar should ensure that global knowledge diffuses into the nations and adapts it for local use and creates new local knowledge. The study established whether skills taught in the public institutions of higher learning have been strategically planned to lead to economic benefits locally by creating employment.

2.4. Attitude in the Learning Process by Teachers and Students

Hussain (2004), noted that education is conceived as a powerful agent, instrumental in bringing about the desired changes in the social and cultural life of a nation. The whole process of education is shaped and molded by the human personality called the teacher, who plays a pivotal role in any system of education. The preparation of any teachers' functionary must conceivably get the highest priority. Teachers are expected to use the best practices and strategies to meet constraints and demands of their career. Educators therefore have a duty to prepare students so that they are familiar with the technologies they will encounter at the work set up. Teachers' beliefs and assumptions about the

nature of knowledge, disciplinary norms, and how students learn affect the choice and use of technology for teaching (Gibbs & Gosper, 2006). Skill Fast UK (2006) , study on skill needs assessment for apparel sector found that, in Northern Ireland a gap existed in core technical skills and knowledge amongst designers and garment technologists due to changes in technology and lack of investment in staff training. According to MOEST (2004) there is low morale among the technical teachers and curriculum developers. There is lack of staff development opportunities for curriculum implementers. If the teachers are well trained and highly motivated, learning will be enhanced.

Davide (2001), documents that teaching profession demands clear set goals, love for profession and obviously a more favorable attitude towards the profession. A teacher's job is to provide the students with information, example and guidance that they need to build understanding on their own. Ideally, they would recognize how this is done and will be able to carry it on later in their lives after they have left college. Muthui (1981), argues that Clothing and Textiles curriculum lacks clearly defined objectives so that the performance standards demanded for coursework are too high although it is allocated too few marks in relation to the work and time involved. According to Workman (2011), the student attitudes on learning determine their ability and willingness to learn. If negative attitudes are not altered, a student is unlikely to continue his education beyond what is required.

According to GOK (2002), there is no feedback from the employees to training institutions leading to a supply driven training skewed in favor of technologists. The technical graduates lack hands on experience and have poor work attitude and are inflexible to change. The GOK (1998) education report, advocated for a new paradigm that will address flexibility innovations and productivity. The report advocated for

acquisition of required skills addressing the implications or changing labour market. Koech (1999) further argues that the perception of technical and vocational education and training being of less value than other occupations persists to this day in Kenya because individuals with technical and vocational education and training (TIVET) qualifications tend to earn less than others with the same length of training at comparable levels. Based on the reviewed literature, it is clear that psychological factors, interaction between students and teachers can be detrimental to the learning processes. The curriculum objective in teaching 'real' fabric draping for design was also investigated.

2.5. The Scenario of Fashion Design Learning in Kenya

Human capital is acquired in many different ways, but it is largely acquired through formal education. Studies have shown that labor productivity is dependent on the level of education and or training by an individual (ESAURP, 1993). Higher education institutions have the main responsibility for training a country's professional personnel including technicians. Such institutions create knowledge through research and advanced training and serve as a conduct for its transfer, adaptation and dissemination (MOEST, 2004).

Education is obviously central to development of any people and its nation. The provision of education and training to all Kenyans is fundamental to Governments overall development strategy (GOK, 2004). The education and training sector is expected to play a key role in enhancing labour productivity and improving the skills of those in production. Although a diversity of technology is used in Kenya's apparel industry, little documentation has been done. It is therefore difficult to identify the level of technology or technical requirements in the industry (ILO, 2000). This is especially so

for the labour intensive industries such as the fashion and design. GOK (1998), documents that the most obvious manifestation of the mismatch between formal learning in institution and economic opportunities in society is the large number of graduates of the education and training system who have not been able to find employment in the formal sector of the economy.

The government has observed that there exists a mismatch between demand and supply in the labour market. If the economy fails to provide jobs and other income-generating opportunities at a rate equal to (or higher than) young people coming into the employment market; i.e. supply must meet the demand of employment. If no employment (or learning and training) opportunities are created, youth is likely to drift into crime, and anti-social behavior including violence, alcoholism and drug abuse (GOK, 2010). Githagui and Francis (2005) pointed out that, Kenya has a relatively low labour force participation rates both for young people aged 15 to 24 and adults aged 25 to 54. According to Kinuthia (2010), keeping abreast with the recent technology translates to ready response to constant fashion changes as the industry is characterized by uncertainty. The fashion designers may find it difficult to anticipate opportunities that can be strategically exploited due to fast technological changes. This scenario is perpetuated by training structures that are deficient, hence unable to adequately prepare learners for a dynamic or changing labour market.

The Kenya Vision 2030, First Medium Term Plan 2008-2012 identified human resource development as a critical foundation for national social and economic transformation (GOK, 2007). However El-Namaki (1998) indicates that, higher education has demonstrated considerable insufficiency because post-secondary institutions have strong bias towards law, social sciences and other art subjects. Kenya has also a high number

of graduates with arts and science degrees who lack professional training (Anami, 2013). In addition, gaps exist in training with few universities offering training in apparel CAD technology training. Inadequate teaching and learning resources and bureaucratic procedures in the universities hinder effective implementation of education policies in Kenya therefore affecting implementation of apparel CAD technology in training (Kamau, 2012). Serem (2010) argues that problems associated with the learning and teaching can be detrimental to any subject. Problems may be due to an environment which is not conducive, the amount of time given against the topics and practical to be covered, lack of learning materials, and unclear usefulness of the unit.

Moreover, it is not possible to determine the level of skills in fashion design courses as the country's last manpower survey was conducted in 1986-88. Consequently, there is no standardized definition, occupational title, skills and competencies they are expected to learn from the institutions of higher education. This review of literature brings to light the complex scenario of the public institutions of higher learning offering fashion design courses. There is need to fill the gap in generating data and literature on technology offered in training of fashion designers in Kenya.

2.6. Constraints in Public Institutions of Higher of Learning in Kenya

Kenya National Bureau of Statistics (2009), noted that the high rate of population growth has adverse effects on spending in infrastructure, health, education, environment, water and other social and economic sectors. The higher education institutions however develop the future workforce that can effectively participate in the increasingly networked world and the emerging knowledge economy which cannot be ignored (Utz, 2006). Knowledge and technological progress have become more important to the realization of economic prosperity within an integrated world economy (UNIDO, 2002).

However since 1994, the government of Kenya decreased the education budget from 37 percent of its total annual recurrent budget to about 30 percent stating that it was not possible to allocate additional funding to higher education (Kiamba, 2004). Moreover, despite such a seemingly huge budgetary allocation to education the amount allocated to curriculum development is still poorly funded (KIE, 2006). Most of the funding in the education sector goes for recurrent expenses for research and development (Otunga & Nyandusi, 2009). At the university level, access to technical and science based courses is hampered by lack of infrastructure according to Kamau (2012). These trends demand for an investigation into learning resources in fashion design courses as they are technical in nature. Furthermore they rely on monies dispensed by the Kenyan government. The results would communicate any inconsistency in resource allocation for 'real' fabric draping.

Salinger (2006), noted that curriculum content is created by a process of resolving tensions, academic disciplines, technological and economic change and the different agendas of the government, employers and labor organization. Munavu *et al.* (2008) points out that, whereas the curriculum development process at the Kenya Institute of Curriculum Development (KICD) involves most stakeholders including higher education institutions, the curriculum in universities is developed by individual universities. There is however an urgent need for formal collaborations between curriculum researchers in institutions of research and higher education and KICD (Otunga & Nyandusi,2009).

According to Fullan (1991), the implementation of curriculum innovation is bound to be unsuccessful if teachers are not involved in the entire process of curriculum development. This leaves curriculum development by some institutions of higher

education in the hands of government sectors as KICD. However it does not have mandate over technical personnel or examination of the curriculum they develop. Muchangi (2011), documented that inadequate in-service training of lecturers as the main challenge facing implementation of curriculum. According to Nyandusi (2001), employers are dissatisfied with the preparedness of school graduates for the world of work. The employers further indicated a strong willingness for participating in curriculum development, but they haven't been involved.

Mulama (2006), observes that the Kenyan government statistics show that 90% of unemployed youth lack relevant skills. The lack of skills maybe due to certain youth polytechnics are still using outdated syllabus of 1974 and are staffed by untrained personnel. This means that the content of the curriculum has a great bearing on career choice and graduate abilities in meeting future employment restrictions. The curriculum implementers are yet to embrace modern methods of teaching. There is more theoretical teaching at the expense of practical skills teaching due to lack of tools, equipment and materials for practical training. There is very little inspection of curriculum implementation at different level (MOEST, 2004).

According to Kamau (2012), apparel design education has received attention in the recent years mainly due to numerous changes in the job market. There is need to have professionals to work in apparel industries or set up fashion businesses to cater for the dynamic market. However, an explicit human resources development direction for the apparel industry is not clear, although post-secondary institutions have been established to address the issue of labour requirement (Wiese, 1975). Based on these arguments the study sought to identify the source of curriculum, personnel involved in curriculum development, mode of teaching, availability of learning resources and infrastructure in

public institutions of higher learning offering fashion design courses. Therefore, the study will fill a gap in literature as review done on institutions of higher learning did not focus on the unique nature of fashion design as a practical course.

2.7. Learning Constraints in Practical Clothing Courses in Kenya

In Kenya a policy started to emerge in the mid-sixties leading to the launching of the 8-4-4 system in 1985 with the objective of increasing the scope of vocational subjects in the school system at all levels (Sifuna, 1990). The 8-4-4 education system has been found to be somewhat inefficient in providing relevant skills needed for national development (World Bank, 1999). Home Science is practical subject, it's useful in laying a foundation for further learning and vocational training cannot be over looked (Karimi, 1992). However, a study carried out in Uasin Gishu found that between 2005 and 2006 the number of schools that presented candidates for Home Science during Kenya Certificate of Secondary Education (KCSE) dropped from 23 to18 schools. Moreover half of them had enrolled 1-10 candidates each (Oilebe, 2001).

Nyangi (1992), reports that the student enrolment in Home Science subject is not consistent while the trend is on the decline. GOK(1998), further noted that under enrolment in key post secondary courses maybe a predicament to practical courses. Mumbi (1991), identified technical subjects students studied at secondary school before taking up training in clothing and textile as a practical subject are very vital. The study further discovered that students enrolled in colleges lacked sound Home Science background which hinders effective training as primary Home Science teachers. This study would identify the technical subject a student learned at secondary school before taking up fashion design course.

Kang'a (1994), noted that with the rush and eagerness to get white collar jobs, Home Science and other technical subjects lost the emphasis they had during the colonial times. Therefore, by 1970 unemployment was becoming a great problem in Kenya. There was a call for educationist to include industrial skills in the curriculum so that learners could become self – reliant on leaving school. Students however also disliked Clothing and Textile unit (Sang, 2002). According to Nyangi (1992), majority of students (85.7%) taking Home Science in Nairobi found Clothing and Textiles to be difficult to learn. Kang'a (1994), further reveals that clothing and textile is the least liked subject in the 8-4-4 education system. Serem (2010), Nyangi (1992) and Kobia (1991) ascertain that teachers and students respectively have positive attitude towards Clothing and Textiles. The attitude of students towards 'real' fabric draping for design as practical aspect in fashion design was determined as it may be jeopardize learning.

Home Science according to Karimi (1992), was mainly taught by demonstrations and discussions and ignored the other methods of teaching. This observation justifies Sang's, (2002) study that reported that not all Home Science teachers are confident in handling the clothing and textiles and may influence the attitude of the students. Mumbi (1991), concurs that the teaching methods frequently used were the teacher-centered methods like lecture, assignment and demonstrations. Student-centered methods like guest-speakers, seminars and visits were rarely used. Tutors were not given induction courses on joining the colleges and were not in serviced in methodology of teaching Home Science to teacher trainees.

According to Kang'a (1994), Home Science teachers also lacked relevant training in the teaching and assessment of practical sessions. The Home Science students were faced by major constraints such as: inadequate teaching resources, large classes, limited time and

facilities. Telewa (2004), study reveals that the major constraints faced by Home Science teachers include: inadequate teaching resources, limited time allocated for teaching Home Science, no induction course, wide curriculum (scope) and large classes. Kobia (1991), reported that boys are not aware of the future careers in Home Science.

Review of research on learning constraints experienced in practical clothing courses did not focus on constraints faced by fashion design students and teachers undertaking fashion design courses. Therefore, this study investigated learning constraints in fashion design courses therefore bridging the gap in fashion design as a practical course.

2.8. Fashion Draping for Design as a Profession

Think magazine (2010), stated that range of contemporary Indian designers' looks eastward to the rich cultural heritage. Pattern making has become an expertise of assembling and juxtaposing diverse wrapping with reference to traditional Hindu garb and sari silhouettes. Designer Gaurav Gupta feels that fabric is an extension, a form that can be abandoned in elements in his work. His design philosophy merges Indian traditions with the draping techniques which make his design aesthetically relevant today. The designer's roots in craft making garments with faultless lines and careful detailing are very handy therefore developing India's finest cashmere. The Kenyan designers may have to look at the traditional dress and denote techniques used to wear them and depict what would appeal to them in the present day.

Majtenyi (2010), documents that more than 20 designers have come up with their own labels, which are beginning to be recognized locally and internationally and more and more designers are entering the industry. The interview further noted that Kenya has some distinctive fabrics, notably the plaid or striped shukas, lessos, khangas and the

kikoy. One of Kenyans' renowned designers Wambui Njogu of MOOCOW indicated that they were typically used as shawls or wraps rather than as material to make garments. One of her outfits incorporates a long leather apron similar to that worn by the Turkana people of northern Kenya (Figure 2.3).

Figure 2.3: Garment designs by Wambui Njogu MOOCOW

Source: Cathy Majtenyi, VOA (2010)

The young designer's approach to pattern making is three dimensional like a sculptor to his creation. Equipped with a sketch or illustration before them, they can work directly on the dress form, modeling and pinning the various sections together on the dress form to achieve the desired effect (Stanley, 1991). This literature is evidenced by a preliminary survey carried out by the researcher in August 2010. It showed that a number of renowned successful designers in Nairobi use 'real' fabric draping: POISA - Patricia Mbela (Figure 2.3), Peon glamour, KOOROO (Figure 2.4), Katungulu Mwendwa (Figure 2.5), Betty Vennetti, Samantha Waireri and Occasions and Days (Monica Kanari) fashion houses. Kamau, *et.al*. (2013), argues that skills training in

fashion and textiles should lead to employability and job creation for its graduates. Studies on fashion designers' profile (Bio data), practices or constraints in Kenya have not received much attention. The study sought therefore to establish if fashion designers are trained in 'real' fabric draping, how they utilize the technique and consequently dynamics associated with its implementation.

Figure 2.4: The MONIKA bead dress contemporary African jewellery by Patricia Mbela of POISA

Source: mbelahttp://www.shuga.co.ke.

Figure 2.5: KOOROO Designs by ‘real’ fabric draping

Source: http://malindi.afrileo.com

Figure 2.6: Dinka collection by ‘real’ fabric draping for design by Mwendwa Katungulu

Source: http://www.tdsblog.com.

2.9. Summary of Literature Review

The documented literature in this study addressed the key issues relating to fashion and clothing design courses in public institutions of higher learning. Dynamics determining the use of 'real' draping design for design and learning attitude of the students were also addressed. Based on the literature reviewed it is noted that techniques used in fashion design courses especially 'real' fabric draping for design has not been given any attention. Rust, Mottram, & Till (2007), explains that it's important that research in fashion design be embedded in the specific practice that characterizes fashion design.

It is evident that 'real' fabric draping as a technique in garment design would be of great importance to fashion design students and fashion designers. Scholars such as Serem (2010), argues that problems associated with the learning and teaching can be detrimental to any subject. Mulama (2006), further observes that the Kenyan government statistics show that 90% of unemployed youth lack relevant skills. According to Kamau (2012), apparel design education has received attention in the recent years mainly due to numerous changes in the job market. On the contrary however, no research has focused on use of 'real' draping for design and issues that may influence its exploitation in institutions of higher learning or by fashion designers. Fashion designers must keep abreast with the recent techniques and technological advancement to translate to immediate response to constant fashion changes. This would ensure they anticipate opportunities that can be strategically exploited hence be employable and satisfy customer needs in garment design. This study assessed the usage of 'real' fabric draping for design and issues that may control, its use in public institutions of higher learning and among fashion designers. The study was therefore able to fill the gap in the body of knowledge regarding issues affecting its exploitation.

CHAPTER THREE: METHODOLOGY

3.1. Research Design

A cross-sectional descriptive survey aimed at assessing the usage of 'real' fabric draping for design in the public institutions of higher learning and among fashion designers in Nairobi County, Kenya. Mugenda (2008), indicated that cross- sectional studies help the researcher to establish whether significant associations among variables exist at some point in time.

3.2. Measurement of Variables

The use of 'real' fabric draping for design was the dependent variable. It was dichotomous and measured by dummy – coding for membership in the category by asking the respondent to tick Yes (if they used 'real' fabric draping for design) = 1 or No = 0 (if otherwise). The independent variables of the study were demographic characteristics of the students and teachers, fashion design practices, learning resources, learning conditions and student's attitude. The independent variables were categorical in nature and were measured by close ended and open ended items and Likert scales. The demographic characteristics were gender, education level, area of training and technical subject studied at secondary school. The respondents were asked to tick from the list given which fashion design practices they utilized when teaching fashion design. Close ended items were used and the respondents were asked to tick from the list given.

The availability of learning resources, learning conditions and student's attitude were measured by use of a five point Likert scale. The students' attitude was measured by constructing positive and negative statements related to students' attitude, respondents then ticked against each response on the Likert score. The availability of learning resources was measured by listing items needed to be taught 'real' fabric draping for

design. The students were asked to tick against each item on the Likert scale. Items related to learning conditions were generated from literature and respondents were asked to tick against each item on the Likert scale.

3.3. Study Area

The study was carried out in Nairobi County in Kenya which is cosmopolitan. The Kenya National Bureau of Statistics (2009), National Census showed Nairobi has the largest urban population of 3,138,369 persons with 1,605 230 being male and 1,533, 139 females. It is the hub of fashion and holds a large number of fashion designers making ready to wear garments by using various garment design techniques. Nairobi has a poverty rate of 22.5% and ranks number two Country wide based on Kenya County Fact Sheet (World Bank, 2006). This population may have a considerable percentage of money to spend on fashionable clothing as there is existence of a robust middle class. This customer base has seen the Nairobi city become a hub of fashion trends and holds numerous calendar fashion design events for ready to wear designs for their customers.

There are five public institutions of higher learning in Nairobi county offering fashion design and clothing design related courses (Appendix V). The County was chosen as it had the highest variation in types of institution offering fashion design related courses. These were the University of Technology, University, Textile Training Institutes, National Industrial Training Authority, National Youth Training Polytechnic and the National Technical Teachers College.

3.4. Target Population

Higher education includes Universities; technical education includes Institutes of Technology and Technical Institutes and Universities of Technology (Ministry of Education, 2012). The target population was all heads of departments, teachers and

students taking fashion design related courses in public institutions of higher learning in Nairobi County. According to a preliminary survey census carried out in July, 2011 by the researcher, there were 44 institutions of higher learning offering fashion design courses in Kenya (Appendix V). These institutions were incorporated into the due to their similarity in guidelines such as source of curriculum, human resource deployment and source of funding. All practicing fashion designers who were formally trained were also targeted. The fashion designers were chosen because they may be practicing 'real' fabric draping.

3.5. Sampling Technique

Five public institutions of higher learning were purposively included in the study. They included: one Public University, one University of Technology, one National Technical Teachers College, one Technical Training Institute and one Textile Training Institute in Nairobi County. Kombo and Tromp (2009), describes purposive homogenous sampling as the picking up of a small sample with similar characteristics to describe some particular subgroup. Purposive sampling would ensure that institutions included in the study are run by the government and have been offering fashion design or garment design courses. Stratified simple random sampling was used to proportionately stratify the students according to the type of institution, course and year of study to be qualifying them into the strata. However first years were not included into the study as they were deemed not to have sufficient data (Appendix XIII).

The accessible population was five heads of department, 32 fashion design teachers, 244 fashion design students and 30 fashion designers (Appendix IX). The fashion designers, teachers and students undertaking their masters', bachelors and diploma courses were sampled as they were deemed to give information that would assist in determining the

use of ‘real’ fabric draping for design in public institutions of higher learning and fashion designers in Nairobi County. Mugenda (2008), states that in stratified random sampling a sample is drawn from each of these strata and its main objective is to increase precision. Snowballing was used to select fashion designers to participate in the study. Orodho (2009), documents that the researcher should focus on a section of respondents based on the basis of participants referred.

3.6. Sample size

A sampling frame of public institutions of higher learning that offer fashion design courses was generated by the researcher (Appendix V). Five public institutions of higher learning were purposively selected in Nairobi County namely: Kenyatta University, Technical University of Kenya, Kenya Technical Teachers College, Kenya Textile Training Institute and the Nairobi Technical Training Institute. These institutions are accredited by the Ministry of Higher Education Science and Technology (MoHEST) or Commission of University Education (CUE) to offer training.

A table on sample size, confidence level and confidence intervals for random samples (Appendix V), was used to determine a sample size of 244 students from an accessible population of 266 students for the study. A table of random numbers (Appendix VI) was used to randomly draw the sample proportionately from each stratum at 0.05 confidence level and confidence interval of three. The student’s class attendance registers were used as sampling frames. The number of students from each subgroup was used to determine the sample size and was based on the initial size of the sub-group. A census of all the 32 teachers and the five heads of department were selected to participate in the study as the sample size was too small.

Snowballing was used to select 30 practicing fashion designers to participate in the study. This was to ensure that any fashion designer who is formally trained in garment or apparel design was included in the study sample. Additionally, in Kenya there is no data base for fashion designers. The Association of Fashion Designers (AFAD) was used as base for snowballing. The designers may be using 'real' fabric draping for design for semi couture (high-end, made-to-measure and made-to-order) and ready-to-wear. They would therefore give useful information for this study. The final sample size excluded 22 students, two teachers and one head of department and four fashion designers who had participated in the pretesting of the questionnaire and interview schedule.

3.7. Research Instruments

The instruments used for data collection were self-administered questionnaires for the fashion design teachers and students (Appendix II and III). Orodho (2005), states that a self-administered questionnaire is ideal for collecting data because participants individually record and interpret options. The self-administered questionnaires developed had structured and unstructured items on the usage of 'real' fabric draping, demographic data, type of fashion design practices, attitude of students, learning resources and conditions of the respondents.

A Likert scale with a five point- continuum ranging from 'strongly agree' to 'strongly disagree' was used to rank intangible components in the research. The respondents selected brief statements relating to attitude and types of fashion practices used. The respondents were also asked to rate whether the human and physical resources were 'Always' to 'Never' availability in the public institutions of higher learning purposively selected. The items used to rate attitude were positively and negatively worded

statements. These items were later reverse scored so that the higher responses on the Likert would represent the same scale to reduce response bias during data analysis.

The semi-structured interview guide assisted in obtaining information on fashion design practices, garments produced and opinion on 'real' fabric draping for design by the fashion designers (Appendix IV). An interview guide allows the subjects to clarify the responses, explain their opinion ask the interviewer questions. The structured items were used during data analysis as the study was mostly quantitative in nature. The unstructured items used to support emerging themes in the statistical results obtained. The content of the items included in the questionnaire and interview schedule were determined according to experience and experts' opinions from the field of education and fashion design.

3.8. Pre-testing of Research Instruments

The questionnaire was pre-tested on 22 students, two teachers and one head of department at the Rift Valley Institute of Technology. The interview guide was pre-tested on 4 fashion designers who were not included in the study. Pre-testing was done to ensure items in the data collection tools were clearly understood and interpreted by the respondents i.e. items bear same meaning to all respondents. It was also done to estimate time needed to administer the data collection tools. Feedback from the pretest was used by the researcher and specialist from the field to revise some of the items and eliminate those deemed to be redundant. This improved the reliability and validity of the instruments would ensure the instruments can be filled out in good time and give information on the usage of 'real' fabric draping for design.

3.9. Validity and Reliability

Validity is the degree to which a test measures what it purports to measure to be measuring (Orodho, 2009). The items in the questionnaires and interview schedule for the study sample were corrected and invalid responses rejected. Through a pretest, feedback was provided and modifications done by experts in fashion design and education on items developed. In case of bias and inconsistency in the interpretation of questions the instrument were restructured accordingly to ensure content validity. This would ensure the responses are sufficient in meeting the objectives of the study and to eliminate ambiguous items.

Reliability indicates the accuracy and precision of an instrument (Radhakrishna, 2007). The reliability of the questionnaire was measured using Cronbach's Alpha correlation coefficient to determine internal consistency (Cronbach, 1951). According to Santos (1999), the Cronbach's Alpha coefficient maybe used to describe reliability of factors from multi-point formulated questionnaires or scales. He further points out that though the most commonly acceptable alpha is 0.700 and above, lower thresholds up to 0.500 can be used based on diversity of constructs under study. The reliability coefficient adopted for the study was < 0.609 for teachers' questionnaire and < .711 for the students' questionnaire. The high coefficient indicates highly correlated items among themselves (Orodho,2009). These coefficients were deemed significant as the instrument (two questionnaires) were being used for the first time.

3.10. Data Collection Technique

A research permit was sought from National Commission for Science Technology and Innovation (NACOSTI). Five research assistants with bachelors' degree in fashion design were recruited from the researchers' social network. The research assistants were

trained on how to conduct themselves when introducing, distributing and collecting the questionnaires and interview schedule. They informed the respondents on the importance of study to ensure they understood the instruments and the mode of administration. The research instrument was personally delivered to respondents. An informed consent form was obtained from the respondents and only those who agreed to participate in the research were involved. The self-administered questionnaires were filled out by the heads of department, fashion design teachers and students. The interview schedule was filled out by the fashion designers with the help of the research assistance. The instruments were filled out and returned within the same day to ensure a high response rate.

3.11. Data Analysis and Presentation

Data collected were summarized and analyzed statistically to address the objectives and hypothesis of the study using the Statistical Software Package for Social Sciences (SPSS Version 17). The quantitative data were analyzed to give both descriptive and inferential statistics. The descriptive statistics such as frequencies, percentages generated were used to summarize the data obtained.

The Chi-square test for independence (X^2) was used to determine if two categorical variables with less than 5 rankings were related. Chi-square was used to assess whether the association seen between the variables in a particular sample is likely to represent an actual relationship between those variables in the population. Mugenda (2008), indicated that cross sectional studies cannot be used to determine cause and effects between variables although relationships may exist. Chi-square test of independence statistics was used to test the hypothesis at an alpha of 0.05. Hypothesis 1, 2, 3, 4 and 5 were tested to determine the relationship between the independent variables: source of

curriculum, teacher's area of training and pattern development techniques availability of learning resources and students' attitude and the dependent variables i.e. use of 'real' fabric draping. The study variables and the statistical tests applied to analyze the data are given in Table 3.1.

The Nominal measure of correlation used was Phi *Ø* and Cramer's V (*V*) to measure degree measure association between variables. The nature of the data from the Chi-square statistics dictated the method used. Results for possible values with exact possible values (2x2) Phi *Ø* was used, whereas those that were unequal (2x3) Cramer's V (*V*) was deployed. The obtained values range from zero (representing lack of association) to one (representing strong association). Quantitative data from the structured part of the interview schedule was analyzed using frequencies. The Qualitative data from the unstructured part of the interview schedule were compared and grouped according to similarities in order to develop categories. These data was later used to supplement, explain and interpret qualitative data. The summary and presentation of the data collected was done in form of tables, bar graphs and pie charts. Qualitative data was used to discuss the emerging themes and help elaborate various findings of the data.

Table 3.1 Measurement of variables

Independent Variable	Dependent Variable	Statistical Test
Teachers competencies		Frequencies and Percentages
Usage of 'real' fabric draping for design in Public institutions of higher learning		
Usage of 'real' fabric draping for design by Fashion designers		
Fashion design practices		
Availability Learning resources		
Conditions of Infrastructure		
Teachers' area of training	Use of 'real' fabric draping	x^2 (Chi- square test of independence)
Source of curriculum	Use of 'real' fabric draping	x^2 (Chi- square test of independence)
Pattern development techniques taught	Use of 'real' fabric draping	x^2 (Chi- square test of independence)
Availability of learning resources	Use of 'real' fabric draping	x^2 (Chi- square test of independence)
Students' attitude	Use of 'real' fabric draping	x^2 (Chi- square test of independence)

3.12. Logistical and Ethical Considerations

Kenyatta University provided a letter of introduction to the student for NACOSTI. A research permit was obtained from the NACOSTI to ensure that the research regulations and guidelines are adhered to before commencement of data collection period. Permission was sought from the Heads of department in the institutions selected to take part in the study. An introduction letter from the researcher was attached to each data collection instrument to seek for consent from each respondent (Appendix I). Identification numbers instead of names were used for anonymity and ensure confidentiality of the information gathered.

CHAPTER FOUR: FINDINGS

4.1. Introduction

This chapter contains findings on the students characteristics, competencies and characteristics of fashion design teachers, garment design practices, learning conditions, learning resources, student's attitude and usage of 'real' fabric draping for design. These were covered under each objective and hypothesis. This chapter outlines the descriptive statistics for the independent variables. The relationship between source of curriculum, teacher's area of training, pattern development techniques, learning resources, garment categories and students' attitude and use of 'real' fabric draping for design were tested to measure the hypothesis. The results from the open ended questions in the questionnaire and unstructured items from the interview schedule were used to support the qualitative data.

4.2. Characteristics of Fashion Design Students in Public Institutions of Higher Learning

The character of the fashion design students' in this study was important as they defined the uniqueness of the respondents. The characteristics included were gender, education level and technical subjects studied at secondary. However these items were not used for hypothesis testing.

4.2.1. Students' Gender

The study sought to examine the gender of the fashion design students in public institutions of higher learning in Nairobi County. Eighty four percent (84.0%) of the students were female with the rest being male.

4.2.2. Courses Fashion Design Students' are Studying

Fifty nine percent (58.7%) of students were either undertaking a certificate or diploma course in fashion design (Table 4.1).

Table 4.1: Courses fashion design students are studying

Education Level	Frequency (n)	Percentage	Cumulative Percent
Certificate	25	11.5	11.5
Higher Diploma and Diploma	103	47.2	58.7
Bachelors	83	38.1	96.8
Masters	7	3.2	100.0
Total	218	100.0	100.0

4.2.3. Technical Subjects Studied at Secondary School

The study sought to establish technical subjects studied at secondary school. The results show that fifty four percent (54.0%) of the students sampled had undertaken Home science (Figure 4.1). This may perhaps denote that students who studied Home Science chose the course as they may have felt they would do well. Moreover, it is one of the entry subject required to study the course.

The remaining groups of students had undertaken art and design, technical drawing or computers. However, some had not studied any technical course at secondary school level. Most of the students though indicated they chose the course by themselves because of various reasons: 'passion for fashion', 'good at designing or making clothes' or 'I will get employed or self-employed'.

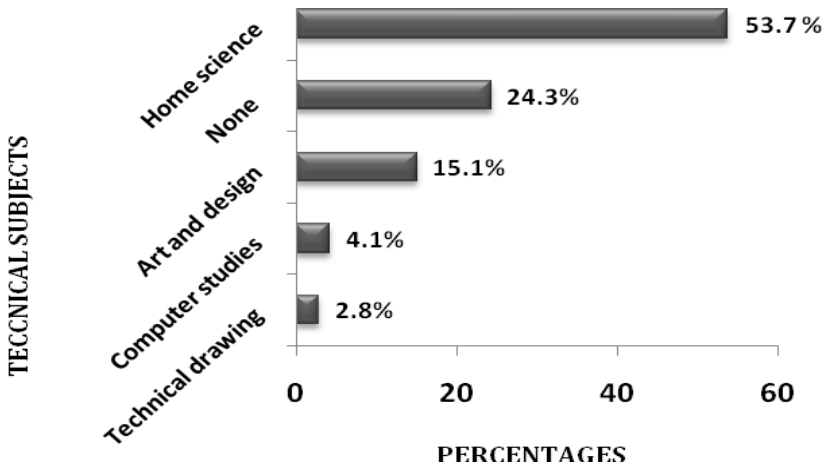

Figure 4.1: Technical subjects studied at secondary school

4.3. Competencies of Fashion Design Teachers

The teachers' competencies in fashion design in this study are important as they define the disposition of the respondents. Additionally they may influence the use of 'real' fabric draping for design in public institution of higher learning. The data obtained in gender, education level, other occupational activity, number of years teaching and institution teachers received training in fashion design were important but was not used in hypothesis testing. The teachers' area of training was also explored for possible relationships with the usage of 'real' fabric draping for design.

4.3.1. Teachers' Gender

Figure 4.3 shows that ninety three percent (93.0 %) of the fashion design teachers were female, while seven percent (7.0 %) were male. This implies that customarily fashion design is viewed as a female – oriented career and this is reflected in the high number of the females than males.

4.3.2. Education Level of Fashion Design Teachers

Fifty six percent (55.6%) of the fashion design teachers had attained either Bachelors degree, Masters or PhD. (Table 4.2). This points out to fashion design teachers advancing in their academic qualifications.

Table 4.2: Fashion design teachers' education level

Education level	Frequency (n)	Percentage	Cumulative Percent
PhD.	2	7.4	7.4
Master's degree	7	25.9	33.3
Bachelor's degree	6	22.3	55.6
Higher Diploma	7	25.9	81.4
Diploma	5	18.5	100.0
Total	27	100.0	100.0

4.3.3. Teachers' Area of Training

The study sought to find out the areas of training of the teachers to qualify them to teach fashion design in the various public institution of higher learning. Eighty five percent (85.2%) of them were trained in the areas of clothing / garment design or textile design with the rest about fifteen percent (14.8%) being trained in Art and design (Table 4.3). Notably though, none of the teachers has been trained in fashion design as a course. This implies that the government employed qualified personell to teach the fashion design students in public institutions of higher learning.

Table 4.3: Teachers area of training in fashion design

Areas of training	Frequency (n)	Percentage	Cumulative Percent
Garment design	13	48.2	48.2
Clothing and textile design	10	37.0	85.2
Art and design	4	14.8	100.0
Total	27	100.0	100.0

4.3.4. Type of Institution Teachers Received Training

Figure 4.2 shows that, nearly forty eight percent (48.1%) of the fashion design teachers were trained in public universities in Kenya. These institutions are known to have teaching that heavily leans on theory rather than practical's. However, twenty two percent (22.2%) of the respondents indicated they had attained diploma or higher diploma then advanced to do a degree at the University.

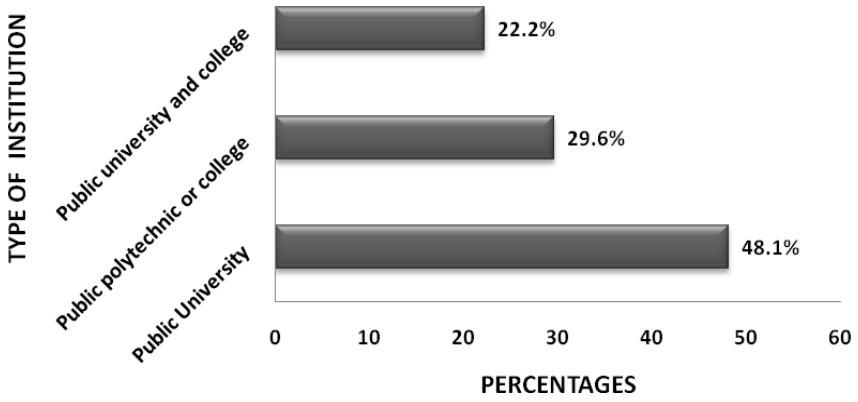

Figure 4.2: Institutions teachers received fashion design training

This means that some teachers may have lacked hands on training as they were trained mainly on theoretical aspects unlike the rest who may have been exposed to more hands on training in fashion design.

4.3.5. Region Fashion Design Teachers Received Training

Seventy one percent (71.4%) of the fashion design teachers who teach in Kenyan public institutions of higher learning were formally trained locally in Kenya. The rest 28.6 % were formally trained outside Kenya. This may imply that despite the teachers being trained in different institutions locally inbreeding was predominant.

4.3.6. Number of Years Teaching Fashion Design Related Courses

The results in Table 4.4 indicate that eighty five percent (85. 2 %) of the teachers' had taught fashion design related courses for a period of between 6 to >16 years. This might mean that fashion design teachers were highly experienced in their teaching subjects as they have been instructing students for a relatively long period of time.

Table 4.4: Number of years teaching fashion design courses

Number of years	Frequency (n)	Percentage	Cumulative percentage
>16yrs	5	18.6	18.6
11-15yrs	8	29.6	48.2
6-10yrs	10	37.0	85.2
1-5 yrs	4	14.8	100.0
TOTAL	27	100	100.0

4.3.7. Teachers' other Occupational Activities

The highest number of fashion design; fifty nine percent (59.3%) did not engage in any other occupational activity other than teaching (Figure 4.3). They indicated administrative duties such as coordinating teaching of curriculum and handling various

duties administrative was very involving. This finding might imply that the remaining percentages of teachers were involved in either generating knowledge or generating income. They may have been exposed to new knowledge as they were involved in garment making, soft furnishing businesses or research and consultancy in their fields of expertise.

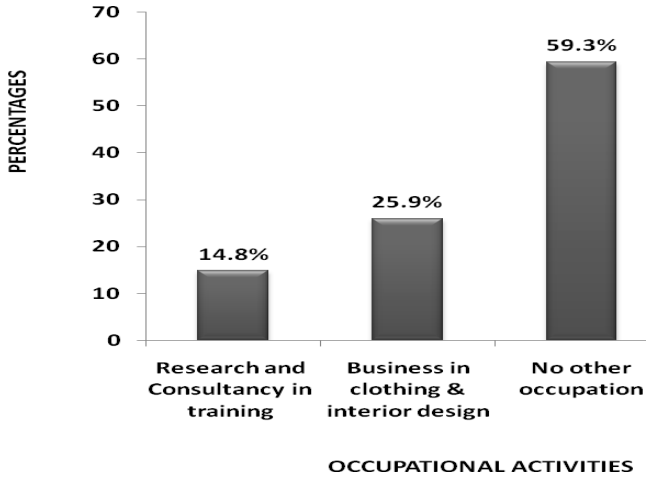

Figure 4.3: Teachers' other occupational activities

4.4. Usage of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The usage of 'real' fabric draping for design entailed the practice, procedure and tendencies carried out by the students and teachers in public institutions who learn fashion design. The study assessed the use of 'real' fabric draping for design, source of curriculum, curriculum review pattern, fashion design and pattern development techniques used, mode of teaching and challenge experienced.

4.4.1. Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The study sought to assess the use of 'real' fabric draping for design in public institutions of higher learning in Nairobi County. Seventy five percent (75.0 %) of the institutions did not use 'real' fabric draping for design. This might signify that the public institutions of higher learning offering fashion design courses may not have had control over the usage 'real' fabric draping.

4.4.2. Teachers' Trained in 'Real' Fabric Draping for Design

Results in Figure 4.4 shows that about seventy four percent (74.0%) of the teachers had never been trained in 'real' fabric for design whereas the rest were trained.

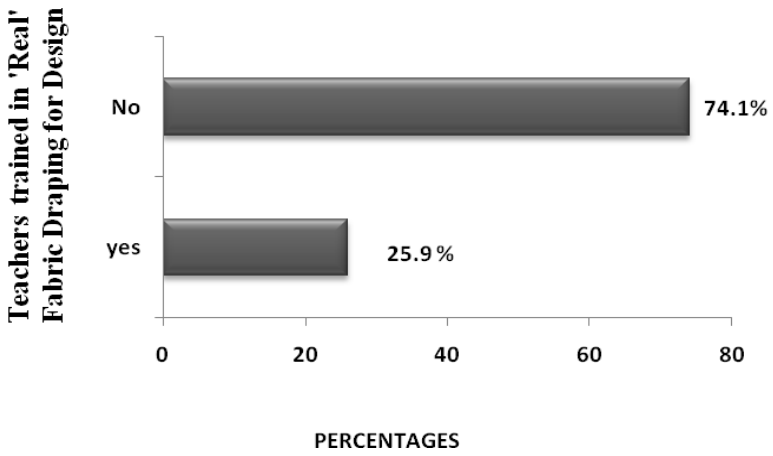

Figure 4.4: Teachers' trained in 'real' fabric draping for design

4.4.3. Constraints faced by Students and Teachers in the Usage of 'Real' Fabric Draping

The constraints encountered by fashion design students and teachers could hinder learning in 'real' fabric draping for design. Table 4.5 shows that all fashion design students experienced some form of challenge in the usage of 'real' fabric draping for design. However, the inadequacy of resources (books, tools, equipment i.e. dummies and

workshops) was experienced by about forty eight percent (48.2 %) of the teachers. These results may mean physical resources need to be made available to fashion design students so as to overcome the numerous limitations they face as they learn 'real' fabric draping for design.

Table 4.5: Constraints experienced by students and teachers in the usage of 'real' fabric draping for design

Constraints experienced by students (n=218)	Frequency	Percentage
Inadequate learning resources (books, dummies and workshops)	105	48.2
Draping is not taught practically	66	30.2
Limited time allocated to learn draping	29	13.3
Not able to produce good designs	18	8.3
Total	**218**	**100.0**
Constraints experienced by teachers (n=27)		
Inadequate learning resources (equipment, tools and books)	16	59.2
Student have negative attitude towards learning	1	3.7
Draping is not in curriculum	3	11.1
I am not trained in draping design	7	25.9
Total	**27**	**100.0**

Table 4.5 further shows that, all the teachers experienced some form of challenge in the usage of 'real' fabric draping for design. However, the highest percentage fifty nine percent (59.2%) were faced with inadequate supply of resources i.e. equipment and books. These results imply that both students and teachers lacked some learning resources for 'real' fabric draping for design to ensure meaningful learning takes place.

4.4.4. Source of Fashion Design Curriculum in Public Institutions of Higher Learning

The source of curriculum is of vital importance as it impacts on the type of fashion design skills that will be imparted and mode of delivery. In this study, only twenty five percent (25%) of the institutions control over curriculum used as it was developed by a departmental board (Figure 4.5). The rest of the institutions did not have control as they relied on KICD. The Stakeholders involved in curriculum development mentioned were government representatives from various ministries, private sector (apparel manufacturing firms) and fashion designers. These results suggest that the public institutions of higher learning teaching fashion courses did not have uniformity in source of curriculum to warrant control on content in curriculum in use but highly involved stake holders in curriculum development.

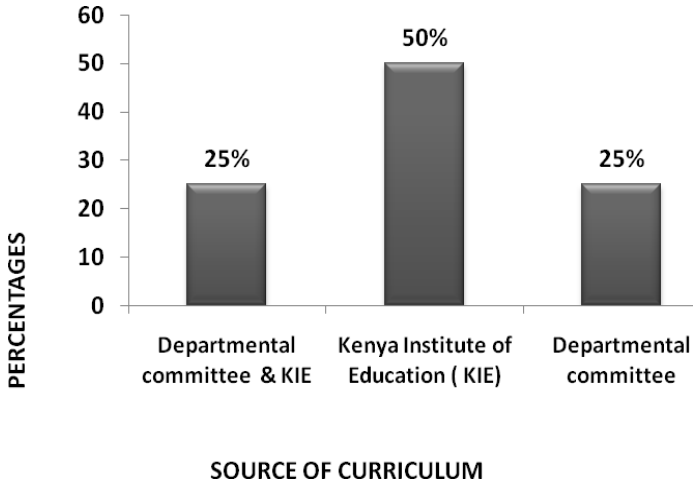

Figure 4.5: Sources of fashion design curriculum in public institutions of higher learning

4.4.5. Curriculum Review Pattern in Public Institutions of Higher Learning

The curriculum review pattern was established to evaluate how often the institutions of higher learning appraised the fashion design curriculum. Twenty five percent (25.0%) of the institutions reviewed their curriculum after four years (Figure 4.6). The fate of the rest of the institutions was left to KICD or departments to decide a review schedule. The results point to inconsistency in curriculum review pattern in fashion design courses in public institutions of higher learning. This might signify that any rapid change in technology or practice may not be incorporated in curriculum in good time.

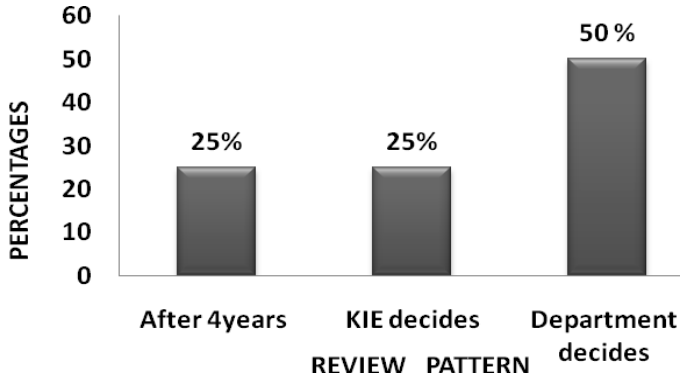

Figure 4.6: Curriculum review pattern in fashion design courses

4.4.6. Fashion Design Practices Used in Public Institution of Higher Learning

The institutions of higher learning used various fashion design However, data in Table 4.6, shows the institutions barely used fashion design practices that involved 'real' fabric draping for design as they were ranked low in terms of utilization. The process of 'Sketch - Draping - Pattern -Toile - Design alteration - Pattern alteration - Sample garment' was the most utilized by thirty seven percent (37.0%) at position 4. This was followed by *'Draping - Pattern -Toile - Design alteration - Pattern alteration - Sample garment'* at position 7. While *' Textile print on paper - Draping paper on body form-*

Sketch - Pattern - Toile - Design alteration- Pattern alteration – Sample' was ranked at position 8 with nobody utilized the design practice. These results clearly depicts that institutions of higher learning teaching fashion mainly exploited the other fashion design practices resulting to their high ranking and nit 'real' fabric draping for design.

4.4.7. Pattern Development Techniques Taught to Fashion Design Students

The study results in Figure 4.7 reveals that the least taught pattern development techniques was 'real' fabric draping for design by two percent (1.8%) of the teachers.

Table 4.6: Type of fashion design practices used by teachers

FASHION DESIGN PRACTICES (n=27)	DO NOT UTILIZE	UTILIZE	RANK
Conceptual idea - Pattern - Toile - Design alteration - Pattern alteration - Sample garment	6 (22.2%)	21 (77.8%)	1
Sketch - Pattern - Toile - Design alteration - Pattern alteration -Sample garment	09 (33.3%)	18 (66.7%)	2
Pattern - Toile - Design alteration - Pattern Alteration -Sample garment	13 (48.1%)	14 (51.9%)	3
Sketch - **Draping** - Pattern -Toile - Design alteration - Pattern alteration - Sample garment	17 (63.0%)	10 (37.0%)	**4**
Existing garment - Pattern - Toile - Design alteration - Pattern alteration - Sample garment	20 (74.1%)	7 (25.9%)	5
Existing garment - Sketch - Pattern - Toile - Design alteration - Pattern alteration - Sample garment	21 (77.8%)	6 (22.2%)	6
Draping - Pattern -Toile - Design alteration - Pattern alteration - Sample garment	24 (88.9%)	3 (11.1%)	**7**
Textile print on paper - **Draping paper on body form** - Sketch - Pattern - Toile - Design alteration - Pattern alteration – Sample	27 (100.0%)	0 (0.0%)	**8**

The largest percentages of pattern development techniques taught were pattern drafting, flat pattern design and free hand cutting. These results represent the various pattern development techniques that the fashion design students were exposed to in the course of their study period. However, draping design is the least popular pattern development techniques.

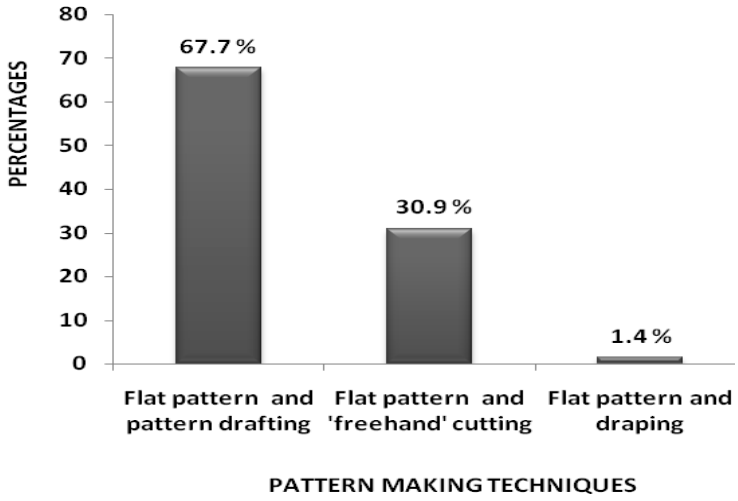

Figure 4.7: Pattern development techniques taught to fashion design students

4.4.8. Mode of Teaching 'Real' Fabric Draping as prescribed in Curriculum

The results show that 'real' fabric draping for design was taught as a topic within a unit to about sixty percent (60.1%) of the students, while thirty two percent (32.6%) indicated it was taught as a core unit (Figure 4.8). However, a small number indicated it was taught by demonstration and classroom project work. This inconsistency in mode of teaching 'real' fabric draping for design shows that the delivery of content is not uniform.

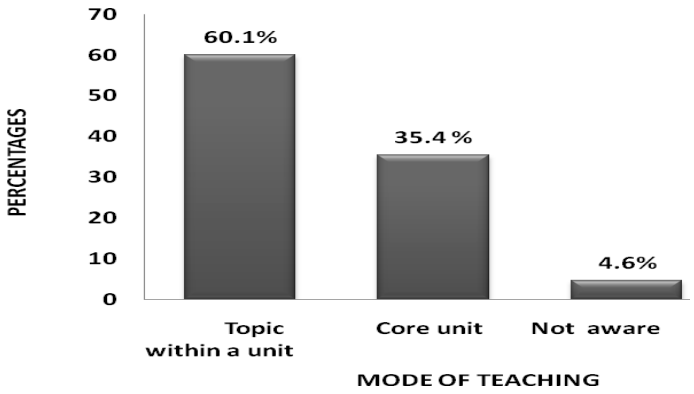

Figure 4.8: Mode of teaching 'real' fabric draping for design as prescribed in curriculum

4.5. Usage of 'Real' Fabric Draping for Design by Practicing Fashion Designers

The study investigated the usage of 'real' fabric draping by fashion designers in Nairobi County. This entailed who carries out draping, garment techniques used and the mode of training.

4.5.1. Garment techniques used to realize patterns or design concepts

The results for design Table 4.7 showed that about forty eight percent (47.6%) of the fashion designers combined pattern drafting, freehand cutting and draping when producing patterns for clothing.

Table 4.7: Garment techniques used to realize patterns or design concepts

Garment Techniques	Frequency (n)	Percentage
Pattern drafting, 'freehand cutting' & draping	10	47.6
Pattern drafting & 'freehand cutting'	6	28.6
Pattern drafting	3	14.3
Pattern drafting, 'freehand cutting' and reverse engineering	2	9.5
Total	21	100.0

4.5.2. Personnel who carries out ‘real’ fabric draping for design

Figure 4.9 shows that about eighty eight percent (87.5%) of the jobs requiring draping were done by the fashion designers’ themselves. Twelve percent (12.5%) of the jobs were carried out by employees. This might imply that designers could take on ‘real’ fabric draping for design jobs if they had time to do them. Some indicated they could not depend on employees to do the job as they were reluctant.

4.5.3. Mode of training in ‘real’ fabric draping

The results indicate that most of the fashion designers fifty seven percent (57.1 %) were trained formally at colleges or universities. However about nineteen percent (19.1%) of fashion designers taught themselves after induction by apprentice (Figure 4.9).

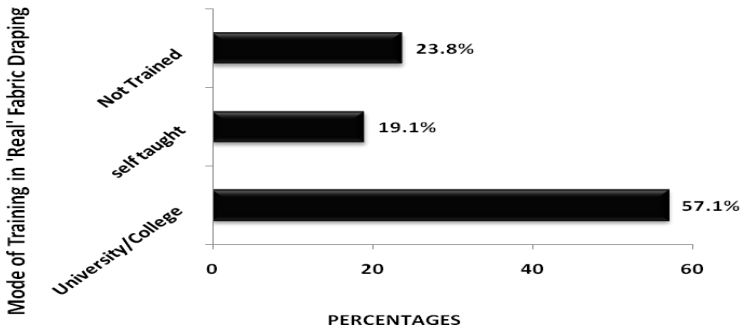

Figure 4.9: Mode of training in ‘real’ fabric draping for design by fashion designers

4.5.4. Garment Categories Created Using ‘Real’ Fabric Draping for Design

Notably, some garment categories predispose themselves to the use of ‘real’ fabric draping for design. Table 4.8 shows that, almost eighty eight percent (87.5%) of designers produced evening and bridal wear by ‘real’ fabric draping for design.

Table 4.8: Garment Categories Created Using 'Real' Fabric Draping for Design by Fashion Designers

Garment categories created using real fabric draping	Frequency (n)	Percentage	Cumulative Percent
Evening & bridal wear	10	62.5	62.5
Bridal wear	4	25.0	87.5
Semi couture designs (made to measure)	2	12.5	100.0
Total	16	100.0	100.0

The remaining thirteen percent (12.5%) produced semi couture designs. Most of the fashion designers indicated they did all jobs requiring draping as employees were not willing to learn and mostly did not have the skill. These results suggest that fashion designers were conversant with techniques best suited to produce various garment categories for their clients such as 'real' fabrics draping for design and thus utilized it predominantly.

4.5.5. Constraints faced by Fashion Designers in the Usage of 'Real' Fabric Draping for Design

The constraints faced by fashion designers in the practice of 'real' fabric draping could impede its successful incorporation in the garment making processes (Table 4.9). The main challenge faced was the lack of proper body forms by almost fifty nine percent (58.8%) of the fashion designers. Additionally, unavailability of suitable fabrics locally, inadequacy of proficient skills and staff not willing to learn were problems also listed by fashion designers.

Table 4.9: Constraints experienced by fashion designers in the usage of 'real' fabric draping for design

Constraints experienced by fashion designers	Frequency (n)	Percentage
Lack of proper body forms	10	58.8
Fabrics suitable not locally available	3	17.6
Staff not willing to learn	2	11.8
Inadequate proficiency in draping skills	2	11.8
Total	17	100.0

Despite the limitations experienced, all the fashion designers indicated that they would like fashion design student taught 'real' fabric draping for design. These results suggest that fashion designers were experiencing various problems in the usage of 'real' fabric draping for design. Therefore, they may not have fully exploited the technique to its full capacity.

4.5.6: Skill to be Improved Fashion Design Curriculum

Fashion designers interact with fashion design student during visits as guest speakers, practicum or industrial internship. They are able to give validated feedback on the type of skills that need to be improved. The results (Table 4.10) show that, about fifty three percent (52.4%) of the fashion designers indicated pattern making, measurement taking, crafts and draping design are areas that needed to be improved in teaching .

Table 4.10: Skill to be improved fashion design curriculum

Skill to be improved fashion design curricula	Frequency (n)	Percent
Pattern making, measurement taking, crafts and draping	11	52.4
Fashion illustration and clothing construction	2	9.5
Emphasis more on practical in public institutions and more theory in private institutions	8	38.1
Total	21	100.0

Moreover, thirty eight percent (38.1%) indicated that more emphasis on number of practical lessons needs to be beefed up in public institutions teaching fashion.

4.6. The Availability of Learning Resources in Fashion Design Courses

The reliability Cronbach alpha on the 23 items after deletion was .859 hence they were incorpotared in the questionnaire. Aspects about the learning the resources were reported in Table 4.11.

Table 4.11: Availability of learning resources to fashion design students

LEARNING RESOURCES n = 218		**A %**	**F %**	**R %**	**S %**	**N %**
Human resource	Lecturers, teachers	88.5	11.5	0.0	0.0	0.0
	Teaching assistants	61.5	30.8	0.0	3.8	3.8
	Library assistants	79.2	16.7	5.1	0.0	0.0
Physical Infrastructure	Sewing rooms	76.9	7.7	3.8	11.5	0.0
	Fashion/Display Studios	19.2	26.9	7.7	0.0	46.2
	Lecture hall	46.2	46.2	7.7	0.0	0.0
	Textile lab	30.8	11.5	11.5	3.8	42.3
Materials	Different types of fabrics	34.6	7.7	23.1	34.6	0.0
	Tailors chalk	61.5	34.6	0.0	0.0	3.8
	Paper for patterns	80.8	15.4	0.0	3.8	0.0
	Fashion design books	38.5	11.5	7.7	30.8	11.5
	Draping manuals	26.9	11.5	11.5	15.4	34.6
	Tracing wheel	57.7	7.7	3.8	23.1	7.7
	Dressmakers carbon paper	38.5	3.8	7.7	11.5	38.5
	Marking tape	0.0	0.0	3.8	15.3	80.8
Equipments and Tools	Draping Body forms	10.2	15.4	0.0	20.6	53.8
	Sewing machines	61.5	19.2	0.0	15.4	3.8
	Over lock Machines	53.8	23.1	3.8	7.7	11.5
	Tailors Square/ Ruler	15.4	7.7	26.9	3.8	46.2
	Hip rulers /Vary curve	38.5	7.7	0.0	11.5	42.3
	French curves	76.9	19.2	3.8	0.0	0.0
	Scissors (Cloth & Paper)	96.2	3.8	0.0	0.0	0.0
	Dressmakers pins	80.8	11.5	3.8	3.8	0.0

Key: Always **(A),** Frequently**(F),** Rarely **(R),** Sometimes**(S) or** Never **(N)**

A composite score on availability of learning resources was generated from the data collected (Appendix XII).

4.6.1. Availability of Human Resource in Public Institutions of Higher Learning

Availability of the human resources in public institutions of higher learning was investigated. Table 4.11 shows that most academic personnel were ‘always’ available to fashion design students. These were lecturers or teachers (88.5%), technicians/teaching assistants (61.5%) and library assistants (79.2%). This may mean that institutions of higher learning had an adequate number of human resource supplied by the government or employed by the institutions to assist the students in their academic related activities.

4.6.2. Availability of Physical Infrastructure to Fashion Design Students

The physical facilities in public institutions of higher learning are crucial in the learning process. Some of the physical resources were not ‘always’ available (Table 4.11) sewing rooms were ‘always’ available to seventy seven percent (76.9%) of the students, with lecture halls ‘always’ available to a lesser percentage of the respondents (46.2%).

4.6.3. Availability of Learning Materials Used by Fashion Design Students

The availability of learning materials for use is core for any teaching and learning process is any to take place effectively. However, results show that most learning materials were not ‘always’ available. Materials that were ‘always’ available were papers for patterns to eighty percent (80.8%), Tailors chalk (61.5%) and tracing wheel (57.7%) of the respondents (Table 4.11). The other learning materials were not readily available to the students.

These results imply that most of the different types of learning materials used to gain knowledge of 'real' fabric draping were not 'always' available for use. Dressmakers' carbon paper, marking tape, fashion design books, draping manuals and different types of fabric are a fundamental part of 'real' fabric draping and could impede its usage. Notably, these could signify that the learning environment for students undertaking a course 'real' fabric draping for design is not very conducive.

4.6.4. Availability of Learning Equipment and Tools to Fashion Design Students

Equipment used in the realization of a design concept is important in the learning environment in fashion design courses. Remarkably a high percentage of respondents indicated that learning equipment and tools were 'always' available. These included: clothing and paper scissors by ninety six percent (96.2%), dressmakers' pins (80.8%), and French curves (76.9%), sewing machines (61.5%) and over- lock machines (53.8%) of the respondents. Conversely, draping body forms were 'always' available to only about fifty nine percent (58.3%) of the students (Table 4.11).

Moreover, Tailors Square/ Metric Ruler and Hip rulers were 'Never' available to a good proportion of the students. A body form is the major equipment in garment design by draping and must be available for effective teaching and learning. These findings denote that meaningful learning in 'real' fabric draping for design maybe jeopardized as equipment and tools needed for draping and truing patterns are not readily available.

4.6.5. Conditions of Physical Infrastructure Used For Learning Fashion Design Courses

The indicators used to measure conditions of the physical learning conditions were lighting, ventilation, cleanliness, equipment and tools, furniture and blackboards and flipchart. The Cronbach aplha was conducted for validity on the six items used in the

Likert scale, after deletion of one item the alpha coefficient increased to 0.636, therefore only six items were used. This was highest coefficient attained and was accepted as the tool was being used for the first time. A composite was generated on data collected from conditions of Infrastructure Likert scale (Appendix XI). The results show that the highest proportions of students sixty eight percent (68.3%) indicated that learning conditions were in excellent condition.

The composite generated on the conditions of the learning infrastructure showed that eighty one percent (80.8 %) of the students indicated the learning conditions were excellent while about nineteen percent (19.2%) indicated they were poor. These results insinuate that the students were generally satisfied with the current learning conditions.

4.7. Testing Null Hypothesis on Use of 'Real' Fabric Draping for Design

The Chi-Square test of independence was used to test relationship in the Null hypothesis. It was used to establish whether the use of 'real' fabric draping for design was independent to source of curriculum, teachers' area of training, pattern development techniques taught, students' attitude, availability of learning resources and garment categories created. The null hypothesis was rejected if the *P*-value was lower than the significance level equal at $\alpha = 0.05$ confidence level.

4.7.1. H_{O1} Teachers' Area of Training is Independent of the Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The hypothesis that the teachers' area of training is independent of the use of 'real' fabric draping for design was tested at 0.05 at significance level (Table 4.12). The Chi – Square test results (χ^2 (2, N = 27) = 10.146, $p < 0.006$) show the test was significant (p <

0.006). The null hypothesis was rejected meaning that the teachers' area of training is independent of the use of 'real' fabric draping for design.

Table 4.12: Chi-Square analysis of the teachers' area of training and use of 'real' fabric draping for design in public institutions of higher learning

Teachers Areas of Training (n=27)	Do Not Use	Use	Total
Garment Design	10 (76.9%)	3 (21.4%)	13 (48.1%)
Art And Design	2 (15.4%)	2 (14.3%)	4 (14.8%)
Clothing And Textile Design	1 (7.7%)	9 (64.3%)	10 (37.0%)
Total	13 (48.1%)	14 (51.8%)	27 (100.0%)

$V = 0.\ 018$; χ^2 (2, N = 27) = 10.146, $p < 0.006$*

* Significant at < 0 .05

The implication would be that there is a significant relationship between teachers' area of training and use of 'real' fabric draping for design in public institutions of higher learning. This may signify 51.8 % of the teachers who used 'real' fabric draping for design were those trained in clothing and textile design. This is because their area of training involved pattern making hence giving them a better chance of being familiar with the 'real' fabric draping design as a technique in the course of their training. Statistical value yielding from Cramer's V (*V*) measure of correlation was 0.02 implying a weak association between teachers' area of training being independent of the use of 'real' fabric draping for design.

4.7.2. H_{O2} Source of Curriculum is Independent of the Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The hypothesis that the source of curriculum is independent of the use of 'real' fabric draping for design was tested at 0.05 significance level (Table 4.13). The results of the

Chi-square test (χ^2 (2, N = 31) = 31.000, $p < 0.0001$) showed the test is significant ($p < 0.0001$). The null hypothesis was rejected meaning that the source of curriculum is independent of the usage of 'real' fabric draping for design.

Table 4.13: Chi-Square analysis of the source of curriculum and use of 'real' fabric draping for design in public institutions of higher learning

Source of Fashion Design Curriculum (n=31)	Do Not Use	Use	Total
KICD & Departmental Committee Board	0 (.0%)	7 (43.8%)	7 (22.6%)
Departmental Committee Board	0 (.0%)	9 (56.3%)	9 (29.0%)
KICD (Kenya Institute of Curriculum Development)	15 (48.4%)	0 (.0)	15 (48.4%)
Total	15 (48.4%)	16 (51.6%)	31 100.0%

V= 0.623; χ^2 (2, N = 31) = 31.000, $p < 0.0001$*

* Significant at < 0 .05

This finding would imply that there is a significant relationship between source of curriculum and use of 'real' fabric for design in public institutions of higher learning. These results mean that those teachers with curriculum from Departmental Committee Board had a higher likelihood of using 'real' fabric draping for design (51.6 %). The value obtained from Cramer's V (V) correlation measure was 0.63 suggesting the presence of a fairly strong association between source of curriculum and use of 'real' fabric draping for design.

4.7.3. H_{O3} Pattern Development Techniques Taught is Independent of the Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The hypothesis tested was whether pattern development techniques taught are independent of the use of 'real' fabric draping at 0.05 significance level (Table 4.14). The Chi-square results (χ^2 (2, N = 217) = 67.837, $p < 0.0001$) showed that the test was

significant at ($p < 0.0001$). The null hypothesis was rejected meaning that pattern development techniques taught was independent of the use of 'real' fabric draping. Thus, there is a significant relationship between pattern development techniques taught and use of 'real' fabric draping for design.

Table 4.14: Chi-Square analysis of the pattern development techniques taught and use of 'real' fabric draping for design in public institutions of higher learning

Pattern development techniques taught (n=217)	Do Not Use	Use	Total
Flat pattern and pattern drafting	86 (100.0%)	61 (46.6%)	147 (67.7%)
Flat pattern and freehand cutting	0 (.0%)	67 (51.1%)	67 (30.9%)
Flat pattern and draping	0 (.0%)	3 (2.3%)	3 (1.4%)
Total	86 (39.6%)	131 (60.4%)	217 (100.0%)

V= 0 .646; χ^2 (2, n = 217) = 67.837, $p < 0.000$*

* Significant at < 0 .05

The observed trend might perhaps be due to 60.4% who used 'real fabric being more likely to also utilize pattern drafting, flat pattern design and free hand cutting pattern development techniques. Further analysis using Cramer's V (V) measure of correlation yielded a value of 0.65. This may indicate the presence of a strong association between pattern development techniques and use of 'real' fabric draping for design.

4.7.4. H_{O4} Availability of Learning Resources is Independent of the Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The hypothesis tested was availability of learning resources are independent of the use of 'real' fabric draping at 0.05 significance level (Table 4.15). The results of the Chi-

square test (χ^2 (1, N = 26) = .784, p > 0.303) shows the test was not significant (p > 0.303). The null hypothesis was not rejected that availability of learning resources are independent of the use of 'real' fabric draping

Table 4.15: Chi-square analysis of the availability of learning resources and use of 'real' fabric draping for design in public institutions of higher learning

Availability of Learning Resources (n= 26)	Do Not Use	Use	Total
Never available	3 (25.0%)	2 (14.3%)	5 (19.2%)
Always available	9 (75.0%)	12 (85.7%)	21 (80.8%)
Total	12 (46.2%)	14 (53.8%)	26 (100.0%)

$Ø$ = 0.198; χ^2 (1, N = 26) = .784, p > 0.303

Thus, there is no significant relationship between availability of learning resources and use of 'real' fabric draping for design. This trend may be due to 46.2.7% of teachers who indicated the learning resources were not available. Moreover, there is a big shortfall of some essential equipment such as dressmaking body forms and pattern making tools. Further analysis using the Phi $Ø$ measure of correlation obtained a value of 0.12, indicating a weak association between availability of learning resources and use of 'real' fabric for design.

4.7. 5. H_{O5} Students' Attitude is Independent of the Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The Cronbach aplha was conducted for validity on the 17 items used in the Likert scale with an alpha coefficient went of < .711 after deletion of 6 items only 11 items were used for data collection. The hypothesis tested was whether students' attitude was independent of the use of 'real' fabric draping for design at 0.05 significance level (Table 4.16).

Table 4.16: Chi-Square analysis of the students' attitude and the use of 'real' fabric drape for design in public institutions of higher learning

Student Attitude (n=209)	Do Not Use	Use	Total
Negative Attitude	81 (94.2%)	124 (96.9%)	205 (95.8%)
Positive attitude	5 (5.8%)	4 (3.1%)	9 (4.2%)
Total	86 (95.7%)	9 (4.3%	209 (100.0%)

$Ø = 0.066$; χ^2 (1, N = 209) = 0.864, $p > 0.353$

The results of the Chi- square test (χ^2 (1, N = 209) = 0.864, $p > 0.353$) show that the test was not significant ($p > 0.353$). Therefore the null hypothesis that the students' attitude is independent of the use of 'real' fabric draping was not rejected. This could imply that there is no significant relationship between the students' attitude and the use of 'real' fabric draping for design in public institutions of higher learning. This trend in the use of 'real' fabric draping for design though not significant could be due to 95.7% of the students indicating they could not use 'real' fabric draping for design. The Phi Ø measure of correlation yielded a value of 0.07, suggesting the presence of a weak association between students' attitude and the use of 'real' fabric draping for design.

Therefore we reject the null hypothesis that source of curriculum, teacher's area of training and pattern development techniques taught are independent of the use of 'real' fabric draping for design. Conversely, we fail to reject the hypothesis that availability of learning resources and students' attitude are independent of the use of 'real' fabric draping for design.

CHAPTER FIVE: DISCUSSION

5.1. Introduction

The discussion of results was based on the findings of the study. Assessing 'real' fabric draping for design in public institutions of higher learning and among fashion designers, would resolves the function of the different underlying issues related to its usage. Very little literature was found on the usage of 'real' fabric draping as a garment design technique. However Lindqvist (2013), study in Boras University Sweden artistically researched on garment design draping and the logic of pattern cutting. Dumridhammaporn *et.al.* (2012), study in Bangkok, Thailand analyzed the efficiency between flat pattern and draping design. Anicet, *et.al.* (2012), looked at creativity in fashion design using 'real' fabric draping. Boulanger (2003), explored the different sari designs in India.

This study was designed to establish the extent of the use 'real' fabric draping for design in Kenyan public institutions of higher learning and among fashion designers. Prior studies have focused on numerous key aspects of Home science as a practical subject in Kenyan institutions of higher learning. No study has yet been done to exclusively assess the usage of 'real' fabric draping for design in Kenya (Kamau, 2012; Serem, 2010; Telewa ; 2004). This study was therefore able to fill this gap in literature on usage of 'real' fabric draping for design.

5.2. Characteristics of Fashion Design Students in Public Institutions of Higher Learning

The results of this study show that majority of the fashion design students were female. The finding is consistent with those of Kamau (2012), who found that ninety percent

(90.0%) of the apparel design students in public universities were females whereas 10% were males Kimemia (2012) established that all participants from the textile department were female. Hiller & Connell (2012) in the United Kingdom, found that almost all students in Apparel and Textile undergraduate programs (96 .0%) were female students, which was a representative of other Apparel and Textile undergraduate programs in the United States of America. A possible explanation for these results may be that fashion design as a course attracts more female applicants than men. The results further show that the highest proportion of fashion design students were under taking either a certificate or diploma course (see Table 4.1). A possible explanation for this might be that some students benefitted from government scholarships thus raising the numbers in these courses.

The GOK (1998), indicated that under enrolment in key post-secondary courses maybe a predicament to practical courses. This may explain the observed trend in reduction of numbers of as transition to higher levels of advancement in training. It is interesting to note the largest percentage of students studied Home Science as a technical subject in secondary school (see Figure 4.1). A possible explanation for this might be that Home science is one of the key post-secondary cluster subject requirements for one to study fashion design at certificate, diploma and University. The present finding is consistent with other researches which found that Home Science as practical subject is useful in laying a foundation for further learning and vocational training and cannot be over looked (Karimi, 1992).

5.3. Competencies and Characteristics of Fashion Design Teachers

Prior studies have noted the importance of the teachers' competency and character (Kamau,2012); Serem, 2010 and Sang, 2002). According to the results of this study

almost all fashion design teachers were female and about half the number sampled had attained a bachelor's degree (see Table 4. 1). These results may be explained by the fact that the number of females studying fashion design courses is high and they later advance in training to become teachers in fashion design. These findings are further supported by the idea that boys were not aware of the future careers in Home Science as indicated by Kobia (1991); and they may not have become teachers. The highest number of fashion design teachers was trained in the areas of clothing/ garment design or textile design (see Table 4.3.). What is surprising is that a good number of the fashion design teachers had been trained in public universities. They had taught aspects of fashion design for a period of between 11 to 16 years (see Figure 4.2, Table 4.5). However, the results were rather disappointing as none of the teachers in this study had specialized training to teach in the area fashion design. It is difficult to explain this result, but it might be related to the fact that for a long time Home Science could be pursued at the university only if one wanted to be a Home Science teacher and singling out Clothing and Textile (Serem, 2010).

Three quarter of the respondents reported that they received their training in Kenya. An implication of this is that inbreeding was predominant and may jeopardize teaching fashion design as a practical course. The results produced corroborate the findings by Kang'a (1994), that Home Science teachers lacked relevant training in the teaching and assessment of practical sessions of the course. Moreover, not all Home Science teachers are confident in handling the Clothing and Textiles and may influence the attitude of the students (Sang, 2002).

On whether teachers were involved in other occupational activities, the study found majority of them were not engaged in any other occupational activity (see Figure 4.3).

The observed increase in those not engaging in any other activity could be attributed to teachers who were mostly busy with other administrative duties (member of subcommittees, coordinator of programmes, timetabling, and co-ordination of examination).

5.4. Usage of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

In reviewing the literature, limited data was found directly linked to the procedures and practices in 'real' fabric draping for design. This is the first study in Kenya to investigate the use of 'real' fabric draping for design in public institutions of higher learning. The most interesting finding was that, in all the five public institutions of higher learning involved in this study, four did not use 'real' fabric draping for design. However, this result has not been previously described and it was rather disappointing to have only one institution teaching 'real' fabric draping for design. The reasons given for the inconsistency was some institutions indicated it was too expensive to integrate, while others explained it was partly taught in pattern development that was adequate.

These results further show a clear divergence in training of fashion design teachers as a large proportion of them have not been trained in 'real' fabric draping for design (see Figure 4.4). This could possibly mean that opportunities in the area of 'real' fabric draping for design could not be fully exploited. This may be due to only small a percentage of teachers having received the training in 'real' fabric draping for design. These results contradict Anicet,*et.al,* (2012), study in Portugal which affirmed that draping technique according to research opens a vast field of possibilities in the creation of new products giving room to total innovation and differentiation of patterns.

Constraints faced by teachers and students when learning fashion design courses is not fully documented in literature. However as mentioned in literature review, problems associated with learning and teaching can be detrimental to any subject (Serem, 2010). Very little was found in literature on inquest of constraints faced in the usage of 'real' fabric draping for design. In apparel design, Kamau (2012) reported that majority of students studying fashion design had inadequate access to computer hardware, software and learning resources such books and the internet for apparel CAD technology training. Muchangi (2011), also identified inadequate in-service training of lecturers as the main challenge facing implementation of the curriculum. The results of the current study seems to agree with the observations in that all students and teachers indicated they had faced or would face some form of constraints in the usage of 'real' fabric draping for design as shown by Table 4.5.

It is important to note that the largest proportion of teachers and students pointed towards the lack of adequate equipment, tools, books and body forms as the major constraints. Therefore effective learning in 'real' fabric draping for design could not be achieved. This agrees with literature related to Home Science as a practical subject that indicated students were faced with major constraints such as inadequate learning resources and facilities (Telewa, 2004; Kang'a, 1994). This result may be explained by the fact that no teacher had specialized training in fashion design as course; with the three quarter having them being trained in Kenya resulting in duplication of skills acquired (see Table 4.3). It can thus be suggested that there should be an increase in the number of institutions of higher learning undertaking 'real fabric draping for design in order to reduce the constraints faced during learning.

According to Fullan (1991), the implementation of curriculum advancement is bound to be unsuccessful if teachers are not involved in the entire process of curriculum development. Contrary to expectations, this study found only one institution had control over curriculum in use and had a specified period (four years) upon which curriculum must be reviewed (Figure 4.5 and Figure 4.6), with numerous stakeholders involved including fashion designers. The rest of the institutions relied on KICD to provide curriculum. These results differ from Munavu *et.al.* (2008), study which pointed out that the curriculum development process at KICD involves most stakeholders including higher education institutions; whereas the curriculum in universities is developed by individual universities. The teachers pointed out that they did not know who was involved in curriculum development at KICD. The study results corroborate the findings by Nyandusi (2001), that employers' had a strong willingness for participating in curriculum development but were not involved.

A possible explanation to some of the results may be inadequate funding in curriculum development by those getting it from KICD (KIE, 2006). Moreover, Mulama (2006), points to certain youth polytechnics that are still using outdated syllabus of 1974 and are staffed by untrained personnel. The issue emerging from this finding is the inability for any rapid change in technology in fashion design being addressed in curriculum. The Kenya Institute of Education controls content in curriculum thus respondents were not aware of the specified period within which curriculum revision is done. In addition, KICD does not have command over technical personnel or examination in the education system as the Ministry of education and Universities are charged with this mandate.

Rust, *et al.* (2007), explains that the importance of research in fashion design being embedded in the specific practice that characterizes fashion design as different

approaches to designing fashion exists. The most recent study in the brain area by Dumridhammaporn, *et al.* (2012), links the time and the capital cost of the draping technique as being less than those of the flat pattern making. The models' satisfaction to the pattern making indicated that the sample made from the draping pattern making technique was more satisfying than the made by flat pattern making. This was perceived by the qualification, proportion, fitting, size and cascade of the fabric grain of the sample made from draping technique were better than those of flat pattern making technique. The results of this study show that a large proportion of the teachers utilized fashion design practices that did not involve draping and also rated them highly. Moreover, the current study also found out that the pattern development techniques least used was 'real' fabric draping for design (see Table 4.5 and Figure 4.7).

One of the issues that emerge from these findings is that the students were not given equal opportunity to learn 'real' fabric draping for design as a pattern making technique. These may be due to the fact that it was not prescribed in curriculum. The teachers' inclination towards fashion design practices that favored other techniques hinders learning 'real' fabric draping for design. These results do not support the previous documentation by Friggs (2008,) that noted that a good pattern maker must learn how to drape a pattern on a dress form, draft perfect flat patterns and create patterns by computer. This is because their first job placement may be as a sample cutter or pattern grader. This study was unable to demonstrate whether the students are disadvantaged by not learning 'real' fabric draping for design as a pattern making technique.

There was no literature found on the mode of teaching 'real' fabric draping for design as a practical subject. The study reported that more than half of the respondents were taught 'real' fabric draping for design as a topic within a unit. However a few respondents were

taught as a core unit (see Figure 4.8). Telewa (2004), reported that limited time allocated for teaching Home Science was one of the constraints faced by teachers. Most teachers who taught draping by theory or class demonstration with elements of pattern drafting signified that more time was needed to teach draping. While those who taught by demonstration and classroom project work pointed out that more time was needed to adequately teach. The current data is consistent with Karimi (1992) and Mumbi (1991), results which show that teaching methods frequently used for HomS science were the teacher-centered methods like lecture, assignment and demonstrations. Student-centered methods like guest-speakers, seminars and visits were ignored and rarely used.

The Government of Kenya statistics show that 90% of unemployed youth lack relevant skills. Certain youth polytechnics are still using outdated syllabus of 1974 and are staffed by untrained personnel as reported by Mulama (2006).The finding is also in concurrence with MOEST (2004) report, which showed that curriculum implementers are yet to embrace modern methods of teaching. There is more theoretical teaching at the expense of practical skills teaching due to lack of equipment, tools and materials for practical training. There is very little inspection of curriculum implementation at different level. Although this variable can be said to relate with the usage of 'real' fabric draping for design, there is need to consider it together with other issues which may not have covered by this study. These results therefore need to be interpreted with caution. Time allocated for effective learning of 'real' fabric draping for design maybe considered in cohort with other indicators such as quality of resources available and teachers' competencies. This finding has important implications in developing a clear education curriculum policy on time allocated for the practical courses. However, this requires more studies utilizing larger sample size from both private and public institutions of higher learning offering fashion design courses.

5.5. Usage of 'Real' Fabric Draping for Design by Practicing Fashion Designers

The current study found that almost half of fashion designers used 'real' fabric draping for design combined with either pattern drafting and / freehand cutting (see Table 4.6). Almost the same percentage indicated that they were formally trained in 'real' fabric draping in design institutions of higher learning, while only a few said they self-trained after apprenticeship. The fashion designers implied that they did most of the jobs requiring 'real' fabric draping for design. The results signify the importance of 'real' fabric draping for design as a relatively high percentage of fashion designers combined the technique with other methods to develop apparel products.

Moreover, fashion designers felt the need to utilize 'real' fabric draping for design as some taught themselves. However it insinuates the lack of standardization in training of fashion designers using 'real' fabric draping for design despite its usefulness in fashion design. These accords a report by Pierce (2010), that flat pattern making, draping design and CAD are techniques core to realization of the design concept and finally construction of the garment design. Sometimes draping is combined with flat pattern making. This is especially useful when variations on an existing silhouette are producing (Jaffe & Relis, 2004). Most of the fashion designers gave reasons such as 'lack of proper body forms' for their inability to use draping effectively. While others stated that 'staff not willing to learn', 'fabrics were not easily available' or 'inadequate proficiency in draping skills' (see Table 4.7). These data brings to light the inconsistency in the usage of 'real' fabric draping among fashion designers in Nairobi County.

The highest percentages of fashion designers were producing evening and bridal wear using 'real' fabric draping (see Table 4.8). These findings relate to observations by Friggs (2008), that documents draping as a method used mainly for couture dresses and

evening wear. The results also support previous research into the brain area that observed draping technique having numerous advantages such as innovation and differentiation of patterns. It could be even more significant if the technique is applied to the development of customized and differentiated female clothing products(Anicet *et.al.* , 2012). This finding may suggest that some garment designs are predisposed to 'real' fabric draping. This may result in the fashion designers who are conversant with the technique having advantage over the others. This combination of findings provide some support to the conceptual premise that the input or influence of fashion designers in the activity (fashion design learning) is important as it does relate to experience, knowledge acquired and final products made.

The results show that most fashion designers (Table 4.10) indicated that pattern making; measurement taking, crafts and draping were areas that students were not competent in. Additionally more practical needed to be undertaken as a mode of teaching. These findings relate to observations by El-Namaki (1998) which indicate that higher learning has demonstrated considerable insufficiency because post-secondary institutions have strong bias towards law, social sciences and other art subjects. Anami (2013), noted that Kenya also has a high number of graduates with arts and science degrees who lack professional training. The trend portrays the gap in training on student's competencies that must be addressed to ensure proper skill acquisition in fashion design courses.

5.6. Influence of Learning Resources and Facilities on the Use of 'Real' Fabric Draping for Design

The availability of learning resources and facilities is routinely established to determine whether any effective learning takes place. According to Ayler (2011), inadequacy of staff and learning resources are the main impediment to the implementation of

curriculum. The Commission for Higher Education (2003), reports the need to continually re-define quality and excellence and regularly review academic resources for public universities to ensure that they are adequate and appropriate to support the programmes being offered. These literatures highlight the importance of resources in fashion learning for skills to be imparted on the learners.

The current study shows that learning resources and facilities were available for use to majority of the fashion students (see Appendix XII). It seems possible that these results are due to the institutions being affiliated to the government and therefore were assured of financial support. The highest proportions of students (Appendix XI) indicate that the condition of physical infrastructure was in excellent form. The results indicate that studios for design and display, marking tape, draping body forms, fashion design books and draping manuals were learning resources and facilities inadequately in supply (see Table 4.10). The finding is in agreement with Kamau (2012), who pointed out that in selected universities apparel CAD teaching and learning resources were inadequate. The emerging issue from these findings is that the available learning resources and facilities are not adequate to teach 'real' fabric draping. It is possible therefore that the deficiency of the learning resources and facilities impedes on use of 'real' fabric draping despite institutions being compelled by curricula.

5.7. Pattern Development Techniques Taught is Independent of the Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

The most interesting finding was that there is a relationship between pattern development techniques taught and use of 'real' fabric draping for design. At $P < 0.05$ there was existence of a fairly strong association between pattern development techniques being dependent to the use of 'real' fabric for design. The observed trend

might perhaps be due to those who used ‘real fabric implying being more likely to utilize flat pattern design and free hand cutting as pattern development techniques (Table 4.14). The results concur with observations by Pierce (2010), that pattern drafting, draping design and CAD technique are critical to a fashion designer's concept being made into a garment. The author further noted that each of these techniques serves the purpose of creating a style pattern that can be used to construct the designer's concept. It is important to bear in mind that without using one of these techniques, it may be almost impossible for a new fashion design concept to be made into a wearable garment.

The strong association may mean pattern making methods can be combined when designing garments. Therefore, the fairly high use of other pattern making techniques other than using ‘real’ fabric draping for design may limit the fashion designers in one way or another. Dumridhammaporn *et al.* (2012), linked ‘real’ fabric draping for design as pattern making method that reduces time waste and increase of accuracy in getting the right proportion to the cloth design and the models’ satisfaction compared to flat pattern making techniques.

5.8. Source of Curriculum is Independent of the Use of ‘Real’ Fabric Draping for Design in Public Institutions of Higher Learning

Another important finding is that, there is a relationship between source of curriculum and use of ‘real’ fabric for design in public institutions of higher learning. At $P < 0.05$ there is presence of a fairly strong association between the sources of curriculum being dependent to the use of ‘real’ fabric draping for design. These results mean that those with a highest likelihood of using ‘real’ fabric draping for design had curriculum developed by Departmental committee boards (see Table 4.13). This could have led to

the inconsistency in the use of 'real' fabric draping for design in public institutions of higher learning.

The study demonstrates that the source curriculum dictates content incorporated in curriculum and thus would compel the institutions and teachers to use 'real' fabric draping for design. This corroborated by Slaughter (1997), report that curriculum content is created by a process of resolving tensions, academic disciplines, technological and economic change and the different agendas of the government, employers and labor organization. However, there is an urgent need for formal collaborations between curriculum researchers in institutions of research and higher education and KICD according to Otunga & Nyandusi (2009). Fullan (1991), concluded that implementation of curriculum innovation is bound to be unsuccessful if teachers are not involved in the entire process of curriculum development.

5.9. Teachers' Area of Training is Independent of the Use of 'Real' Fabric Draping for Design in Public Institutions of Higher Learning

From the results of the current study, indications are that perhaps that there is a relationship between teachers' area of training and use of 'real' fabric draping for design in public institutions of higher learning. This is indicated by the fact that at $P < 0.05$ there is a weak association between teachers' area of training being dependent on the use of 'real' fabric draping for design. The results show that those trained in clothing and textile design had a higher probability of using 'real' fabric draping for design (see Table 4.12). Clothing and textile design as an area of training could have content that involves pattern making which may include draping as a pattern making method. This would translate into teachers' trained 'real' fabric draping for design as a technique.

This study confirms that teachers' area of training is associated with the use of 'real' fabric draping for design. This present finding seems to be consistent with those MOEST (2004), observed that the lack of staff development opportunities for curriculum implementers in Kenya. The report indicated that if teachers are well trained and highly motivated, learning will be enhanced. The results are consistent Kang'a (1994), study that suggested Home Science teachers also lacked relevant training in the teaching and assessment of practical sessions.

This being the first study on the use of 'real' fabric draping for design it brings out the fact that a cohort of issues and concerns determines the use of 'real' fabric draping for design. These results are significant as they give an insight into some dynamics in the fashion design learning system that may work in association with others to influence the use of 'real' fabric draping for design. Until recently, little of practical use has been published on the art of draping beyond the introduction of the basics, leaving the craft to become a skill passed on from master to apprentice, just like tailoring (Lindqvist, 2013).

The study was able to contribute to the field of knowledge on pattern development techniques taught, source of curriculum and teachers' area of training as indicator that had a strong association with the use of 'real' fabric draping for design. This is an area that has specifically not been documented within Africa including Kenya. Fashion design researches should focus on practices or artistic techniques in the field of fashion design. This is because only one institution out of the five involved in the study used 'real' fabric draping for design. This is in spite of a reasonable number of fashion designers using it and all fashion designers indicating it should be taught to fashion design students. However, the administering of questionnaires and interview schedules to students teachers fashion designers may not have fully documented the technique.

This is because it can be embedded in several components of cultural practices in adornment and garment design such as head gear.

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. Summary of Main Findings

The study has given an account of the use of 'real' fabric draping for design in Nairobi County Kenya. The main focus of the dissertation was to assess the usage of 'real' fabric draping for design, focusing on public institutions of higher learning and fashion designers. This was essential in developing strategies that would be put in place to enhance the use of 'real' fabric draping for design. It was hypothesized some of the variables in the fashion design learning system were independent of the use of 'real' fabric draping for design and may influence its utilization by the respondents.

The study adopted a survey design, which involved the administering of questionnaires to 4 Heads of department, 27 teachers and 218 students and interview schedules to 21 fashion designers who participated in the study design. The variables measured were teachers' competencies, usage of 'real' fabric in draping for design in public institutions of higher learning, usage of 'real' fabric draping for design by fashion designers, fashion design practices, availability of learning resources and conditions of infrastructure and students' attitude. The findings indicated that there was no association between availability of learning resources, students' attitude, garment categories created and the use of 'real' fabric draping for design. However, other variables such as pattern development techniques, sources of curriculum and teachers' area of training had an association with the use of 'real' fabric draping for design.

The results indicate that nearly all fashion design teachers were female (93.0%). None of the teachers had specialized training to teach in the area of fashion design, as majority of them teachers (85.2%) were trained in clothing / garment design or textile design. The highest percentage of teachers (74.1%) indicated they had no training in 'real' fabric

draping for design. Notably high percentage (74.1%) of the fashion design teachers were formally trained in Kenya. Most of the teachers (59.3%) were not engaged in any other occupational activity as they were mostly busy with other administrative duties.

Generally, most of the public institutions of higher learning (75.0 %) did not use 'real' fabric draping for design. They indicated they had no control over curriculum content as it was from KICD. The same percentage indicated they were not aware of either curriculum review pattern or stake holders involved in developing the curriculum they use. Basically, fashion design practices that involved 'real' fabric draping for design were least popular in the public institutions with the least proportion of teachers (1.8%) teaching 'real' fabric draping for design as a pattern development technique. 'Real' fabric draping for design was mainly taught (60.1%) as a unit within a topic. Some vital resources such as studios (46.2%), marking tape (80.8%), draping body forms (53.8%) and draping manuals (34.6%) were 'never' available for use when learning 'real' fabric draping. In general, learning conditions were in excellent condition (68.3%). A reasonable number of fashion designers (47.6%) used real fabric draping, with most of them (87.5%) mainly produced evening and bridal wear. This is despite some of them (58.8%) indicating they lacked proper body forms to use.

Most of the fashion designers combined pattern drafting, freehand cutting and draping when producing patterns for clothing. A good number of the fashion designers had been trained in 'real' fabric draping for design hence they did work requiring 'real fabric draping for design 'draping (87.5%) at their enterprises. However about nineteen percent (19.1%) of fashion designers taught themselves after apprentice. Majority of the fashion designers (87.5%) produced evening and bridal wear by 'real' fabric draping for design. The main challenge faced was the lack of proper body forms. The fashion

designers felt there was need to decrease the overemphasis on theory rather than practical when teaching as it may impact negatively on the competency of the graduates.

The findings indicated that there was no association between availability of learning resources ($Ø = 0.198$; χ^2 (1, N = 26) = .784, $p < 0.303$), students' attitude ($Ø = 0.066$; χ^2 (1, N = 209) = 0.864, $p < 0.353$) and the use of 'real' fabric draping for design. However, at $P < 0.05$ pattern development techniques ($V = 0.646$; χ^2 (2, N = 217) = 67.837, $p < 0.000$*) and sources of curriculum ($V = 0.623$; χ^2 (2, N = 31) = 31.000, $p < 0.000$*) had a fairly strong association with the use of 'real' fabric draping for design. The teachers' area of training ($V = 0.018$; χ^2 (2, N = 27) = 10.146, $p < 0.006$*) had a weak association with the use of 'real' fabric draping for design.

6.2. Conclusions

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

1. Majority of the teachers (respondents) in the area of this study, were not trained in fashion design as an area of specialization.
2. Very few public institutions of higher learning used 'real' fabric draping for design as they indicated it was not prescribed in curriculum.
3. Most of the fashion designers used 'real' fabric draping for design with all of them recommending that the technique should be taught to fashion design students.
4. The inadequacy of body forms, draping manuals, styling tape and hip curves in this study may pose a great challenge to teachers and students. This may contribute to the low use of 'real' fabric draping for design.
5. A fairly strong association exists between the source of curriculum, pattern development technique taught and the use of 'real' fabric draping for design.

6. The lack of skilled teachers in ‘real’ fabric draping for design may jeopardize learning of the technique in public institutions of higher learning teaching fashion design.
7. The students’ attitude is independent of the use of ‘real’ fabric draping for design.

6.3. Recommendations for Policy and Practice

The following recommendations were made for policy and practice from the study findings:

1. Curriculum developers (universities and other stakeholders) should ensure curricula developed for fashion design courses include ‘real’ fabric draping technique for design. This may reduce the inconsistency in skills acquisition in fashion design courses.
2. The public institutions of higher learning should offer short courses in ‘real’ fabric draping for interested persons to increase skilled manpower with the knowledge of the technique in fashion design industry.
3. The public institutions of higher learning need to ensure adequate funds are set aside for the purchase of body forms and other tools that are vital in teaching ‘real’ fabric draping, to ensure effective learning in fashion design courses.
4. The fashion design courses should be audited regularly and current techniques adopted by the learning institutions to ensure skills taught are relevant, competitive and meet the requirements in the fashion design industry labour market.
5. The public institutions of higher learning should ensure that teachers engaged have the adequate skills to teach ‘real’ fabric draping for design as a practical unit. This would ensure that the students acquire pertinent skills imparted as prescribed in curriculum.
6. There is limited research in the area of fashion design in Kenya. A nationwide survey on the status of fashion design as a practical course should be carried out. It should

be organized by the National Commission of Science, Technology and Innovation (NACOSTI) and Kenya Journal of Technical and Vocational Education (KJ- TVET). The published results would bring to light the situation of 'real' fabric draping for design in the Kenya and generate policy to guide review of course content.

6.4. Recommendations for Further Research

Further research can be carried out from the following aspects arising from the research findings:

1. A comparative study on the use of 'real' fabric draping for design between public and private institutions of higher learning, teaching fashion design courses in Kenya.
2. The carrying out of a need assessment research to establish the technological gaps in fashion design curriculum in Kenya.
3. Investigate the opportunities and constraints faced by fashion designers in the practice of 'real' fabric draping for design in Kenya.
4. Case studies of fashion designers who use 'real' fabric draping for design as a pattern making and as design tool to develop innovative designs.
5. Practice-based research on 'real' fabric draping for design with an industry focus should be explored. This will offer potential for collaborations with emphasis in hands-on development on innovation of techniques between fashion design teachers, fashion designers and external partners.

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8.0. APPENDICES

8.1. Appendix I; Participant Information and Consent Form

RESEARCHERS CONTACT:

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INTRODUCTION: I am a graduate student at Kenyatta University, Department of Fashion Design and Marketing; conducting a research on the use of 'real' fabric draping for design in Kenya in institutions of higher learning and among fashion designers in Nairobi, County. You are invited to participate in this study because you are involved in fashion design learning either as a head of department, teacher or student. You may also be a formally trained and practicing as a fashion designer. Your participation is entirely voluntary. Truthfully answer the set of questions as names or addresses will not be recorded. The information given will be held in confidence and used for the purposes of this study only.

DECLARATION
I understand the purpose and procedures of this study as described and I voluntarily agree to participate. I understand that at any time during the investigation I will be free to withdraw without jeopardizing any employment or educational opportunities. I have had the opportunity to ask questions and have received satisfactory answers to all inquiries regarding this study.

TO BE COMPLETED BY INTERVIEWER/ RESEARCH ASSISTANT

I certify that I have read the above consent procedure to the participant.

--- ---
Signature of Investigator Date:

TO BE COMPLETED BY RESPONDENT

--- ---

Signature of respondent Date:

8.2. Appendix II; Study Questionnaire for Fashion Design Teachers

Name of Organisation: _____ Date: _____

Part A: Teachers Characteristics and Competencies

1) Indicate your gender/sex.
Male **[ ]** 2) Female **[ ]**

2) What is your highest level of education?
a) Diploma [ ] d) Bachelors Degree [ ]
b) Higher Diploma **[ ]** e) PhD **[ ]**
c) Masters Degree [**]**

3 a) Indicate what your area(s) of specialization in fashion design.

_____

b) Indicate type of institution and country you received training in fashion design e.g. University in Kenya

_____

4a) Indicate the number of years you have been teaching fashion design related courses?
a) Less than 5 Years **[ ]** b) 6 – 10 Years **[ ]**
c) 11-15 Years **[ ]** d) 16 - 20 Years [ ]
e) More than 21 Years **[ ]**

b) Besides teaching fashion design, indicate any other occupational activity you undertake?

_____

Part B: Usage of 'Real' Fabric Draping for Design

1a) Does the institution teach students 'real' fabric draping for design?

a) No **[ ]** b) Yes **[ ]**

2.a) Are you trained in 'real' fabric draping for garment design?

_____

b) What constraints have you experienced as you teach 'real' fabric draping for design?

_____

_____

c) Does the institution feel the need to incorporate 'real' fabric draping for design in the curriculum?

_____

_____

3 a) What is the source of the curriculum currently in use in the institution?

_____

b) Indicate any stake holders who are involved in developing the curriculum currently in use.

_____

4 a) How often is the curriculum revised in the institution? _____

b) Indicate reason for response above. _____

5) The following are fashion design practices utilized to produce garment designs. Indicate which ones you **Use** or **Do Not use** when teaching fashion design students.

FASHION DESIGN PRACTICES	USE	DO NOT USE
Sketch – Draping – Pattern –Toile – (Design alteration) – Pattern alteration - Sample garment		
Draping – Pattern –Toile – (Design alteration) – Pattern alteration - Sample garment		
Textile print on paper – Draping paper on body – (Sketch) - Pattern – Toile – (Design alteration) – Pattern alteration – Sample		
Sketch – Pattern – Toile – (Design alteration) – Pattern alteration –Sample garment		
Pattern – Toile – (Design alteration) – Pattern Alteration – Sample garment		
Existing garment – Sketch – Pattern – Toile – (Design alteration) - Pattern alteration – Sample garment		
Existing garment – Pattern – Toile – (Design alteration) – Pattern alteration - Sample garment		
Conceptual idea – Pattern – Toile – (Design alteration) – Pattern alteration - Sample garment		

Thank you for your co operation

8.3. Appendix III; Study Questionnaire for Fashion Design Students

Name of Organization _____ Date _____

Part A: Basic Background

1. Indicate your gender/sex.
a) Male **[ ]** b) Female **[ ]**

2 a) what type of course are you undertaking?

a) Certificate **[ ]** b) Higher Diploma and Diploma **[ ]**
c) Bachelors Degree **[ ]** d) Masters Degree **[ ]**

b) Who/ what prompted you to choose this course?

_____

3) Indicate any technical subjects studied at high school.

_____

Part B: Use of 'Real' Fabric Draping for Design

1. What pattern making technique are you taught in the institution?
a) Flat pattern design [ ] b) 'Real' fabric draping [ ]
c) CAD for pattern making [ ] d) Freehand cutting [ ]
(Pattern Development software)

2. What mode of teaching is used for real' fabric draping?
a) As a core unit [ ] b)As an elective [ ]
c) As a topic within a unit [ ] d) others (specify below)

_____

3. What constraint(s) have you experienced as you are trained in 'real' fabric draping for design?

_____

_____

_____

Part C: Availability of Learning Resources

1) The following are learning resources used by fashion design students when learning. Indicate whether they are Always (A), Frequently (F), Rarely (R), Sometimes (S) or Never (N) available to you.

LEARNING RESOURCES		A	F	R	S	N
Training personnel	Lecturers, teachers					
	Technicians/teaching assistants					
	Library assistants					
Physical Infrastructure	Sewing rooms					
	Studios (Design and display)					
	Lecture hall					
	Textile lab					
Materials	Different types of fabrics					
	Tailors chalk					
	Paper for patterns					
	Fashion design books					
	Draping manuals					
	Tracing wheel					
	Dressmakers carbon paper					
	Marking tape					
Equipment and Tools	Draping Body forms					
	Sewing machines					
	Over lock Machines					
	Tailors Square/ Meter Ruler					
	Hip rulers /Vary form curve					
	French curves					
	Scissors (Cloth & Paper)					
	Dressmakers pins					

Part D: Conditions of Learning Resources (Physical Infrastructure) in Public Institutions of higher Learning

1) How is the condition of the lecture hall, studio, workshop or sewing room with regards to the following factors?

	Excellent	Very Good	Average	Below Average	Poor
Lighting					
Ventilation					
Cleanliness					
Furniture					
Equipment & tools					
Blackboards & flipchart					

Part E: Attitude towards 'Real' Fabric Draping for Design

1) The following statements concern attitude towards students training in 'real' fabric draping for design. Indicate whether you strongly agree (SA), agree (A), not sure (NS), disagree (D) or strongly disagree (SD).

POSITIVE AND NEGATIVE STATEMENTS	SD	D	NS	A	SA
'Real 'fabric draping is a difficult method to learn.					
I create patterns by 'real' fabric draping within a short time.					
I feel it's an excellent method to produce unique and intricate apparel.					
I do not need learn 'real' fabric draping as it can be self-taught.					
As a fashion student I feel more creative when using 'real' fabric draping.					
I get real satisfaction when learning 'real' fabric draping					
I will get employment faster if I learning 'real' fabric draping					
'Real' fabric draping is a technique for professional designers and not beginners.					
I feel 'real' fabric draping makes designing real for me.					
I feel competent as design student when taking 'real' fabric draping classes.					
I enjoy learning my lessons during in 'real' fabric draping lesson.					
'Real' fabric draping should be learnt by women only.					
I will get a better paying job if I learn 'real' fabric draping.					
I feel like a good fashion design student as I learn real fabric draping.					
'Real' fabric draping is a course for academic failures					
I do not have to put a lot of effort to learn 'real' fabric draping.					
It is a lesser design tool and does not need to be taught in institutions.					

Thank you for your co operation

8.4. Appendix IV; Semi Structured Interview Schedule for Fashion Designers

Name of Organization: _____

Instructions: From the options given **fill out** or **tick** appropriately in the spaces provided for the questions asked to the respondent.

1. a). Which garment design technique(s) do you utilize to produce different garment categories or patterns in your organization?

a) Flat pattern design [ ]
b) Pattern drafting [ ]
c) 'Free' hand cutting [ ]
d) Engineering [ ]
e) Draping design [ ]

b) If you use 'real' draping for design, where did you receive training (Find out whether training was done in Kenya and type of institution i.e. college or at university)?

_____

2. Which garment categories do you mostly design or construct using of 'real' fabric draping for design (*Indicate all categories given e.g. evening and wear*)?

_____

_____

3 a) State the person who does most garment design jobs that require 'real' fabric draping?

_____

b) What reason would you give for the answer stated above (2b)?

_____

_____

4. What constraints or challenges do you experience as you practice 'real' fabric draping for design?

_____

_____

_____

5. Do you think ‘real’ fabric draping for design should be taught to fashion design students (*Probe to find out why YES or NO*)?

YES [ ] NO [ ]

_____

_____

6. Which skills in fashion design training curriculum would you like improved in institutions of higher learning? (*Probe respondents to affirm the type of skills needed e.g. drawing and pattern drafting*)

_____

_____

_____

_____

Thanks you for your co operation

8.5. Appendix V; Public Institutions of Higher Learning in Kenya offering Fashion Design and Apparel Courses

NAME OF INSTITUTION	TYPE OF INSTITUTION	REGION	COURSE OFFERED
Eldoret Polytechnic	Technical Training college	Rift Valley	Certificate in clothing technology
Ol'lessos Technical Training Institute	Technical Training college	Rift Valley	
Bumbe Technical Training Institute	Technical Training college	Rift Valley	Fashion design and garment making
Rift Valley Institute of Science Technology	Technical Training college	Rift Valley	Diploma in clothing technology
Kenya Industrial Training Institute	Technical Training college	Rift Valley	Clothing technology
Rift Valley Technical Training Institute	Technical Training college	Rift Valley	Diploma in clothing technology
National Youth Service Training Institute	National training institute	Rift Valley	Diploma in textile design
University of Eldoret	University	Rift Valley	-Bachelor of science Apparel and fashion technology -Bachelor of education Home science and technology
Egerton University	University	Rift Valley	Bachelor of science in clothing, textiles and interior design
Baraton University	University	Rift Valley	Bachelor of science Fashion and textile design
Kenya Technical Teachers College	National Technical Training college	Nairobi	Diploma in technical education
National Youth Service Engineering Institute	National youth training polytechnic	Nairobi	Diploma in clothing technology
Technology Development Centre	Training institute	Nairobi	Diploma in fashion design
Kenya Textile Training Institute	National Industrial	Nairobi	Diploma in clothing technology

	Training Authority		
Technical University of Kenya	University	Nairobi	Garment making and fashion technology
Kenyatta University	University	Nairobi	-Bachelor of science Fashion design and marketing -Bachelor of Education Home economics
Thika College for the Blind	Training institute	Nairobi	Certificate in garment making
Karen Technical Training Institute for the Deaf	Training institute	Nairobi	Certificate in garment making
Murang'a University College	University	Central	Diploma in clothing technology
Kirinyaga University College	Technical Training college	Central	Diploma in fashion technology
Nyeri Technical Training Institute	Technical Training college	Central	Diploma in clothing technology
Kimathi University	University	Central	Diploma in clothing technology
Nyeri Technical Traininig Institute	Technical Training college	Central	Diploma in clothing technology
Mathenge Technical Training Institute	Training institute	Central	Diploma in clothing technology
N'kabune Technical Training Institute	Technical Training college	Eastern	Diploma in clothing technology
Wote Technical Training Institute	University	Eastern	Diploma in clothing technology
Rwika Institute of Technology	Technical Training college	Eastern	Diploma in clothing technology
Machakos University College	University	Eastern	-Bachelor of Education Home economics -Diploma in clothing technology
Meru Technical Training Institute	Technical Training college	Eastern	Diploma in clothing technology
South Eastern University College (SEUCO)	Technical Training college	Eastern	Certificate in clothing technology
Gusii Institute of Technology	Technical Training college	Nyanza	Diploma in clothing and textile

Ramogi Institute of Advanced Technology	Technical Training college	Nyanza	Diploma in clothing technology
Moi Institute of Technology	Technical Training college	Nyanza	Diploma in clothing technology
Keroka Technical Training Institute	Technical Training college	Nyanza	Diploma in clothing technology
Siaya Institute of Technology	Training institute	Nyanza	Clothing technology
Kisumu Polytechnic	Training institute	Nyanza	Diploma in clothing technology
Maseno University	University	Nyanza	-Bachelor of arts in textile, apparel Design & fashion merchandising
Shamberere Technical Training Institute	Technical Training college	Western	Clothing technology Diploma in textile design
Sangalo Institute of Science and Technology	Training institute	Western	- Clothing technology - Fashion design and garment making
Friends College Kaimosi	Technical Training college	Western	Fashion design and garment making
Machakos Technical Training Institute	Technical Training college	Coast	Diploma in clothing technology
Mombasa Technical Training Institute	Technical Training college	Coast	Diploma in clothing technology
North Eastern Province Technical Training Institute.	Training institute	North Eastern	Certificate in garment making

Source: Survey Census (Researcher, July 2011)

8.6. Appendix VI; Sample Size, Confidence Level and Confidence Intervals for Random Samples

Population	Confidence Level 90 Percent Confidence Interval			Confidence Level 95 Percent Confidence Interval			Confidence Level 99 Percent Confidence Interval		
	1	2	3	1	2	3	1	2	3
30	27	28	29	28	29	29	29	29	30
50	42	45	47	44	46	48	46	48	49
75	59	64	68	63	67	70	67	70	72
100	73	81	88	79	86	91	87	91	95
120	83	94	104	91	100	108	102	108	113
150	97	111	125	108	120	132	122	131	139
200	115	136	158	132	150	168	154	168	180
250	130	157	188	151	176	203	182	201	220
300	143	176	215	168	200	234	207	233	258
350	153	192	239	183	221	264	229	262	294
400	162	206	262	196	240	291	250	289	329
450	170	219	282	207	257	317	268	314	362
500	176	230	301	217	273	340	285	337	393
600	187	249	335	234	300	384	315	380	453
650	192	257	350	241	312	404	328	400	481
700	196	265	364	248	323	423	341	418	507
800	203	278	389	260	343	457	363	452	558
900	209	289	411	269	360	468	382	482	605
1,000	214	298	431	278	375	516	399	509	648
1,100	218	307	448	285	388	542	414	534	689
1,200	222	314	464	291	400	565	427	556	727
1,300	225	321	478	297	411	586	439	577	762
1,400	228	326	491	301	420	606	450	596	796
1,500	230	331	503	306	429	624	460	613	827
2,000	240	351	549	322	462	696	498	683	959
2,500	246	364	581	333	484	749	524	733	1,061
5,000	258	392	657	357	536	879	586	859	1,347
7,500	263	403	687	365	556	934	610	911	1,480

Source: Cohen L., Manion L. & Morrison K. (2007). Pg. 104.

8.7. Appendix VII; Random Numbers

58941	72711	39408	91620	27963	96478	21559	19246	88097	44026
02349	71389	45608	60947	60775	73181	43264	56895	04232	59604
89210	44546	27174	27499	53523	63110	57106	20865	91683	80688
11826	91326	29664	01603	23156	89223	43429	95353	44662	59433
69810	17100	35066	00815	01552	06392	31437	70385	45863	75971
81060	33449	68055	83844	90942	74857	52418	68723	47830	63010
56135	80647	51404	06626	10042	93629	37609	57215	08409	81906
57361	65304	93258	56760	63348	24949	11839	29793	37457	59377
24548	56415	61927	64416	29934	00755	09418	14230	62887	92683
66504	02036	02922	63569	17906	38076	32135	19096	96970	75917
45068	05520	56321	22693	35089	07694	04252	23791	60249	83010
99717	01542	72990	43413	59744	44595	71326	91382	45114	20245
05394	61840	83089	09224	78530	33996	49965	04851	18280	14039
38155	42661	02363	67625	34683	95372	74733	63558	09665	22610
04319	04318	99387	86874	12549	38369	54952	91579	26023	81076
18134	90062	10761	54548	49505	52685	63903	13193	33905	66936
32012	42710	34650	73236	66167	21788	03581	40699	10396	81827
78101	44392	53767	15220	66319	72953	14071	59148	95154	72852
23469	42846	94810	16151	08029	50554	03891	38313	34016	18671
35342	56119	97190	43635	84249	61254	80993	55431	90793	62603
65846	18076	12415	30193	42777	85611	57635	51362	79907	77364
22184	33998	87436	37430	45246	11400	20986	43996	73112	88474
83668	66236	79665	88312	93047	12088	86937	70794	01041	74867
90083	70696	13558	98995	58159	04700	90443	13168	31553	67891
97765	27552	49617	51734	20819	70198	67906	00880	82899	66065
49988	13176	94219	88698	41755	56216	66832	17748	04963	54859
78257	86249	46134	51865	09836	73966	65711	41699	11732	17173
30946	22210	79302	40300	08852	27528	84648	79589	95295	72895
19468	76358	69203	02760	28625	70476	76410	32988	10194	94917
30806	80857	84383	78450	26245	91763	73117	33047	03577	62599
42163	68332	98851	50252	56911	62693	73817	98693	18728	94741
39249	51463	95963	07929	66728	47761	81472	44806	15592	71357
88717	29289	77360	09030	39605	87507	85446	51257	89555	75520
16767	57345	42285	56670	88445	85799	76200	21795	38894	58070
77516	96648	51868	48140	13583	94911	13318	64741	64336	95103

Source: Gupta SP. (2004). Pg. 1425.

8.8. Appendix VIII; Table on Accessible Population

	Kenyatta University	Technical University of Kenya	Kenya Technical Teachers College	Kenya Textile Training Institute	Nairobi Technical Training Institute	Total
Heads of departments	1	1	1	1	1	5
Teachers or Lectures	10	06	04	07	05	
Total	11	7	5	8	6	37
Certificate (year 2)	-	-	-	25	04	27
Diploma (year 2)	-	12	50	17	03	86
Diploma (year 3)	-	17		15	13	36
Degree (year 2)	40	-	-	-	-	40
Degree (year 3)	38	-	-	-	-	38
Degree (year 4)	25	-	-	-	-	25
Masters (year 1)	2	-	-	-	-	2
Masters (year 2)	5	-	-	-	-	5
Total number of students	110	29	50	57	20	266
Fashion designers						30

8.9. Appendix IX; Table on Sample Size Selection

	Kenyatta University	Technical University of Kenya	Kenya Technical Teachers College	Kenya Textile Training Institute	Nairobi Technical Training Institute	Total
Head of departments	1	1	1	1	1	5
Teachers or Lectures	10	06	04	07	05	
Total	11	7	5	8	6	37
Certificate (year 2)	-	-	-	25	04	27
Diploma (year 2)	-	12	48	17	03	86
Diploma (year 3)	-	17		15	13	36
Degree (year 2)	29	-	-	-	-	40
Degree (year 3)	29	-	-	-	-	38
Degree (year 4)	25	-	-	-	-	25
Masters (year 1)	2	-	-	-	-	2
Masters (year 2)	5	-	-	-	-	5
Total number of students	90	29	48	57	20	244
Fashion designers						30

8.10. Appendix X; Fashion Design Practices Used by Fashion Designers

1.Sketch – Draping – Pattern –Toile – (Design alteration) – Pattern alteration - Sample garment
2. Draping – Pattern –Toile – (Design alteration) – Pattern alteration - Sample garment
3. Textile print on paper – Draping paper on body – (Sketch) - Pattern – Toile – (Design alteration) – Pattern alteration – Sample.
4. Sketch – Pattern – Toile – (Design alteration) – Pattern alteration –Sample garment
5. Pattern – Toile – (Design alteration) – Pattern Alteration –Sample garment
6. Existing garment – Sketch – Pattern – Toile – (Design alteration) - Pattern alteration – Sample garment
7. Existing garment – Pattern – Toile – (Design alteration) – Pattern alteration - Sample garment
Conceptual idea – Pattern – Toile – (Design alteration) – Pattern alteration - Sample garment

Source: Rissanen,T. (2007). Pg. 3-6.

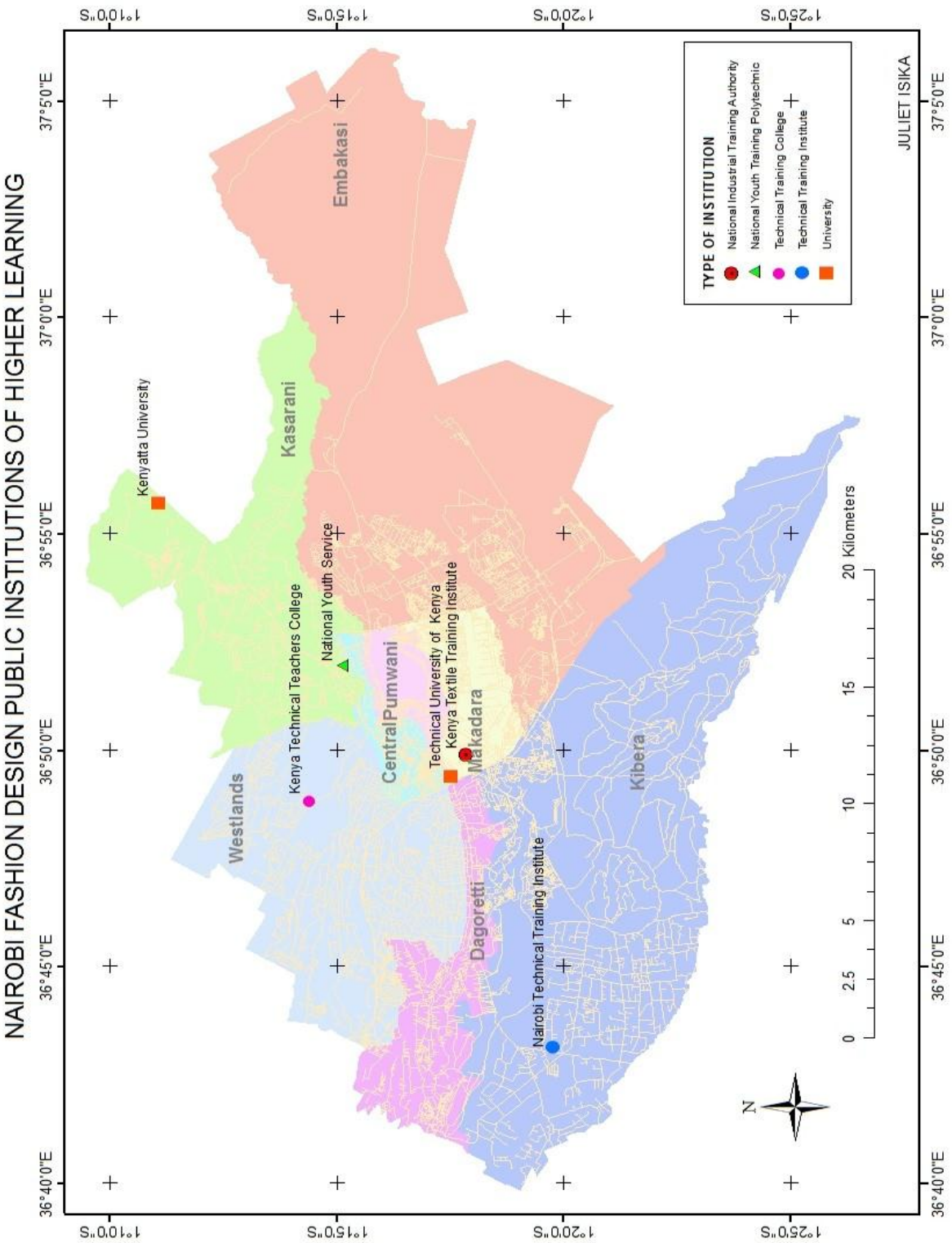
8.11. Appendix XI; Composite Results on Conditions of Infrastructure

Status of learning conditions	Frequency	Percentage
Poor condition	69	31.7
Excellent condition	149	68.3
Total	218	100.0

8.12. Appendix XII; Composite Results on Learning Resources

Availability of learning resources	Frequency	Percentage
Not available	6	22.2
Available	21	77.8
Total	27	100.0

8.13. Appendix XIII; Map of Public Institutions of Higher Learning included in the Study



8.14. Appendix XIV; Research Permit from National Council for Science Technology and Innovation

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THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Juliet Kaindi Isika
of (Address) Kenyatta University
P.O.Box 43844-00100, Nairobi,
has been permitted to conduct research in

Location
District
Nairobi Province

on the topic: Use of "real" fabric draping in Kenya: A case of public institutions of higher Learning and fashion designers in Nairobi County.

for a period ending: 30th June, 2012.

PAGE 3

Research Permit No. *NCST/RCD/14/012/988*
Date of issue *16th July, 2012*
Fee received *KSH. 2,000*

Applicant's Signature

Secretary
National Council for Science &Technology