UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Natural and Agricultural Sciences

A curriculum model for intervention in the skills training of custom tailoring apprenticeships in Kenya

Edwinah Amondi Apunda

Thesis

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Department of Consumer Science

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by

Edwinah Amondi Apunda

Thesis submitted in partial fulfilment of the requirements for the degree

DOCTOR of PHILOSOPHY

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Department of Consumer Science

UNIVERSIY OF PRETORIA

Supervisor: **Prof H.M. de Klerk**

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SEPTEMBER 2017

DECLARATION

I, Edwinah Amondi Apunda, hereby declare that this thesis, submitted for the Degree of Doctor of Philosophy (PhD) in Consumer Science: Clothing Management at the University of Pretoria, is my own independent and original work. It has not previously been submitted for a degree or examination at this or any other university.

_____ _____

Researcher's signature **Date**

SEPTEMBER 2017

DEDICATION

I dedicate this PhD degree to my Lord and Saviour, JESUS CHRIST, the greatest teacher of all. I never could have made it without you my Lord! May anyone reading this page come to know that the Lord has power over 'knowledge and wisdom', and teaches those who surrender to his council and guidance!

I also dedicate this PhD to my mother, Mrs Grace Haya Apunda, a strong advocate of education for the girl child. Mom, your sacrifice and dedication in paying fees towards my basic and high school education, and constant encouragement to believe in the power of education, taught me to never give up. You encouraged me to strive to be a living example to the poor young ones who are struggling to understand the meaning and power of education! Thank you mom for believing in me, labouring so hard to grant me the opportunity to go to school, as most parents in the neighbourhood married off their daughters (my peers) too early in their youth while still desiring to go to school. In addition, your prayers and encouragement during the PhD journey played a great role towards this accomplishment

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ABSTRACT

Kenya's economic landscape, including the labour market is characterised by a large and growing Informal Sector (IS), which employs 80% of the labour force. Dressmaking, custom-tailoring and garment manufacturing Micro- and Small Enterprises (MSEs) are among the economic activities, which dominate the IS economy. The majority of tailors working within this economic sub-sector acquire technical skills informally on-the-trade, through Traditional Apprenticeships (TAs). The tailors are, however, semi-skilled and cannot design or produce quality clothing products, thereby leading to poor performance in the economic sub-sector. Consequently, tailoring and garment manufacturing MSEs are unable to grow and can neither create the needed employment opportunities, nor foster economic growth.

The aspects of technical knowledge and skills that tailors have, influence the quality of clothing products, productivity, sales, the enterprises' survival and growth. Likewise, the quality of training influences the aspects of technical knowledge and skills that tailors may acquire and transfer to tailoring and garment manufacturing economic sub-sector. Therefore, the overall aim of the study was: to develop a curriculum model for intervention in Kenya's TAs in tailoring to improve the quality of technical knowledge and skills within the economic sub-sector.

An instrumental case study was undertaken to explore curriculum practices in TAs in custom-tailoring, to identify the aspects of technical knowledge and skills pertaining to clothing products and processes, which apprentices develop. Factors which influence the outcomes were also explored to facilitate an in-depth understanding and detailed description of the phenomenon. Based on non-probability sampling techniques, four custom-tailoring enterprises providing women's wear alongside TAs were selected to participate in the study. The embedded sub-units making up the case of TAs in custom-tailoring were instrumental in generating comprehensive data from different settings and different participants.

Participant observation as a technique was used to gather contextual data regarding what apprentices learned and how they learned. Factors influencing the quality of learning and outcomes were also observed and recorded. Semi-structured interviews guided the study to gather conversational data from four custom-tailoring enterprises. A total of four custom-tailors and 14 apprentices participated in the interview, and conversational data were audio recorded.

Qualitative data analysis techniques were used to analyse interview data from tailors and 10 apprentices due to early saturation. Data were initially analysed per sub-case to enable comparison and establish similarities and differences. Observation data were also analysed thoroughly and used to corroborate findings from interviews. Pre-determined themes, a conceptual framework and research questions guided the qualitative data analysis and interpretation of the findings.

The study established that TAs in custom-tailoring have the potential to significantly, contribute to technical knowledge and skills development in tailoring and garment making economic sub-sector in Kenya. The main findings of the study revealed that TAs in tailoring are gaining recognition by the participants – especially among graduates of Primary School Education who fail to gain access to Secondary School Education. In addition, dropouts of SSE and graduates who fail to proceed to tertiary education and training view TAs as instrumental in equipping them with skills needed to access employment in tailoring and the garment manufacturing economic sub-sector.

It was, however, apparent from the findings that apprentices mainly developed practical skills applicable to garment making processes: techniques on how to take body measurements, pattern drafting, fabric preparation for layout and cutting, construction and finishing. It was also evident that apprentices acquired minimal knowledge of construction and finishing quality, but hardly acquired knowledge applicable to pattern drafting, design, fabrics, and performance quality of garments.

The study identifies the main factors influencing the outcomes of TAs in custom tailoring as: a focus on practical activities as a result of work-based mode of skills

training, observation and trial and error mode of learning, lack of theoretical learning, a lack of teaching skills and theoretical knowledge among master-tailors, limited and outdated sewing machines, and scarcity of fabrics leading to transfer of inappropriate knowledge. The lack of support from government and developmental agencies further contributed to a focus on practical skills, as this is what the tailors could afford.

The participants expressed a need for an intervention to help them develop enhanced skills and adequate knowledge of the trade. The participants identified a comprehensive set of technical knowledge and skills that they wished to learn to improve upon their limited skills. They also expressed a need for theoretical learning to foster development of knowledge needed to complement informally acquired skills. The findings from the study are, therefore, instrumental in the development of a curriculum model, as a complementary intervention in skills training for TAs in tailoring.

The study concludes that the quality of TAs in custom-tailoring are not of the desired standard, as they lack capacity to develop knowledge relating to clothing product quality and processes. The study further concludes that the acquisition of basic and limited knowledge and skills pertaining to clothing products and processes contribute significantly to poor performance, and inability of tailoring and garment manufacturing MSEs to curb problems of lack of growth and development in the economic sub-sector.

The study recommends that government should put in more effort to take advantage of the developed curriculum model, by supporting its implementation, probably through a tailor-made programme within Formal Vocational Training (FVT). Another significant strategy is for the government to focus on utilising the tailors' potential to the full, by supporting master-tailors with opportunity to upgrade technical skills and knowledge, and access training in pedagogical skills. The study further recommends an urgent need for government to consider incorporating TAs, especially those servicing production oriented MSEs such as tailoring and garment manufacturing

that have the potential for growth in the national policy, to ensure effective planning and provision of quality skills training on a continuous basis.

The study further recommends that private manufacturing companies, such as fabric manufacturing firms and training institutions which offer courses in fashion design, clothing construction and merchandising should be encouraged to establish linkages with TAs in tailoring to extend the needed support in technical knowledge and skills training, in form of short courses to increase the economic sub-sector's knowledge base.

The findings of this study add understanding of the requirements of knowledge of clothing product quality and processes by custom-tailors in the IS in Kenya to the existing global and local corpus of knowledge.

'n Kurrikulummodel vir intervensie in die vaardigheidsopleiding van leerlingskappe in die kleremakerybedryf in Kenia.

Abstrak

Kenya se ekonomiese landskap insluitende die korporatiewe mark word gekenmerk deur ‘n groeiende Informele Sektor (IS) wat 80% van die werkers insluit. Klereontwerp gebruiksontwerp en kledingvervaardiging deur Mikro en Klein Besighede (MKB) vorm deel van die ekonomiese aktiwiteite wat dominant in die IS voor kom. Die meerderheid van die kleremakers binne die ekonomiese subsektor bekom die nodige vaardighede deur middel van informele, tradisionele praktiese ondervinding. Die kleremakers is egter nie instaat om kwaliteit kledingstukke te ontwerp en te maak nie, omdat hulle nie oor die nodige vaardighede beskik nie. Gevolglik kan die MKBs nie groei nie en word die eknomiese groei benadeel, aangesien die nodige werksgeleenthede nie geskep en ontwikkel kan word nie.

Die tegniese kennis en vaardighede van kleremakers beïnvloed die kwalitieit van die kledingstukke, produktiwiteit, verkope, besigheidsoorlewing en groei. Die kwalitieit van opleiding beïnvloed ook die tegniese kennis en vaardighede wat ontwerpers oor beskik en oordra na die ontwerp en vervaardiging in die ekonomiese sektor. Dus was die oorwegende doel van die studie om ‘n kurrikululummodel te ontwikkel vir die klereontwerpers om die kwaliteit van die tegniese vervaardiging in die ekonomiese sub-sektor te verbeter.

‘n Instrumentele gevallestudie was onderneem om die kurrikulumpraktyk in klerevervaardiging en klereontwerp te ondersoek met die doel om die tegniese kennis en vaardighede wat betrekking het op die vaardighede rakende die ontwerp en produksie van kledingstuklke te identifiseer. Faktore wat die resultate beïnvloed is

ook ondersoek om sodoende ‘n in-diepte begrip te kry van die verskynsel. Die studie het gebruikgemaak van vier besighede wat by klerevervaardiging van damesklere betrokke is. Die nodige omvattende data is so verkry van die spesifieke omgewing.

Deelnemerwaarneming is ‘n tegniek wat gebruik is om die data te verkry om lig te werp op wat die klerevervaardigers leer en die wyse waarop die kennis bekom is. Leeruitkomstes is ook ondersoek en aangeteken. Semi-gestruktureerde onderhoude is gebruik in die studie om die inligting te bekom van die vervaardigers. Vier vervaardigers en veertien werkers het deelgeneem in die onderhoude. Inligting is ook met ‘n bandopnemer opgeneem.

Kwalitatiewe data analise is gebruik as tegniek om die data te analiseer wat bekom is van tien klerevervaardigers. Data is geanaliseer per sub-geval om vergelyking moontlik te maak. Inligting bekom deur observasie is geanaliseer en resultate is geinterpreteer en vergelyk met die data verkry deur onderhoudvoering.

Die studie het bevind dat die klerevervaardigers ‘n potensïele konstruktiewe bydrae kan lewer tot die tegniese en praktiese vaardighede van die ontwerpers en vervaardigers van klere in die eknomiese sektor in Kenya. Die hoof bevindinge van die studie het aan die lig gebring dat daar gefokus word op nuwe vervaardigingstegnieke van werkers in die primêre en sekondêre onderwys en opleiding. Die student wat nie suksesvol was tydens hulle opleiding op tersiêre vlak nie, beskou klerevervaardiging as instrumenteel in die toerusting van tegnieke benodig om ‘n werk te kry.

Dit was egter duidelik dat die bevindinge basiese praktiese kennis en vaardighede ingesluit het en dat daar gefokus was op: tegnieke van hoe om liggaamsmates te neem, patrone te maak, material voor te berei, uitleg, sny, konstruksie en voltooiing. Dit was duidelik dat die werkers oor min kennis rakende die konstruksie en finale afronding tydens voltooiing van die produk beskik het. Die studie het tot die slotsom gekom dat die kwaliteit van die vervaardigers se kennis nie op standaard was nie en dat hulle kennis benodig het van die kledingsprodukte en prosessse. Die studie het ook aan die lig gebring die dat die verkryging van beperkte kennis en kundigheid

rakende kledingsprodukte, ontwerp en vervaardigingsprosesse ‘n negatiewe invloed op die ekonomie in die sub-sektor gehad het. Die studie het die hooffaktore van vervaardiging en gebruikspontwerp ingesluit. Hierdie faktore behels: ‘n fokus op praktiese aktiwiteite as n resultaat van werksgebasseerde vervaardigingsontwikkeling, observasie, en probeer en foutteer, ‘n gebrek aan teoretiese kennis en toerusting van meester vervaardigers, onvoldoende hoeveelheid masjiene en ‘n skaarsste aan materiale en ‘n probleem om die kennis oor te dra. Die gebrek aan die ondersteuning deur die regering en ontwikkelingsinstansies het veroorsaak dat kleremakers meer op praktiese ervaring gefokus het, omdat dit al was wat hulle kon bekostig.

Die deelnemers het die behoefte uitgespreek om beter toegerus te word om kennis te verwerf om hulle instaat te stel om hulle ambag suksesvol te beoefen. Die deelnemers het ‘n spesifieke stel tegnieke geïdentifiseer waarmee hulle hulp benodig het. Hulle het ook die behoefte uitgespreek om teoretiese kennis op te doen wat hulle sou instaat stel om hulle kennis uit te brei. Die bevindinge is dus belangrik, aangesien dit die leemte van teoretiese kennis aan die lig gebring het.

Die studie beveel aan dat die regering die ontwikkelde kurrikulummodel sal ondersteun as deel van ‘n formele opleidingsprogram. Die regering sal ‘n bydrae kan lewer deur te help met die opleiding in tegniese en teoretiese kennis deur die nodige onderwys en opleiding. Die vervaardigingswenke as deel van die vervaardigers se opleiding kan help om die produkte en omstandigheid van die werkers te verbreed.
Die studie moedig ook verdere kommunikasie tussen private klerevervaardigingsmaatskappy en klerevervaardigers aan wat mode ontwerp bestudeer. Die studie is ‘n uitbreiding van bestaande kennis rakende die vervaardiging van kledingstukke as produkte nasionaal en internasionaal.

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LIST OF ABBREVIATIONS

2-D	Two-Dimensional
3-D	Three-Dimensional
CBD	Central Business District
FA	Formal Apprenticeship
FET	Formal Education and Training
FTIs	Formal Training Institutions
FVT	Formal Vocational Training
GTZ	German Technical Cooperation
HKTDC	Hong Kong Traders Development Council
IA	Informal Apprenticeship
ILO	International Labour Organization
IS	Informal Sector
ISCED	International Standard Classification of Education
ISO	International Standards Organization
KEPSA	Kenya Private Sector Alliance
KYEP	Kenya Youth Empowerment Project
MoHEST	Ministry of Higher Education, Science and Technology
MSEs	Micro- and Small Enterprises
NFT	Non-Formal Training
NFVT	Non-Formal Vocational Training
PSE	Primary School Education
SITE	Strengthening Informal Training and Enterprise
SMEs	Small and Medium Enterprises
SSE	Secondary School Education
TAs	Traditional Apprenticeships
UIL	UNESCO Institute for Lifelong Learning
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
VETA	Vocational Education and Training Authority
VSP	Vocational Skills and Informal Sector Support Project
VTIs	Vocational Training Institutions

CHAPTER 1: THE STUDY IN PERSPECTIVE

1.1 INTRODUCTION AND BACKGROUND

Improving productivity of Micro- and Small Enterprises (MSEs) in the Informal Sector (IS) is essential in enhancing employment, income growth and reduction of poverty among developing countries and countries in transition (Adams, de Silva & Razmara, 2013:2). While many factors affect productivity, the level of human capital, including skills that are relevant to the labour market remains critical. Brewer (2013:iii) acknowledges the imporant role that skills development plays in increasing productivity and sustainability of enterprises as well as improving working conditions and employability of workers. Understanding how individuals are prepared with skills for IS employment is therefore, an important undertaking in the context of this study.

Dressmaking, custom-tailoring and garment manufacturing MSEs are among economic activities which dominate Kenya's IS economy (McCormick & Ongile, 1993:1; Buckley, 1997:430; Serem, 2008:6; Gadzala, 2009:209; Mbugua, Mbugua, Wangoi, Ogada, & Kariuki, 2013:286). These economic activities are not only important in meeting Kenyan consumers' unique clothing needs (Buckley, 1997:428-9; Apunda, 2002:20; Imo, Mugenda & Mburugu, 2010:6), but also have a high potential for growth (McCormick, Kinyanjui & Ongile, 1997:1095-1099; Mbugua *et al*., 2013:290), a factor often associated with an increased turnover, capital accumulation and expansion of the workforce (Haan, 2006:19-20; Kamau & Munandi, 2009).

Kenya's economic landscape, including the labour market is characterised by a large and growing IS, which employs 80% of the labour force on the one hand, and a formal economy that is diminishing in potential to create employment (Balwanz, 2012:75; Kaane, 2014:3, 23). With high youth unemployment and under-employment (Kaane, 2014:19), the government mainly looks up to the IS to provide jobs to over one million of youths who join the labour market annually (ibid, p. 21). This, however, can only be achieved through enhanced productivity within the IS economy.

The IS contributes significantly to employment creation, generation of income and reduction of poverty internationally. The International Labour Organisation (ILO) specifically recognises the predominant role the IS plays in economic development among developing and countries in transition (Hussmanns, 2004:iv; Walther & Filipiak, 2007:23,29-31; ILO, 2011). Like Kenya, most Sub-Saharan African countries, for example, Angola, Benin, Cameroon, Ethiopia, Morocco, Senegal, and South Africa draw over 75% of existing jobs, 80% of new jobs, and about 50% of national wealth from the IS (Walther & Filipiak, 2007:30). It can be argued, if considering the aforementioned trend, that efforts to ensure high productivity within the IS economy may increase youth employability and economic growth.

The informal sector is popularly referred to as an arena for MSEs, which presents a potential for economic growth and development (Haan, 2006:20; Walther & Filipiak, 2007:33). While some of the sectors' economic activities only enable basic survival, production oriented activities have the potential to transfer to the modern sector. While Kenya's dressmaking, custom-tailoring and garment manufacturing MSEs are highly recognised in this regard, they continue to perform poorly and suffer from high failure rates (Gadzala, 2009:209; Kamau & Munandi, 2009; Mbugua *et al.,* 2013:292). As of a direct consequence, most of these MSEs are neither capable of expanding to create the desired employment opportunities for most youths, nor foster the anticipated economic growth (ibid.).

The poor performance within Kenya's dressmaking, custom-tailoring, and garment manufacturing MSEs seems to be a persistent phenomenon. Studies (McCormick & Ongile, 1993; McCormick *et al.,* 1997) revealed this as early as two decades ago. From the ongoing reports, it is apparent that tailoring and garment manufacturing MSEs suffer from inherent challenges. These should be explored and understood in-depth to inform relevant intervention strategies, to spur growth within the economic sub-sector, for the country to reap their potential benefits.

A recent study (Mbugua *et al*., 2013:290), for example, established that poor marketing and entrepreneurial skills were among factors contributing to the high failure rate and lack of growth among dressmaking, tailoring and garment

manufacturing MSEs in Kenya. In agreement with this report, Naude (2010) points out that entrepreneurial and management actions play critical roles in business sustainability. Similarly, Van Scheers and Radipere (2007) echo similar sentiments that a lack of skills which contribute to entrepreneurial performance, account for high failure rates among MSEs globally.

Studies (Gadzala, 2009:211; Kamau & Munandi, 2009; Imo *et al*., 2010:76; Hoogerbrugge, 2012:20; Mbugua *et al*., 2013:290) further attribute the high failure rate among Kenya's IS dressmaking, tailoring and garment manufacturing MSEs to stiff competition, mainly from imported ready-to-wear new and second-hand or used clothing categories. Nevertheless, when examining factors which influence failure rates of tailoring and garment manufacturing MSEs, the significant role that clothing product quality plays in the selection of competing products cannot be overlooked.

Studies conducted in Kenya (Apunda, 2002:22; Edwinsson & Nilson, 2009:20-25; Imo *et al.,* 2010:68) progressively demonstrate that one of the reasons for popularity of imported over locally manufactured clothing products is their perceived superior quality. Quality factors established as contributing to low preference of locally-made over imported clothing products include: poor quality fabrics, workmanship, and fit (Nyang'or, 1994:41; McCormick & Ongile, 1993:40-41; Mason, 1998:98; Apunda, 2002:99). Clothing consumers in Kenya further reveal that compared to locally manufactured products, imported ones are more durable, provide a variety of styles and designs to choose from with exclusive and unique aesthetic appearance that reveals a touch of originality to distinguish the wearers from the rest (Hoogerbrugge, 2012:20).

The scramble for quality imported clothing products is, however, not limited to Kenyan consumers, but an international phenomenon. A report by the Hong Kong Traders Development Council (HKTDC) on clothing product consumption in five big cities of mainland China, for example, showed that consumers who aimed at high-end clothing products preferred popular foreign brands (HKTDC, 2002). Likewise, Lee (2002) and Kwan, Yuen and Au (2003) concur that the overwhelming preference of imported over locally manufactured clothing products by most consumers was due

to guaranteed quality in the former category. Likewise, a study in Shangai (Delong, Bao, Wu, Chao, & Li, 2004:149) reported that consumers evaluated US brands higher than local brands with respect to design, innovation and workmanship. In this regard, innovation was associated with fashionable creations, sophisticated sewing techniques and newly invented fabrics. These in essence are aspects of clothing product quality.

From the theory of clothing product quality (Chase & Quinn, 2003:8; Brown & Rice, 2014:69, 78), there is no doubt that Kenyan clothing consumers, like those in other parts of the world simply seek clothing products with quality attributes that can meet their functional and aesthetic expectations. When consumers perceive clothing product quality to fall short of meeting their expectations, they become reluctant to buy the products and readily look for more suitable alternatives. It is for this reason that Brown and Rice (2014:70; 78) emphasise the need for clothing manufacturing professionals to have adequate knowledge of clothing product quality and processes, to enable them to design and develop products with the potential to meet customers' quality expectations.

By aligning their clothing consumption pattern to those products that are perceived to have better quality, Kenyan clothing consumers demonstrate that there is a consumer market that is willing to identify with clothing products of high quality irrespective of origin. Therefore, it can be argued that dressmakers, custom-tailors and garment manufacturing MSEs with adequate knowledge of clothing product quality and production processes and the capacity to design and develop quality products may thrive within the economic sub-sector.

A research study (Edwinsson & Nilson, 2009:21) revealed that Kenyan tailors tend to have limited knowledge of clothing product quality. Consequently, finding skilled tailors who could produce quality clothing products was difficult. The case of IS tailoring and garment manufacturing MSEs can, however, be further complicated by lack of specialisation and the consequent need for highly skilled tailors, who can perform all tasks pertaining to design and production of whole garments single-handedly (McCormick *et al*., 1997:1098). When compared to their skilled

counterparts, semi-skilled tailors were found to produce poor quality and undifferentiated products. Skills limitation, therefore, compounded the problem of low demand, prevalence of poverty, poor performance and lack of growth among IS tailors and garment manufacturing MSEs in Kenya (ibid.).

The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2012:254) points out that skills are vital for poverty reduction, economic recovery and sustainable development. For young people with appropriate skills, IS work can be a more attractive option, given the potential for high returns (ibid.). Following this, the researcher argues that adequate technical knowledge and skills may increase productivity and performance of dressmaking, tailoring and garment manufacturing economic sub-sector and reduce poverty among most tailors. The lack of knowledge of clothing product quality among dressmaking, tailoring and garment manufacturing MSEs, thus raises a concern over means of technical knowledge and skills development for dressmakers and tailors working within Kenya's IS economy.

Studies (McCormick & Ongile, 1993:15-16; Buckley, 1997:428; Nelson 1997:36; Haan, 2002:6) show that the majority of dressmakers and tailors in Kenya acquire technical skills through Traditional Apprenticeships (TAs). TAs in tailoring are however, not limited to Kenya, but widespread across the continent of Africa, for example, Tanzania (Nübler, Hofmann & Greiner, 2009), Senegal (Shiohata & Pryor, 2008) Ghana and Nigeria (Haan, 2006) and Liberia (Lave, 1977, 1982). Furthermore, TAs not only provide skills training within tailoring trade, but also play a crucial role in technical skills development for most IS production and service-oriented MSEs across developing economies in general (Walther, 2011; Adams, 2012; 2013; Brewer, 2013:23). UNESCO (2012:271) particularly recognise TAs as important modes of technical skills development for IS workers. For this reason, this important document advocates for policies which can foster development of technical skills, especially among small and medium enterprises (SMEs) which have a growth potential (ibid.).

Following the recognition of TAs as important modes of skills development for the IS in general, the poor performance among the majority of Kenya's IS tailoring and

garment manufacturing MSEs which depend on TAs for skills, raises concern regarding curriculum practices in TAs in tailoring, and more specifically the aspects of technical knowledge and skills which apprentices acquire. To date, it is still unclear whether tailoring apprentices in Kenya acquire adequate technical knowledge and skills needed for skilful and productive performance. The dearth of empirical studies on curriculum practices in TAs in tailoring in Kenya warrants an in-depth investigation, to shed light on the forms of knowledge and skills that TAs in tailoring develop. Such a study may also highlight any challenges associated with curriculum practice and particularly how they impact on the outcomes.

1.2 KEY CONCEPTS OF THE STUDY

Key concepts in this study include: traditional apprenticeships and associated limitations; custom-tailoring, dressmaking and general tailoring; knowledge of clothing product quality and processes; curriculum theory, curriculum model and associated curriculum concepts; knowledge and related concepts; technical skills and skills development.

1.2.1 Traditional apprenticeships (TAs) as a model of technical knowledge and skills development

While the ILO (2012:1) prefers to use the term Informal Apprenticeships (IAs), UNESCO (2012:271) uses Traditional Apprenticeships (TAs). In the context of this study, the use of TAs encompasses IAs. TAs are modes of skills training that enable apprentices to acquire trade- or craft-specific skills in an MSE. An apprentice learns while working alongside an experienced craftsperson (ILO, 2012:1). This is unlike the Formal Apprenticeships (FAs), where apprentices acquire skills for a trade/craft in an enterprise through learning and working alongside an experienced craftsperson, and complements this with classroom-based instruction (ILO, 2012:7). Furthermore, in TAs, the apprentice and the master-craftsperson share the costs of training. However, training costs in FAs are shared between apprentices, master-craftsperson/employer and the government. TAs are therefore self-sustaining while FAs, to a certain extent, enjoy government support.

The ILO (2012:1-2) points out that TAs are beginning to attract renewed policy interest after long term exclusion, from the national training policy by most African governments. This follows the recognition that TAs provide skills training to a far greater number of youths compared to Formal Training Institutions (FTIs) in most countries. This is not only due to its cost effectiveness to the poor majority, but also its flexibility to youths who lack formal education, and therefore, are often excluded from access to FTIs (Haan, 2006:160; Adams, 2011:8; UNESCO, 2012:271). The fact that tools and equipment have to be purchased specifically for learning, often makes FTIs very expensive. On the other hand, the availability of tools and equipment needed to develop technical skills within the MSEs in the IS makes TAs cost-effective (ILO, 2012:2). Furthermore, FTIs have limited capacity and potential to cater for all youth who seek to improve their skills (ibid).

The popularity of TAs in Africa is further illustrated by the fact that it provides 90% of skills training in Ghana (Johanson & Adams, 2004; Palmer, 2009; Adams, 2011:3) as well as in Benin, Senegal and Cameroon (Haan, 2006:161, 163; Walther & Filipiak, 2007:175). This stands in contrast with the low percentage of youths who attend FTIs in the highlighted countries (ILO 2012:11). Kenya is no exception to this as it is estimated that more skills training occurs through TAs than all FTIs combined (Ferej, Kitainge & Ooko, 2012:14). It should also be noted that TAs are not only popular in Africa, but account for 75% of skills training in Pakistan (UNESCO, 2012:271). TAs also plays a predominant role of skills training in India and countries in the Middle East (Eichhorst, Rodríguez-Planas, Schmidl & Zimmermann, 2012:27).

Despite its popularity, TAs worldwide suffer from multiple limitations. These not only impact on the quality of technical knowledge and skills (ILO, 2012), but also on the graduates' performance as well as productivity, sustainability and growth of MSEs within the IS (Haan, 2006:45). Unlike the formal sector work which requires specialisation, IS work lacks specialisation and therefore, requires an immense variety of technical knowledge and skills to enable performance of multiple functions (Unluhisarcikli, 2001:446; Haan, 2006:45; Adams, 2008:24). An understanding of limitations associated with TAs may provide information regarding the relevant interventions needed to enhance quality of skills training.

1.2.1.1 Limitations of TAs as models of technical knowledge and skills development

Unlike Formal Education and Training (FET), TAs from a lack of legal framework to enforce training standards (ILO, 2012). It has been noted that informality in TAs bears certain risks to the apprentices involved, with the potential of low training quality being a major concern (Eichhorst *et al.,* 2012:30). Whereas FET and Non-Formal Training (NFT) are usually underpinned by well-defined goals, a structured curriculum and training methodology (Liimatainen, 2002:12-14; Haan, 2006:45; 180; Walther & Filipiak, 2007:75; Adams, 2008:13), TAs are informal training and as such essentially lack curriculum and / or predefined and structured learning activities. These factors consequently cause TAs to be ineffective in aiding apprentices to develop adequate trade-specific knowledge and skills (Johanson & Adams, 2004:16).

The ILO (2012:1) observes that TAs are generally work-based and may follow an informal training plan. TAs mainly derive learning activities from tasks within the enterprises (Johanson & Adams, 2004), which result in acquisition of skills needed to complete tasks specific to the MSEs (Haan, 2006:160) as outcomes. Relying on TAs as the only mode of skills development may therefore, lead to development of a narrow set of skills, mainly those specific to the available tasks and often limited to the entrepreneurs' (master-trainers) level of technical expertise, and the work context (Frazer, 2006; Haan, 2006). Collins (2006:48) also argues that TAs are often limited in scope, since learning activities do not arise from pedagogical concerns, but from the demands of the job.

TAs generally employ purely practical learning methods (Eichhorst *et al.,* 2012:28). This subjects apprentices to learn from observing the craftsmen at work in their trades and skills such as tailors, mechanics, painters, bakers, carpenters, joiners, welders and hair dressers. Learning through observation might be restricted only to the production of specific type of output. As a consequence, it leaves apprentices with only partial knowledge of their respective trade upon completing training.

TAs employ learning-by-doing, repetition, as well as trial and error based on observation of on-going activities at the workplace (Haan 2006:160; Adams, 2008:13; Anokye & Samuel, 2014). This might only lead to '*knowing how to reproduce, copy and-or improve an object'* (Walther & Filipiak, 2007:75). These outcomes often limit completers of TAs from developing the ability to adapt to any challenges that are likely to arise from work, especially those which require application of complex knowledge that relates to theoretical aspects. In relation to this, Collins (2006:48) points out that TAs evolved to teach specific methods of carrying out practical skills, which are readily available to both learners and teachers to observe, comment on, refine, and correct. These techniques of learning and work often lead to concrete physical products as major outcomes. However, TAs can be limited when it comes to learning the invisible aspects of knowledge as it lacks the ability to allow thought processes within the experts' minds to be made known to learners.

Haan (2006:181) argues that the quality of training often depends on the master-trainers' knowledge of the trade. Regrettably, the majority of master-trainers usually have low education, limited understanding of trade-related theory, and therefore, hardly consider theoretical learning as part of training. TAs therefore lack the capacity to develop theoretical knowledge (Liimatainen, 2002:12; Haan, 2006:161; Adams, 2008:13). These factors not only constrain the graduates' understanding of their trade, but also the development of ability to diversify and innovate.

Haan (2006:239-340), however, argues that apprentices need theoretical training to help them grasp the basics of their trade. These may include: basic knowledge of tools and materials, simple practical abilities such as measuring, how to calculate quantity of materials, elementary reading of drawings; and provision of relevant theory that underpins trade practices. In addition to these, apprentices require expanded training in vocational skills and knowledge, which includes exposure to different types of equipment. It also demands rectification of improper knowledge and practices transferred in TAs, basic reading of drawings and an introduction to more advanced techniques and technologies in the trade.

The ILO (2012:46) further points out that TAs suffer from a lack of access to new skills and technology which leads to inadequate technical knowledge and skills among master-trainers and their apprentices. It is, however, argued that better and more up-to-date skills would enable master-trainers and apprentices to improve productivity, increase income, diversify products and services and potentially broaden the businesses' customer base. This may encourage involvement in national and global value chains and improve local production capacity. Moreover, access to theoretical knowledge and modern skills would permit small businesses to better adapt to rapidly changing environments, and consequently enhance adaptability and employability of graduates of TAs.

Haan (2006:238) convincingly further argues that unless naturally gifted, many master-trainers lack knowledge on how to train. However, access to training in pedagogical skills can gradually improve master-trainers' skills training quality. Collectively, the outlined factors make it hard for TAs to provide purposeful teaching, and instead rely on on-going trade activities to teach (Ünlühisarcikli, 2001:445).

In the light of the advanced limitations, Haan (2006:236) and the ILO (2012:46) suggest that efforts focusing on upgrading of skills acquired through TAs may remedy the associated weaknesses and improve upon quality and efficiency. Consequently, core interventions if any, need to focus on provision of complementary training programmes for both master-trainers and apprentices, to up-grade and up-date technical skills, improve teaching methods and supplement practical skills transferred by the master-trainers with theory and more advanced technical and technological knowledge. Efforts to improve upon quality of TAs may also include an introduction of pre-determined training plans (Haan, 2006:182). Given the limited studies on TAs in tailoring, it is still unclear whether Kenya's current tailors and their apprentices have access to any on-going training interventions aimed at improving technical skills acquired through TAs. Knowledge of such measures are, however, important in accounting for the aspects of technical knowledge and skills, which apprentices in TAs in tailoring eventually transfer to tailoring and garment manufacturing MSEs in the country.

Following the emerging importance of TAs internationally, the UNESCO (2012:271) advocates for policy interventions tackling unemployment among developing countries to pay focused attention to TAs. It is believed that such measures may enable the majority of youths with no access to FET opportunity to acquire enhanced technical skills and knowledge needed to access descent employment. In the same vein, the ILO (2012:2) asserts that efforts to improve technical and vocational skills of youths to render them more productive, can help to break the vicious cycle of poverty, enhance employability and improve prospects for a well-paying and decent job among youths. Walther and Fillipiak (2007:13) argue that the time has come to acknowledge modes of skills-training within the IS including TAs, and recognise content and level of knowledge and skills acquired through them and incorporate the best skills development schemes and practices into a comprehensive reform of existing training systems.

TAs in tailoring in Africa have previously been studied. Lave (1977; 1982) studied number problem solving within the context of TAs in tailoring in Liberia. Similarly, Shiohata and Pryor (2008) compared the influence of TAs and formal training in tailoring on learners' literacy skills in Senegal. Both studies revealed that apprentices developed cutting, sewing, and finishing skills through learning by doing as well as by observation. Despite these publications, little research has been done on the aspects of technical knowledge and skills which current tailoring apprentices in Kenya develop.

1.2.2 Custom-tailoring/dressmaking and general tailoring

Custom-tailoring traditionally entails working with clients to create clothing products, which are tailored to their specific needs, body types, and size (Glock & Kunz, 2005:196). Custom-clothing may or may not be designed ahead of time. However, a common practice often encompasses sizing and sewing of products specifically for the individual purchasing the items, mostly using machine-sewn construction techniques (Shields, 2011:xvii).

Di Lorenzo (2010:3) points out that the process of custom-tailoring commences with the client's first visit to the tailor. The two then discuss details of the garment, in terms of design and materials with respect to style, climate, and considerations such as where, when, and for what purpose the garment will be worn. Once decisions concerning the garment's details are made, the tailor obtains the client's body measurements to create personalised patterns for the specific garment. Patterns can be made from scratch (Aldrich, 2008:178). Alternatively, any existing patterns can be adjusted to the client's measurements for the preferred fit (Rasband, 2002:359; Frings, 2005:6).

Dressmaking refers to a professional work which is oriented towards the clients' orders rather than the dressmaker's design creations or ideas (Koskennurmi-Sivonen & Pietarila, 2009:252). This however, does not imply that dressmaking does not require creativity, especially if the dressmaker adapts an industrial orientation and offers own designs for custom-clothing.

This study uses the terms custom-tailoring and dressmaking interchangeably to refer to an individual tailor, who manufactures complete garments single-handedly. The tailor is not limited to customers' orders, but may also enjoy the privilege of making own designs for sale to any interested individuals and-or clothing retailers. The tailor, therefore, plays the role of a designer, garment producer and a retailer. These multiple roles require a great deal of knowledge and skills to result in a successful garment.

Di Lorenzo (2010:1) notes that the concept of tailoring was initially limited to construction of menswear. However, the concept today refers to all types of modifications to a garment, regardless of style, purpose, or the measurements of all people irrespective of gender or age. Moreover, tailoring is not only an art, but also a craft that is built from a particular set of skills performed in a series of essential steps. Almost all tailors perform the following tasks:

- Select a design;
- Select the materials;
- Take a client's measurements;

- Develop the first pattern;
- Develop the first prototype garment or the toile;
- Cut and develop the final garment; and
- Make any necessary adjustments to fit the client.

Keiser and Garner (2003:18) further add that custom-made clothing manufacture requires vast knowledge and creativity to meet the varied customers' needs and expectations. In regard to this, Tate (2004:79-81) identifies knowledge and skills needs of custom-designers who create garments for private customers single-handedly as related to: understanding customers' design needs, creation of designs to meet the diagnosed needs, the ability to obtain accurate body measurements, and a good grasp of pattern making skills. Koskennurmi-Sivonen and Pietarila (2009:256) further describe a custom-tailor's approach to custom-clothing production as consisting of processes of design, pattern making, and construction (sewing and finishing). Custom-tailoring is quite demanding in terms of knowledge in comparison with general tailoring and garment manufacturing. Custom-tailoring is subject to solving problems relating to designs/styles, garment types, materials/fabrics, construction, finishing, body shapes and needs which often vary with each order (Tate, 2004; Brown & Rice, 2014). As such, knowledge of principles underpinning all these is critical to delivery of high quality clothing which accentuate and flatter customers to derive satisfaction.

From the advanced literature, it is evident that lack of specialisation in traditional tailoring, dressmaking and custom-tailoring makes technical knowledge and skills requirements more demanding than is the case in contemporary industrial ready-to-wear clothing manufacture. McCormick *et al.* (1997) reported that dressmaking, custom-tailoring, tailoring and garment manufacturing MSEs in Kenya lacked specialisation, therefore, only highly skilled tailors were able to reach the level of creativity and productivity needed to earn better incomes and foster growth.

It, therefore, follows that a dressmaker, a custom-tailor or a general tailor within the context of this study, should have technical knowledge and skills which can readily be adapted to any emerging challenges within the IS including the varied customers'

clothing needs and expectations. These may include: fashion creativity and/or the ability to create original designs in accordance with the diverse customers' aesthetic and functional clothing needs. An understanding of the range of technical knowledge and skills requirements for clothing manufacturers in general may further inform about the aspects of technical knowledge and skills that may be needed for dressmaking, custom-tailoring and general clothing manufacturing.

1.2.3 Clothing product quality

Clothing product quality refers to a garment's degree of excellence and conformance to the requirements; and-or the extent to which a garment meets the consumers' expectations (Brown & Rice, 2014:69). A garment which meets a particular consumer's expectations can hence, be regarded as of good quality.

Kadolph (1998:13) acknowledges that meeting the consumers' quality expectations of a product, demands the manufacturer's understanding of characteristics which contribute to the product's quality. The manufacturer also needs to know strategies for engineering quality into the products, should be in a position to measure the products' quality objectively, and know how to improve on the quality and-or production processes.

Marshall, Jackson, Stanley, Kefgen and Touchie-Specht (2004:333) equally recognise the need for fashion professionals to have knowledge of factors which influence clothing product quality. The knowledge can be helpful in making important decisions, i.e., selection of components and characteristics to include in clothing product design and development. This is important in ensuring that the product will meet consumer satisfaction during use and care.

Marshall *et al.* (2004:337) further emphasise that clothing product quality is determined by the characteristics of each of its components. These range from the fibres used to construct the fabric to the last intricate detail, which influence the final appearance and performance of the garment. Although quality may be evident in the external appearance of the garment, it is also embedded in the hidden details such

as interfacings, linings, and construction techniques. All these features affect the garment's appearance as well as its shape and wear retention. The literature suggests that it is not enough for a dressmaker, custom-tailor or a general tailor working in a small enterprise to simply know how to design a garment, create patterns, cut, construct and finish a garment, but should also understand how these components work together in the designed garment to meet the customer's quality expectations.

Rosenau and Wilson (2014:262) believe that quality is a strategy to stay in business. In agreement, Brown and Rice (2014:68) view quality as a key factor in production, marketing, buying and selling of clothing products. Knowledge of quality is essential in designing and developing products which can delight and entice consumers to become loyal to the business, and is critical to the businesses' survival and growth (Kadolph, 1998:7, 16; Brown & Rice, 2014:68). The key to delivery of quality, however, lies in having adequate knowledge of clothing product quality (Marshall *et al.,* 2004:334; Brown & Rice, 2014:70).

1.2.3.1 Dimensions of clothing product quality

An understanding of the dimensions of clothing product quality is important to clothing manufacturing professionals in designing and development of clothing products with the potential to satisfy consumers' quality expectations (Brown & Rice, 2014:68). Clothing products have physical features (design, fabrics, construction and finishing) which determine what a garment is. These physical features also influence the performance (aesthetic and functional) qualities of a garment (Brown & Rice, 2014:69). This means that it is not enough for clothing manufacturers to only understand the physical and performance features of clothing products, but also how the physical features impact on the performance features.

1.2.4 Garment making processes

In addition to knowledge of clothing product quality, knowledge of principles on how to obtain accurate body measurements and their application in pattern making are

important skills in traditional tailoring (Di Lorenzo, 2010:37-8). These processes aid the conversion of Three Dimensional (3-D) design into Two Dimensional (2-D) patterns, thereby aiding in cutting the components of the designed garment to be made (Aldrich, 2008; Joseph-Armstrong, 2010). Knowledge of techniques of fabric preparation for layout and cutting are equally essential skills in custom-design (Tate, 2004:80; Di Lorenzo, 2010:15-17).

Once the patterns are cut, construction and finishing processes follow. Custom-tailoring entails the making of the entire garment by one person (Shaeffer, 2014:11). This requires a highly skilled individual to perform all construction and finishing operations.

From the advanced literature, it could be argued that TAs in tailoring in Kenya may benefit prospective dressmakers, tailors and the general IS tailoring and garment manufacturing MSEs more, by offering a curriculum which strives to develop the range of knowledge of clothing product quality and processes. This may foster enhanced understanding and application of the knowledge and skills to practice. The extent to which the curriculum for TAs in tailoring in Kenya aid the development of the outlined set of knowledge and skills is not yet known.

1.2.5 Curriculum theory and associated concepts

From the educational perspective, a curriculum encompasses knowledge or subject matter or learning activities; the organisation of the knowledge, the teaching and learning strategies; as well as the assessment criteria (Winberg, Engel-Hills, Garraway & Jacobs, 2011:13). Curriculum theory provides the principles which underpin the process of knowledge selection. These principles help to ensure that the selected knowledge is relevant and adequate to the purposes of engagement in the particular learning (Booyse & Du Plessis, 2008:24; Hoadley & Jansen, 2012:35). In addition, curriculum theory provides the tools needed to engage in the analysis of curriculum to enable its comprehension and explanation (ibid.).

Curriculum model is defined by Langenbach (1993:2) as the plan that creates access to education and training. A model is a simplified, yet communicable representation of a real-world setting or situation (Finch & Crunkilton, 1999:28-29). For this study, a curriculum model for tailors and dressmakers is viewed as a conceptual structure which outlines the content of knowledge of clothing products and processes which apprentices need to learn. The model may also suggest learning strategies which are likely to support the development of the varied aspects of knowledge that are established empirically.

Curriculum practices within TAs in tailoring encompass all aspects of knowledge and skills which apprentices develop, the selection and organisation of learning activities which enable the development of technical knowledge and skills, the manner in which the activities are taught and learned, and any challenges which impact on the processes of knowledge and skills development.

1.2.6 Knowledge and related concepts/terms

Knowledge is the subject matter that is presented to learners as learning experiences **(**Marsh & Willis, 2003:23**).** However, knowledge as a concept also encompasses the ways of knowing, which may occur in two different ways (Deng & Luke, 2008:68), namely:

- 'Knowing that' which relates to the propositional, theoretical or formal knowledge. This aspect of knowledge is derived from discipline; and
- 'Knowing how', which relates to the use of practical knowledge which is embedded in human practice and action.

The two aspects of knowing can respectively be referred to as propositional knowledge and knowledge of how to do things (Deng & Luke, 2008:68). These aspects of knowing are important to the current study in that knowledge of clothing products and processes as outlined in the background are not limited to practical aspects which are embedded in action, but also have the theoretical aspects, which according to Billett (2000:272) foster understanding.

Theoretical knowledge encompasses the theory of a subject or an area of study, rather than its practical application (Stevenson, 2010). Theoretical knowledge also refers to a system of ideas intended to explain something, especially based on general principles independent of the thing being explained, or a collection of propositions used to illustrate principles of a subject (ibid).

Technical skills are usually associated with physical attributes needed to perform tasks pertaining to a particular practice (Clarke & Winch, 2004:509; Winch, 2015:168). Winch (2015:168) asserts that a skill is central to any vocational activity worthy of its name. However, equating technical skills to practical ability can be hopeless as this is limited to basic tasks. As such, a more inclusive definition of technical skills may include the strategic application of systematic knowledge and technical knowledge which underpin an occupational practice (Clarke & Winch, 2004:509). Winch (2015:168) further conceptualises the concept of a skill as encompassing intellectual abilities such as mental arithmetic.

Acquisition of a skill is however different from mastery of a technique or a procedure for carrying out a task. Someone may master a procedure but has not acquired the associated skill (Winch, 2015:169). If the procedure cannot be applied in appropriate operational circumstances, then the skill has not been acquired. Furthermore, acquisition of a skill requires elements of experience and character needed to perform relevant tasks skilfully in appropriate contexts. Likewise, Clarke and Winch (2004:519) argue that the most effective way to develop technical skills entails acquisition of knowledge of the applicable theory and practice appropriately informed by theory. This implies that learning strategies which include both practice and theoretical instruction may enable tailoring apprentices to develop adequate and relevant knowledge of clothing products and processes.

Skills development refers to acquisition of practical competencies, know-how, and attitudes to perform a trade or occupation in the labour market, either through formal public or private schools, institutions or centres, non-formal semi-structured training or informal TA (King & Palmer, 2010:136). However, Johanson and Adams (2004:37) view skills development as a goal-oriented process which focuses on

acquisition of knowledge and skills of a specific trade as the main outcome. It is apparent that the combined descriptions suggest that mastery of skills alone, without the knowledge which underpins practice of tailoring and garment manufacturing can be limiting and may disadvantage both tailors and enterprises who look up to TAs to develop technical skills for work in the IS.

1.3 PROBLEM STATEMENT

Research (McCormick *et al.*, 1997; Kamau & Munandi, 2009; Mbugua *et al*., 2013) highlights the prevalence of poor performance, lack of growth, and high failure rate among Kenya's IS tailoring and garment manufacturing MSEs. These problems are partly attributed to poor product quality, limited knowledge of clothing product quality among dressmakers and tailors, and a lack of skilled tailors who can produce quality clothing products in the country (McCormick *et al*., 1997; Edwinsson & Nilson, 2009).

The rather limited, general and old sources of information (McCormick & Ongile, 1993; Buckley, 1997; McCormick *et al*., 1997, 1998) suggest that the majority of tailoring and garment manufacturing MSEs in Kenya acquire technical skills through TAs in tailoring. However, the tailors are often semi-skilled which contributes to poor performance of tailoring and garment manufacturing MSEs. Apart from this limited information, information on curriculum practices in TAs in tailoring and the outcomes is scarce. For example, the aspects of technical knowledge and skills which tailoring apprentices develop through TAs are still not well understood. Tailoring and garment making MSEs may perform poorly due to various reasons with knowledge and skills pertaining to clothing product quality and processes being one of them. It is also unclear whether TAs in tailoring suffer from limitations similar to those associated with TAs in general as discussed in section 1.2.1.1.

While it is apparent that numerous factors which impact on curriculum practices within TAs in general warrant some form of intervention, McGrath (1995:2) cautions that any intervention into TAs should be based on rigorous analysis of the particular local context within which the economic sub-sector thrives, rather than depending on broad generalisations. Correspondingly, researchers (Nelson, 1997; McGrath,

2002:418; Johanson & Adams, 2004:16; Haan, 2006) express a need to explore TAs in-depth to devise practical measures to improve upon quality of TAs and on the quality of the acquired skills specifically.

While there is no doubt that TAs are crucial to IS workers' professional development, Walther and Filipiak (2007:190) regret the lack of knowledge of the types and levels of skills acquired informally or the specific trades that structure their activities. The authors further lament that no study has truly mapped trades in the IS, let alone drawing up occupational standards that underpin them. The lack of mapping of existing human capital can, however, be more than detrimental following an almost insurmountable difficulty, likely to be encountered by countries wishing to incorporate IS workers' skills development into national qualifications systems. Moreover, policy makers who wish to develop training based on existing skills of craft workers and micro-entrepreneurs to upgrade them, often fail due to lack of mapping. The lack of skills-mapping further poses an even greater handicap for projects aimed at accrediting prior experiences. Following these concerns, Walther and Filipiak (2007:190) conclude that skills mapping should form a priority for study and research and should be attended to urgently among the reforms planned by the various African countries.

Following the recognition of the crucial role that TAs play in reaching a greater population of the youths with skills training compared to FVTIs, the ILO (2012) and UNESCO (2012) have called on governments in Africa to devise measures of recognising skills acquired through TAs, including finding strategies on how to improve upon the acquired technical skills.

From the literature and research, it is evident that not much research has been conducted (especially in Kenya) on curriculum practices in TAs in the tailoring and garment manufacturing sub-sector. In response to the above calls, the current study seeks to explore and provide evidence on the aspects of knowledge and skills of clothing products and processes which apprentices develop, as well as factors which impact on the development of the outcomes. By mapping the aspects of knowledge of clothing products and processes that apprentices develop and the associated

challenges, the study is likely to establish their knowledge and skills needs, which are crucial in informing the development of a curriculum model as the study's overarching goal. Until the time of the current study, no published studies relating to the phenomenon which the current study seeks to explore, could be found.

1.3.1 The main aim of the research study

The overall aim of the study was therefore, to develop a curriculum model for intervention in Kenya's TAs in tailoring. To achieve this aim, the study had to be undertaken in two phases. The first phase was empirical, designed to specifically generate data needed to inform about the aspects of technical knowledge and skills that apprentices develop. The findings from the empirical phase formed the basis for addressing the study's main aim (second phase) which was secondary in nature. The term secondary in this study, entails the use of selected theoretical models of curriculum development and theories of clothing product quality and process to validate findings on the aspects of technical knowledge and skills which are grounded in the empirical data. These eventually formed the knowledge content of the curriculum model to be proposed for intervention in skills training of tailoring apprentices. This is addressed in Chapter 7 of the study. The empirical research study (Phase 1) was guided by the following research questions:

1.3.1.1 The main research question and sub-research questions guiding the empirical phase of the research process

Creswell (2009) states that unlike quantitative research, qualitative research should not be based on research objectives or research hypotheses, but research questions. In addition, qualitative researchers are required to set broad and flexible research questions that are not variable driven (Salkind, 2010: 1160). There are two types of research questions: central/main question and sub-questions are instrumental in qualitative research (Creswell, 2016:797). The central/main research question is the broadest question about the qualitative topic under investigation. According to qualitative research protocol, the purpose of the study should be reframed into one main research question that is broad enough to cover the

phenomenon under investigation (Creswell, 2016:94). This question is however unlike the quantitative research questions that are often narrowed down to specific variables that can be related (ibid.). Following these guidelines, an empirical research study was designed to explore curriculum practices in TAs in tailoring in Kenya, in order to understand it in-depth to enable detailed description of the information needed to fulfil the overall aim of the study. The following main research question was specifically formulated to guide the empirical phase of the research study:

- **How do TAs in tailoring in Kenya describe curriculum practices which lead to the development of knowledge of clothing product quality and processes needed for optimum participation in the trade?**

Qualitative research protocol further dictates that the main research question be restructured into sub-research questions not exceeding seven topics or parts of the phenomenon under investigation (Creswell, 2019:99). The sub-research questions are key in generating qualitative data through observations, interviews or documents and/or artefacts (ibid.). The sub-research questions should always begin with “what’ or “how” but not “why”, focus on a single aspect of the phenomenon or concept, yet remain open-ended. The questions should also specify the participants and the study site where necessary (Creswell, 2016:99). The following four sub-research questions were therefore formulated to direct the empirical phase of the study (**Phase 1**):

1. What aspects of knowledge of clothing products and processes do TAs in tailoring in Kenya develop?
2. How do TAs in tailoring in Kenya identify and organise knowledge of clothing products and processes to teach apprentices?
3. How do TAs in tailoring in Kenya develop knowledge of clothing products and processes?
4. What challenges if any do TAs in tailoring in Kenya encounter with regard to the development of knowledge of clothing products and processes?

The sub-research questions were further converted into more general research objectives as opposed to specific research objectives, which is usually the case in quantitative research (Creswell, 2009). The emergent nature of qualitative research

and case study specifically, does not allow for formulation of specific objectives (ibid.), as the research aim is to explore and the findings are often not fixed (Salkind, 2010). However, in this study, the researcher opted to set more general objectives as a guide to readers who may not be conversant with the qualitative research protocol about the aspects of field data to explore. The sub-research questions were basically reframed to reflect general objectives as follows:

Objective 1: To explore and describe the aspects of knowledge of clothing products and processes that TAs in tailoring in Kenya develop;

Objective 2: To explore and describe the sources, selection and organization of knowledge of clothing products and processes into a curriculum for TAs in tailoring in Kenya;

Objective 3: To explore and describe the teaching and learning techniques that TAs in tailoring in Kenya employ in order to develop knowledge of clothing products and processes; and

Objective 4: To explore and describe any challenges that TAs in tailoring in Kenya may experience with regard to development of knowledge of clothing products and processes.

1.4 RATIONALE AND SIGNIFICANCE OF THE STUDY

Reports regarding poor performance and inability of Kenya's IS tailoring and garment manufacturing MSEs to expand and foster economic growth (McCormick & Ongile, 1993; McCormick *et al.,* 1997; Kamau & Munandi, 2009; Mbugua *et al.,* 2013) are important to this study. The significance of technical knowledge and skills to the enterprises' productivity and performance, eradication of poverty and creation of employment opportunities for the youth has also been acknowledged (Johanson & Adams, 2004; Haan, 2006; Adams, 2008; UNESCO, 2012; Adams *et al*., 2013). Therefore, exploration of the aspects of technical knowledge and skills that Kenya's TAs in tailoring develop would help, to explain the cause of prevalence of poor performance and poverty within the economic sub-sector.

Bringing the aspects of technical knowledge and skills which tailoring apprentices develop to light can inform research, policy and practice about skills situation, prompt

further investigation into ways of supporting the economic sub-sector to improve upon technical knowledge and skills. Without adequate information on the aspects of technical knowledge and skills which TAs develop for tailoring sub-sector, it becomes almost impossible for any development agencies and-or policy to prioritise intervention into skills training as an urgent need.

Knowledge gained from the study may inform policy and research about relevant interventions needed to improve the quality of technical knowledge and skills acquired through TAs in tailoring. This is essential to promoting productivity and growth of IS tailoring and garment manufacturing MSEs, creation of sustainable employment opportunities and improvement of incomes among youths working in the economic sub-sector.

1.5 CONTRIBUTIONS OF THE RESEARCH STUDY

Knowledge and skills play a significant role in the lives of the youth, enterprises and society. Youths particularly need technical knowledge and skills to secure initial jobs, and navigate the labour market more aggressively (Brewer, 2013). Similarly, a highly skilled workforce enhances the enterprise's productivity which in turn increases the workers' income and the society/country's economic growth (Walther & Filipiak, 2007; ILO, 2012; Adams *et al*., 2013). However, individuals providing TAs and those seeking technical knowledge and skills training for work in the IS often face challenges regarding what needs to be taught/learned due to a lack of a well-researched curriculum (Nelson, 1997; Liimatainen, 2002; Haan, 2006).

This study explored the aspects of knowledge of clothing products and processes that TAs in tailoring develop and identified the participants' knowledge needs and performance-related limitations. Based on these findings, the study developed an empirically grounded curriculum model, which outlines the set of knowledge of clothing products and processes. The model can be proposed as an intervention into technical knowledge and skills training crisis that was evident across the studied sub-cases.

The model may particularly be helpful to individuals and organisations interested in training in identifying the aspects of knowledge of clothing products and processes to teach apprentices. This may lead to professionally knowledgeable and skilled tailors who understand clothing product quality and are capable of designing and producing quality, aesthetically appealing (eye-catching) clothing products. Thus, the proposed model may be beneficial to traditional tailoring and garment manufacturing industries in Kenya, Africa and in other developing countries beyond Africa who still rely on such means of skills development. Clothing consumers in Kenya who depend on tailoring and garment manufacturing MSEs may also benefit from quality products should the use of the model lead to enhanced knowledge and skills among graduates of TAs.

Although the model is directly applicable to TAs in tailoring, the processes and steps towards its development can be useful to researchers in other economic sub-sectors, who may wish to transfer the knowledge to develop curriculum models specifically matched to their trades.

The study succeeded in identifying the aspects of technical skills which apprentices develop with respect to clothing product quality and processes. By highlighting the aspects of technical skills which tailoring apprentices develop as well as those which they do not develop, the study makes an important contribution to the body of knowledge (theory) within the field of clothing. The findings may create a platform for research to further explore skills-training intervention strategies to improve the sub-sector's knowledge and skills.

Moreover, by bringing the acquired skills to light, this study makes it easier for the process of certification of the acquired skills to be initiated whenever deemed necessary by policy. Walther and Fillipiak (2007:13) argue that it is time for policy and developmental agencies to begin recognising the content and levels of knowledge and skills acquired informally, to inform of the best schemes and practices that may be suitable for a comprehensive reform process.

The study findings may further be beneficial to theory development regarding garment design and manufacturing by highlighting some of the shortfalls and challenges leading to the development of limited and basic knowledge of clothing products and processes. Addressing these challenges may lead to enhanced knowledge and skills within the economic sub-sector.

The study also makes an important methodological contribution in using instrumental case study research to draw comprehensive case findings. The study, therefore, paves the way for further use of qualitative methodology and case study research design in related future studies.

1.6 LAYOUT OF THE THESIS

This thesis consists of eight chapters. A brief description of the contents of each of the chapters is presented as follows:

Chapter 1: Introduction and background to the study

This chapter presents introduction and background information, conceptual definition of key concepts that form the basis of the study, limitations, the problem statement, the research aim, main research question, sub-research questions, objectives, rationale and significance and major contributions of the study.

Chapter 2: Theoretical framework on clothing product quality and processes

This chapter reviews and discusses the literature that forms the knowledge content framework (**FIGURE 2.1**). This forms the initial component of the conceptual framework of the study (**FIGURE 3.1**). Brown and Rice's (2014:70) clothing product quality theory, the general theory on clothing production processes and empirical research provide the basis of the literature review and discussion within this chapter. These theories and related literature are discussed in-depth to foster understanding as to why clothing manufacturing professionals need to adequately understand them. The theoretical framework further forms a focal point in the curriculum model (**FIGURE 7.1**) developed in Chapter 7 of the thesis.

Chapter 3: Curriculum theory

Chapter 3 presents curriculum theory to foster understanding of curriculum practice and curriculum development processes. The knowledge presented in this chapter is important in exploring, analysing and explaining curriculum practices and associated challenges in TAs in tailoring. The literature is also instrumental in providing steps to follow in the development of a curriculum model to be proposed as an intervention in the skills training (**FIGURE 7.1**). The Chapter finally presents the study's conceptual framework (**FIGURE 3.1**) in which the theory of clothing products and processes is combined based on curriculum theory. These ultimately form the basis for exploration and analysis of technical knowledge and skills of clothing products and processes, which apprentices develop and the challenges associated with the outcomes. The conceptual framework also informs the development of the curriculum model as a proposed intervention.

Chapter 4: Research methodology

Chapter 4 provides the methodological framework which was adopted for this research study. The selection of a qualitative approach is defended philosophically and the rationale for using an instrumental case study research design is provided. The chapter also discusses the methods of data gathering and describes the data analysis techniques which were consistent with the researcher's philosophical assumptions. The chapter also captures the strategies implemented to assure trustworthiness of data quality and the conduct of ethical research.

Chapter 5: Findings of the empirical enquiry

Chapter 5 provides an in-depth description and interpretation of findings, on the four research objectives, based on data from participant observation and semi-structured interview techniques. The chapter specifically highlights the perceptions of tailors and their apprentices regarding the aspects of technical knowledge and skills, as well as the limitations of TAs with regard to learning activities, the organisation of the learning activities, teaching and learning techniques and contextual factors which impact on the quality of TAs (curriculum practices and the outcomes). The findings are presented in accordance with the predetermined themes as outlined in the

conceptual framework, sub-research questions and the research objectives. Data from the participant observation were used to verify the participants' views, which helped to increase the trustworthiness of the findings.

Chapter 6: Discussion of the main research findings

Chapter 6 discusses the comprehensive case findings in-depth in light of the theoretical perspectives advanced in Chapters 2 and 3. The validated findings provide a basis for answering the main research question and inform the overarching aim of the study. The discussion of findings also helps to highlight the strengths and weaknesses of TAs in the development of technical knowledge and skills needed to access employment and function effectively in tailoring and garment manufacturing sub-sector. The discussion of findings is helpful in illuminating the sub-sector's technical knowledge and skills needs that have remained unknown overtime. This is instrumental in explaining the prevalence of poor performance in the economic sub-sector and in informing of the urgent need for an intervention. The confirmed findings also form a basis for suggesting possible suitable interventions to improve technical knowledge and skills in the economic sub-sector.

Chapter 7: **A proposed curriculum model**

Chapter 7 sets out to fulfil the overarching aim of the study, which is: to propose and develop a curriculum model for intervention in TAs in tailoring in Kenya. The model is proposed to make a contribution to TAs in the tailoring industry. This model is intended to affect garment creation, consumer satisfaction and economic impetus.

Chapter 8: Conclusions and recommendations

The final chapter of the study presents the conclusions concerning the findings. The value of the study, contributions of the main empirical findings, their theoretical and policy implications, recommendations for further research and limitations of the study are also provided.

1.7 CONCLUSIONS

This chapter covers the introduction and background of the study. Key concepts are clarified and the problem statement provided. The main and sub-research questions are stated and the aims of the study shared. This chapter focuses on the summary of the findings which are aimed at providing information needed to develop a curriculum model for intervention in the skills training of custom-tailoring apprenticeship in Kenya. Chapter 2 covers the study's conceptual framework.

CHAPTER 2: THEORETICAL FRAMEWORK OF THE STUDY

2.1 INTRODUCTION

Chapter 1 provides the introduction and background to the study. This is followed by the clarification of the gap, statement of the problem, the aims of the research study and the main research study question. The chapter also highlights the contributions and justification of the study and ends with the layout of the entire thesis.

Chapter 2 presents a brief discussion of the concept of garment quality. These provide the rationale regarding the need for tailoring apprentices in Kenya to develop adequate knowledge of clothing product quality and processes. This is followed by an in-depth discussion of the theory of clothing product quality, mainly by Brown and Rice (2014) alongside other related literature sources. In addition, the chapter provides the general literature on garment making processes. Altogether, these form the basis of the critical aspects of knowledge for clothing manufacturers. These are further organized into the knowledge content model as illustrated in **FIGURE 2.1** (see page 31). The model forms the initial component of the conceptual framework of the study.

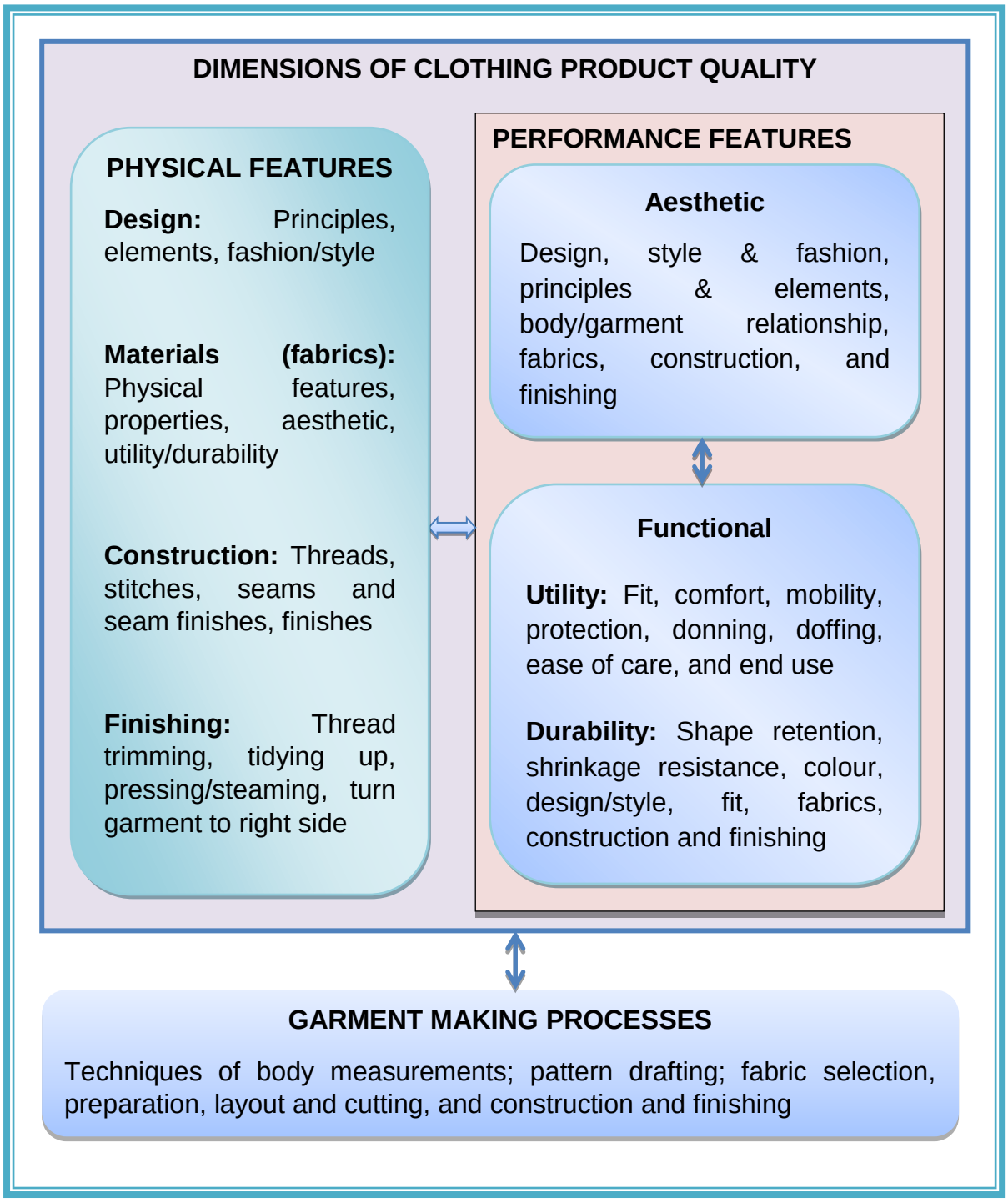

FIGURE 2.1: A CONCEPTUAL MODEL OF KNOWLEDGE OF CLOTHING PRODUCT QUALITY AND GARMENT MAKING PROCESSES (Source: Brown & Rice, 2014 and related literature sources).

2.2 A CONCEPTUAL MODEL OF KNOWLEDGE OF CLOTHING PRODUCT QUALITY AND GARMENT MAKING PROCESSES

Brown and Rice's (2014:69-70) clothing product quality theory and literature relating to garment making processes are used to compile the initial part of the conceptual framework. These constitute the aspects of knowledge which tailors in the IS in Kenya and their apprentices are expected to learn (**FIGURE 2,** see page 31).

The conceptual model addresses the dimensions of garment quality features which include: physical (design, materials, construction and finishing) and performance (aesthetic and functional) features (Brown & Rice, 2014: 69) in the main block. The physical features co-exist within the designed and constructed garment. These features influence each other, in that design, fabrics, construction and finishing work together to determine the garment's aesthetics and functional performance qualities.

An advanced awareness of the desired performance of a garment (aesthetics and functional characteristics), is critical to selection of relevant physical features to include in the garment to be made. For example, the anticipated garment aesthetics will not only be determined by design, style or fashion, but also by the tailor's ability to apply knowledge of design principles, to select and organise elements into a visual design that provides a flattering aesthetic appeal on the customer's body (Chase & Quinn, 2003:9; Rasband & Liechty, 2006:6). The aesthetic elements drawn from fabrics (Beer, 2010:86; Nudelman, 2010:16), construction and finishing (Shields, 2011) also contribute to the ultimate aesthetics of the designed garment.

In addition, the designed garment should address utility and durability requirements (Brown & Rice, 2014:70) in order to meet the specific functional needs. Development of adequate knowledge of the physical and performance dimensions of garments including how these dimensions relate to each other may help custom-tailors and their apprentices to provide quality products.

It is not enough to only have knowledge of the dimensions of garment quality. The physical features which provide the garment's tangible form have to be transformed

into a design that addresses the performance needs. Finally, the design has to be transformed into a physical garment, which can be put to practical use.

Adequate knowledge and skills on how to obtain accurate body measurements, and transform these into patterns for cutting the designed garments are therefore critical. It is also important for tailors and their apprentices to understand fabric selection, preparation techniques and their practical application. This is needed to ensure that the right fabric is prepared well for the garment's anticipated performance. In addition, layout processes need to be done in accordance to design aesthetics, fabric characteristics and the customer's fit preferences, before cutting the garment components with precision.

Finally, knowledge of construction and finishing processes should be integrated with practical skills to produce functional and aesthetically appealing garments, for satisfaction of customers' needs. Knowledge and skills pertaining to these processes are compiled from varied literature and research sources as discussed in section 2.4.3. Collectively, these form the basis of technical knowledge and skills which were explored, analyzed and validated for compiling a curriculum model for intervention in training graduates of TAs in tailoring in Kenya.

The literature discussed in this chapter contributes to understanding how knowledge of clothing product quality and processes presented in the conceptual model (**FIGURE 2.1**), may enable tailors and garment manufacturing MSEs to design and produce quality clothing products. The study assumed that custom-tailors in Kenya apply these forms of technical knowledge and skills, in designing and producing custom-made clothing products that suit customers' clothing needs and quality expectations. Correspondingly, it was assumed that custom-tailors transfer these aspects of knowledge and skills to apprentices. This is important to the apprentices' skilful performance and sustainable employment within tailoring and garment manufacturing MSEs.

2.3 THE CONCEPT OF QUALITY IN GARMENTS

Clothing quality is a central element in customer satisfaction as well as the industry's success. Kadolph (2010:24) acknowledges that product quality has become an important dimension in the contemporary competitive global marketplace. This is despite the difficulty in defining quality, which has varied meanings to different consumers and producers. The International Standards Organisation (ISO), defines quality as 'the totality of characteristics of a whole that has the ability to satisfy the explicit and implied needs of consumers (Brown & Rice, 2014:68). However, the term quality is also broadly defined as the pre-eminence or excellence of a product, while observed quality refers to the consumer's evaluation of the total of a product's pre-eminence or excellence (Zeithaml, 1988; Fiore & Damhorst, 1992).

Brown and Rice (2014:68) argue that businesses need to be conscious of clothing product quality, particularly its degree of excellence and conformance to requirements, or the extent to which a garment meets expectations. A quality conscious company should create products that meet the wants and needs of consumers. Such an approach may help to establish satisfied and loyal customers who can make repeat purchases. This is essential for businesses' survival and growth.

Quality is a key factor in the production, marketing, buying, and selling of clothing products (Brown & Rice, 2014:68). It is imperative for clothing professionals and business to have a clear understanding of quality at every stage of production. The success of companies and individuals working in the clothing industry depends upon the ability of both to design and engineer quality products, and to use standards to achieve and maintain it. Since the ultimate goal is to provide clothing products, which best meet consumers' expectations, and for companies to stay in business, everyone should be compelled to achieve an appropriate balance between quality and price.

Consumers demonstrate their concern for quality not only by becoming more knowledgeable about clothing quality, but also through their keenness to identify with

companies that provide quality products (Brown & Rice, 2014:68). Consumers therefore evaluate clothing product quality on a continuous basis, initially during purchase to identify products that are likely to meet their perceived quality needs (De Klerk & Lubbe, 2008:38; Mitchka, Black, Heitmeyer & Cloud, 2008; Gitimu, Workman & Robinson, 2013), during product use to establish the garment's performance quality, and as they discard the products (Koskennurmi-Sivonen & Pietarila, 2009; Shields, 2011:xvii; Brown & Rice, 2014:78). Through product evaluation process, consumers get to associate products which satisfy their needs with businesses which provide the products as avenues for further purchase. Consequently, Brown and Rice (2014:68) are of the view that clothing manufacturers can maintain and build their businesses through a focus on quality. Irrespective of product offerings, clothing manufacturers should essentially acquire product quality knowledge, to enable them to deliver products that can meet the wants and needs of the target customers.

Successful businesses consistently aim at offering customers at least one of the following: something different, something with better/improved quality or something cheaper (Brown & Rice, 2014:68). However, consumers tend to become loyal to businesses which can consistently deliver the same satisfaction with every purchase. Therefore, clothing manufacturers who strive to attract customers by providing latest fashion trends (something different) or lowest price (something cheaper) may not necessarily meet the goal of retaining customers. This is because attributes such as colour, style, price and fit may initially draw attention to and even sell a garment, but other features determine the consumers' ultimate satisfaction with the product. In this regard, clothing producers need to focus on the overall quality features and value (something better) as opposed to selected features (Brown & Rice, 2014:67). This underscores the need for clothing producers to understand garment quality features and their impact on the overall quality.

The concern for quality garments is not limited to ready-to-wear garment manufacture, but also applies to traditional tailoring and garment manufacturing MSEs. For example, McCormick *et al.* (1997) assert that custom-tailors in Kenya who produced high quality garments increasingly acquired large orders. As a result,

they not only earned a high income, but also expanded in size and employed more tailors. Similarly, Koskennurmi-Sivonen and Pietarila (2009) maintain that custom-tailors and their clients viewed clothes that flatter and fit a client perfectly as of good quality. This makes it important to discuss perspectives of clothing product quality in terms of the products, the manufacturers and the consumers as presented next.

2.3.1 The product perspective of quality

The product perspective of quality relates to the measurable attributes, which enable its understanding. This is helpful to manufactures in ensuring that products meet quality expectations (Kadolph, 1998:14). Some of the measurable attributes are evident in Kadolph's (2010:24) definition of quality as "the sum of product characteristics such as appearance, end use, performance, material interactions within a product, consistency among identical products, and freedom from defects in construction or materials." Although consumers may articulate the product attributes which they view as contributing to quality, they may not understand the measurable product quality attributes. It can be argued that acquisition of knowledge of the sum of clothing product characteristics as defined by Kadolph (2010), may enable clothing manufacturers to understand, test and only include attributes that will deliver the desired product quality. Custom-tailors, dressmakers and garment manufacturing MSEs who have knowledge of the sum of clothing product characteristics may be able to ensure that the attributes included in a product will measure up to quality expectations in a particular garment.

2.3.2 The manufacturer's perspective of quality

The manufacturer's perspective of quality refers to the conformance of products to the acceptable standards and-or specifications for all dimensions of the product (Kadolph, 1998:14; Marshall *et al.,* 2004:333). The manufacturers' perspective of quality focuses on the physical properties of garments which can be measured objectively, for example, fabric strength, shrinkage, colour fastness (Brown & Rice, 2014). Knowledge of physical properties and the techniques of measuring these objectively may help to ascertain that products will perform as expected while in use. Objective measurements of the physical features are helpful in enhancing clothing

manufacturers' chances of business success. However, knowledge of quality alone may be insufficient in designing and producing quality garments without knowledge of the consumers' perspective of quality.

2.3.3 The consumers' perspective of quality

From a fashion-marketing perspective, Sieben (1991) and Yoon and Kijewski (1997) point out that the quality of apparel products is associated with the extent to which it satisfies the consumer's needs. The consumers' perspective of quality refers to the dimensions of products that are of importance to them. These dimensions often differ by product type, needs that they are expected to fulfil, and the varied consumer expectations of the products (Kadolph, 1998:16; Marshall *et al.,* 2004:334). Understanding the consumers' perspective of quality is therefore helpful in establishing their needs and selecting product attributes that are likely to address unique and specific consumer needs accordingly.

The problem with this view is that most consumers cannot be relied upon to identify product dimensions that are important in meeting their needs accordingly. This is due to insufficient knowledge of essential product attributes (Choi & Ashdown, 2002:253). This often causes consumers to make incorrect judgement of the products (Kadolph, 1998:34). This underscores the need for clothing manufacturers to have adequate knowledge of the customers' expectations and-or needs which should be addressed.

Custom-clothing consumers often purchase custom-clothing directly from custom-tailors or dressmakers with certain expectations in mind (Keiser & Garner, 2008:6; Shields, 2011). For example, consumers with special needs (Shields, 2011), or individuals who do not easily fit in the ready-to-wear clothing, especially those seeking unique style/designs, prefer specific fabrics, and-or need clothing items that are not readily available in the ready-to-wear category; and/or a combination of these (Koskennurmi-Sivonen & Pietarila, 2009). Unlike the ready-to-wear clothing manufacture, custom-tailors and dressmakers have the advantage of consulting with customers to explore their clothing needs and preferences in-depth, prior to clothing

product design and development (Koskennurmi-Sivonen & Pietarila, 2009; Di Lorenzo, 2010). However, only custom-tailors who have adequate knowledge of clothing needs and quality factors that go with them can make use of the opportunity.

Clothing products have quality dimensions which manufacturers, including custom-tailors and dressmakers should understand to help them provide quality products. These are discussed in the section that follows.

2.4 DIMENSIONS OF CLOTHING PRODUCT QUALITY

According to Brown and Rice (2014:69), quality of clothing products have two dimensions. These include:

- physical features, which specify what the garment is; and
- performance features, which indicate what the garment can achieve or how it can benefit the consumer.

A garment's physical features determine its performance (Brown & Rice, 2014:69). Consumers often select clothing products based on certain physical features which they believe will fulfil their performance expectations. For example, a consumer may choose a silk blouse in anticipation of enjoying its lustrous beauty and comfort. However, leaving consumers to make independent decisions regarding a garment's physical features can be misleading. Most consumers tend to lack knowledge of physical features of garments, and the exact performance qualities which the physical features can bring about (Brown & Rice, 2014:78). As such, customers may end up selecting physical features which may not perform as anticipated during use and care of the garments, thereby leading to dissatisfaction with the products.

Adequate knowledge of physical features is helpful to clothing manufacturers in selecting features with the potential to provide the desired performance benefits in garments and to meet the consumers' expectations. Mitchka *et al*. (2008:4) point out that finding clothing products with the desired performance features, and the degree to which the performance features remain consistent while the garment is in use determine consumer satisfaction. Brown and Rice (2014:70) are of the view that a

garment's performance features (aesthetic and functional) are determined by the standards it meets and how it benefits the consumer. Consumers believe that garments should help them achieve certain goals, i.e., feel more self-confident, gain respect, save time and money, attain comfort, attract a lover, fit into a social group, or express themselves (Shields, 2011:xvii).

However, understanding of performance (aesthetic and functional) features of garments is often complicated by the fact that the features often overlap (Brown & Rice, 2014:70). For example, fit may encompass both aesthetic (attractive versus unattractive fit) and functional features (comfortable versus uncomfortable fit). Similarly, a consumer may not only purchase a clothing product, because it fits comfortably, but also if the fit renders the wearer attractive. Fiore (2010:3) further notes that a consumer may purchase a jacket for its warmth, but only if the fabric feels smooth and soft, not scratchy and harsh, and more so if it does not make the wearer appear larger. From these examples, there is no doubt that a garment's performance quality is complex and multi-faceted in nature, covering the consumers' functional, sensual and cognitive expectations.

2.4.1 Physical features of clothing products

Physical features of a garment include: design, materials, construction and finish which provide its tangible form and composition (Brown & Rice, 2014:69). These features also constitute a garment's intrinsic attributes, which if altered in any way can change the product's quality and the consumers' perception of it (Brown & Rice, 2014:70; Shields, 2011:xxviii).

Shields (2011:xvii) points out that physical features of a garment contribute to its intrinsic properties of colour or texture based on the fabric, construction (width of a hem or a sleeve, design interest created by placement of seams), and design (style and fit) which are inherent to a garment. A product's intrinsic characteristics can be used to estimate its ability to provide satisfaction to consumers (Schiffman & Kanuck, 2000, 2010). While formal aspects of intrinsic attributes are easily used to evaluate and or describe quality of a product, they are subjective and tend to appeal

differently to different consumers (Abraham-Murali & Littrell, 1995a; Aqueveque, 2006; Brown & Rice, 2014). This implies that a garment may only be regarded as successful when its formal features appeal to a specific consumer's taste.

A garment's intrinsic features also include the more invisible aspects such as the method of care, or the ability of the fabric to keep the user cool during exercise (Shields, 2011:xvii). The benefits associated with these aspects of intrinsic features of garments are only best appreciated during use. Therefore, industry professionals should be able to evaluate a garment's intrinsic attributes carefully, because these features will influence the type and quality of fabrics, trims, and notions; construction techniques to use; and how and in what order the features are applied in production of the designed garment (ibid.).

Sieben (1991:71), however, points out that consumers often lack adequate knowledge of the physical properties; therefore they tend to concentrate on the psychic performance aspects of clothing products. This mainly causes them to focus on the visible elements of garments that can be evaluated with ease. It is for the same reason that consumers in most cases can only anticipate the physical utility of products. Despite this trend, De Klerk and Lubbe (2008:47) caution that it cannot be assumed that consumers never consider functional aspects of garments such as durability or easy-to-care qualities that emanate from physical features. These concerns point to the fact that clothing professionals should have adequate knowledge of physical features as the basis of meeting performance attributes of clothing products. The physical features as identified by Brown and Rice (2014:69) are discussed next.

2.4.1.1 Design

Design provides the physical plan for a garment, for example, the style of a skirt may be full or slim (Brown & Rice, 2014:69). A garment's design should contribute to its aesthetic appeal or attractiveness. In ready-to-wear clothing, the design or style/silhouette entices the shopper to try on the garment, upon having been favourably impressed by the colour and fabric (Beer, 2010:84). This, however, is not

the case in custom-clothing manufacture, as the garment does not yet exist. Instead, the tailor and the client have to work together and agree on the garment's design and features. This can be challenging to tailors with limited design knowledge and skills. Consequently, the tailor may not be able to transfer adequate design knowledge and skills to apprentices.

Research shows that fashionable and attractive garments are critical to the success of clothing businesses. In Kenya, the consumers' desire for attractive and fashionable designs was among the reasons (Apunda, 2002; Edwinsson & Nilson, 2009:19; Imo *et al.,* 2010) for popularity of imported over locally manufactured clothing products. Correspondingly, Suh, Carroll and Cassill (2010:5) emphasise that the consumers' desire to look beautiful and updated in fashion is a big opportunity for apparel manufacturers, who establish design problems by keeping up-to-date with fashion trends. The authors further assert that aesthetically appealing design is an integral part of the fashion industry's success (Suh *et al.,* 2010:10).

A study (Koskennurmi-Sivonen & Pietarila, 2009:254) on custom-made clothing quality revealed that personalised style, adapted to the client's style details and perfect fit are among the reasons why consumers may opt to have clothes custom-made. The tailors in that study associated styles which flatter and fit their clients perfectly with high garment quality. Likewise, Fiore and Damhorst (1992:176) revealed that consumers in their study were attracted to designs with the potential to make them appear attractive. Swinker and Hines (2006:221) also found that women associated current popular styles which made them look and feel good with high quality garments. The study further reported that participants used design features among other appearance cues to evaluate garment quality (ibid.).

From the empirical studies and the literature, it is evident that custom-tailors in Kenya, who have knowledge of design, including the ability to create and produce attractive garment designs, may have an advantage of competing favourably with entrepreneurs who import attractive and fashionable garment designs into the country. Keiser and Garner (2012:248) emphasise that to design a garment, one should be able to select and interpret colour, fabric, styling and fit effectively. These

elements work together to enhance the garment's appearance as well as the wearer's, and in turn entices one to make a purchase. On the other hand, a design can be disappointing if the elements are haphazardly combined. Knowledge of elements and principles of design as tools to create appealing garment designs are useful in this regard.

Keiser and Garner (2012:248) define design as "the organization of design elements, using design principles, to create products that are aesthetically pleasing to the observer." The elements of line, colour, texture, pattern, silhouette, and shape are intrinsic to clothing products. The elements form the building blocks of a garment's design. The design process revolves around determining how to combine the design elements into a pleasing whole (Suh *et al*., 2010:10; Keiser & Garner, 2012:253). To achieve this, an understanding of design principles (proportion, balance, emphasis of focal points, rhythm, and harmony or unity) and elements is needed (Keiser & Garner, 2012:248). This raises the question how can knowledge of design be acquired.

Crilly, Moultrie and Clarkson (2004:558) point out that designers use their skill, training and experience to produce products that induce a positive aesthetic impression. It is believed that designers' intuitive judgements are often guided by tacit understanding of perception and visual composition (Schmitt & Simonson, 1997; Liu, 2003). Kimle (1994:58-61) however argues that although design in itself is an aspect of experience, knowledge of design principles and concepts are necessary in converting the acquired experiences to cognitive knowledge. This is because design principles form an integral part of the development process of fashion professionals. Effective design learning may however be accomplished through reflection upon, or discussion of principles and elements of design. Only then can individuals develop the general understanding of basic concepts, which are applicable across multiple design problems and products. All these imply deliberate teaching is need to foster design learning.

Marshall *et al.* (2004:191) points out that successful designers should have the ability to create clothing products which afford the intended wearers the desired

image. Design understanding is therefore not only vital to designing attractive garments, but also garments which are comfortable and visually appealing when worn. Similarly, Burke (2011:93) acknowledges that a successful design results when the elements and principles merge to produce a cohesive look that is visually well presented, with the right amount of creativity, innovation and style.

From the foregoing, it is evident that design knowledge and skills enable fashion creativity and innovation, which according to Burke (2011:14, 89) foster creation of marketable and saleable designs. Aspelund (2010:72) echoes similar sentiments by suggesting that individuals and enterprises require creative skills to solve problems, create new products, and generate innovative ideas.

Knowledge of design can, however, be incomplete without understanding how body shape impacts on design. Tate (2004:65), Rasband and Liechty (2006:6) and Brown and Rice (2014:212) point out that body shapes often vary even among individuals of the same size. For this reason, a design which appears flattering and pleasant on one body type may not produce a similar aesthetic appeal on another person with a different body type. This calls for the use of design knowledge by fashion professionals, including clothing manufacturers to provide aesthetically appealing designs to customers with diverse body shapes and sizes (Marshall *et al*., 2004:267). Correspondingly, Woodall and Constantine (2008:13) and Kemp-Gatterson and Stewart (2009:166) point out that body shape influences how a garment looks when worn. As such, knowledge of body shape may enable fashion professionals to maximise opportunities to select and use designs effectively to enhance their customers' appearance.

Rasband and Liechty (2006:6) are also of the view that the overall appearance of a garment on an individual depends on the proportions of the body parts to the whole and to each other. Fashion manufacturers should, therefore, use knowledge of design to analyse the relationship between the body parts to create designs, which accentuate positive features of the body yet minimise the effects of undesirable features. Knowledge of design principles can also be used to organise elements of colour, style, texture, and pattern into a visually appealing design that can hide figure

irregularities and flatter the garment wearer (Chase & Quinn, 2003:14). This is necessary for customers' approval and the satisfaction thereof (Huck, Maganga & Kim, 1997).

Keiser and Garner (2003:316) emphasise that a truly individualised/customised aesthetic elegance can be achieved when design features are understood in relation to the size of the customer. Design features constitute components of a garment. These may include: the number of pattern pieces used to make the garment, construction details, and finishing features applied to complete the garment. It is believed that shapes of patterns, construction and finishing details determine the suitability of a design to the customer's body size and shape. Design should not be limited to meeting aesthetic needs, but should also address functional needs for which the garments are purposely purchased (Brown & Rice, 2014:188). Functional design considerations are discussed in depth in section 2.4.2.1.

From the advanced theoretical review, the researcher is convinced that there is a need for Kenya's custom-tailors and dressmakers working in tailoring and garment manufacturing MSEs, to acquire knowledge of varied body shapes and the types of designs/styles which suit varied body shapes. Through this, they can produce designs which are appropriate to their customers' body shapes and accord them the desired aesthetic appeal. This is important, considering that most custom-clothing consumers are usually not quite knowledgeable about designs that are appropriate for their figure types (Koskennurmi-Sivonen & Pietarila, 2009:256). Only custom-tailors who have knowledge of principles, which govern design selection including knowledge of body shapes, may successfully guide their customers in the selection of and-or creation of suitable designs/styles.

Based on the foregoing discussion, exploration of curriculum for TA in tailoring for design learning may be based on evidence of:

- Engagement of tailors and their apprentices in design activities relating to creation of new/original designs;
- Participation of tailors and their apprentices in teaching and learning of design principles and elements;

- Participation of tailors and their apprentices in the selection and application of elements of design in the creation of aesthetic garment designs;
- Participation of tailors and their apprentices in the analysis of customers' body shapes to guide the creation and selection of attractive garment designs; and
- The tailors and apprentices engaging in guiding customers to select designs and design features which flatter their figures.

Tate (2004:69) and Brown and Rice (2014) further emphasise that quality of other physical components such as fabric, construction, and finishing may destroy a good design and its eventual fit. This underscores the need for prospective custom-tailors to develop adequate knowledge of fabrics, especially how they influence design, construction, finishing and the ultimate performance of garments. Discussion regarding materials is provided in the next section.

2.4.1.2 Materials

Materials refer to fabrics and other components (buttons, zips, trims) used to produce the garment (Brown & Rice, 2014:69). The non-fabric components can also be referred to as findings (Glock & Kunz, 2005:145; Beer, 2010:200; Keiser & Garner, 2012). Evaluation of both fabrics and findings is important when assessing the overall garment quality (Kemp-Gatterson & Stewart, 2009:217; Brown & Rice, 2014:294). Since fabrics and findings can influence the garment's performance, both should be well understood by clothing manufacturers. This study focuses on fabrics and the discussion of findings is beyond its scope.

Fabric is the textile material from which garments are produced (Glock & Kunz, 2005:145; Kemp-Gatterson & Stewart 2009:179). The performance of a fabric does not necessarily predict the performance of a garment; however, the two are strongly related. Fabric interacts with other components, design, and construction of the garment to affect the overall quality (Brown & Rice, 2014:240).

Fabric plays an important role in maintaining a garment's overall quality. Assessment of fabric quality at all stages of garment production is therefore important (Brown &

Rice, 2014:240). However, knowledge of fabric quality is required to ensure selection of quality fabrics for specific end uses. Consumers tend to relate garment quality with fabric quality and may make a purchase if they suspect that the fabric used may be of good quality. In the Kenyan context, consumers reportedly shunned locally manufactured clothing products due to perceived poor fabric quality (Nyang'or, 1994; Apunda, 2002), and had high regard for imported clothing due to perceived superior fabric quality among other factors (ibid.).

Studies aimed at understanding consumers' perception of clothing quality confirm the critical role fabric plays in the perception of quality. Fiore and Damhorst (1992:169, 176) for example, reported that consumers viewed fabrics as the best estimator of the overall garment quality. Hines and O'Neal (1995) also maintain that fabric highly influences the evaluation of clothing quality due to its significant effect on the overall appearance and performance of garments.

Abraham-Murali and Littrell (1995a:70) found in a study conducted to understand how consumers conceptualise attributes of garments that constitute quality, that fabric influenced consumers' perceptions of a garment's quality both during and after purchase. During purchase, the consumers were particularly keen on the fabric's visual appeal. However, during use the consumers focused attention on how well the fabric contributed to a garment's comfort, warmth, coolness, resisted shrinkage and retained its appearance while subjected to repeated care. The study concluded that the importance of fabric as a measure of quality became clearer with increasing use and care of garments.

Gersak (2002:169) argues that evaluation of properties of fabrics based on descriptive estimates such as colour and softness, which are visual and subjective as opposed to objective measures, can be inadequate in predicting quality level of garment appearance in advance and in engineering high quality garments. This suggests that although knowledge of formal properties of fabrics is important to clothing manufacturers, knowledge of objective measures of fabric quality is more critical in delivery of clothing products with assured performance quality. Furthermore, consumers hardly have knowledge of objective measures of fabric

quality. This makes it important for clothing manufacturers to be knowledgeable in this regard.

In support of this view, a study on custom-made clothing quality (Koskennurmi-Sivonen & Pietarila, 2005) reported that tailors felt that material is an important part of quality that should be acquired collaboratively with clients. This may ensure selection of appropriate fabric for a particular end use as opposed to when clients make their own selection. From the studies, it is evident that tailors and dressmakers should have adequate knowledge of fabric quality including objective measures to predetermine fabric properties in advance before putting them to use.

Kemp-Gatterson and Stewart (2009:179) acknowledge the importance of fabrics in garment quality and assert that any aspiring fashion professional should understand fabrics, especially their origins, and how they are made. A fabric has physical features which include fibres and yarns, its structure, how it is dyed, printed and finished (Brown & Rice, 2014:240). These features determine its quality and in turn impact on a garment's quality. An understanding of how physical properties of a fabric influence its performance (aesthetics, durability, comfort, safety and cost) is necessary in determining the best fabric choice for a given end use (ibid.).

In support of Gersak's (2002) view, Aldrich (2008:7) recognizes the need for clothing manufacturers to acquire deeper understanding of fabric quality, especially their basic properties and testing procedures. This is helpful in ensuring that the fabric will perform well for the specific clothing product. The importance of this knowledge is further underpinned by the fact that consumers often have limited knowledge of fabrics and often make a biased judgement regarding fabric quality (Kadolph, 1998:34). The need for dressmakers and custom-tailors to understand fabric quality is even more critical. In traditional tailoring, fabrics of all categories may inspire customers to have garments custom-made (Koskennurmi-Sivonen & Pietarila, 2009:256).

Fibres: Fibres are the raw materials from which fabrics are made and are the basic building blocks of a fabric (Kemp-Gatterson & Stewart, 2009:179; Brown & Rice,

2014:240). The type of fibres in a fabric strongly influences its characteristics. Knowledge of fibre content is therefore important in predicting its performance and that of the finished garment.

Fibre content: Fiber content affects the aesthetics, comfort, durability, shape and appearance retention, ease of care, as well as other performance characteristics of fabrics (Brown & Rice, 2014:240). For example, the degree of softness and stiffness of fibres affects the feel, texture and drape of a fabric. Fibre content also affects a fabric's dimensional stability (Brown & Rice, 2014:240). Wool fibres, for example, have the potential to stretch and to shrink under warm, wet conditions. Nylon fibres, on the other hand, have potential to return to their original length after being stretched and therefore, have good dimensional stability. Knowledge of fibre sources and their properties can help dressmakers and custom-tailors to select fabrics for specific end users including weather and care conditions.

Fibre content communicates the set of characteristics regarding the fabric's serviceability (Kemp-Gatterson & Stewart, 2009:179; Keiser & Garner, 2012:173). Serviceability relates to properties that affect aesthetics, durability, comfort/fit, appearance retention, and ease of care of fabrics. Since there is a strong relationship between fabric and garment serviceability, fabric quality correlates with garment quality, and therefore, should be well understood (ibid.).

Fabric structure: The structure of a fabric or how it is constructed also affects its aesthetic and functional performance (Brown & Rice, 2014:247). Fabric structure affects the hand, drape and texture; luster, ability to stretch and breathe, strength and abrasion resistance. Fabric formation most commonly entails weaving and knitting.

Weaving is the most common method of creating fabrics and produces the strongest and most stable structure, but minimal stretch (Brown & Rice, 2014:247). Closely woven fabrics are smooth, firm, and strong and have better insulation properties than knits (ibid.). This is particularly so when resistance to wind is a desirable property. Wind resistance is usually assessed by measuring air permeability - the rate of air

flow per unit area of fabric at a standard pressure difference across the faces of the fabric (Horrocks & Anand, 2004). Airflow through textiles is mainly affected by the pore characteristics of fabrics. The pore dimension and distribution in a fabric is a function of fabric geometry (Bivainyte & Mikucioniene, 2011). Tightly woven fabrics produced from microfilament yarns have a very compact structure due to small pore dimensions between the fibers inside the yarns and between yarns themselves (Kaynak & Babaarslan, 2012). These fabrics provide very good resistance against wind for different end uses such as parachutes, sails, wind-proof clothes, tents while serving light weight and high durability properties (Babaarslan & Kaynak, 2011).

In comparison to woven fabrics, knit fabrics are porous and offer little protection against wind, which penetrates the knit fabric to the wearer's body, even when tightly knit (Lumb, Rock & Malden Mills Industries, Inc, 1994; Howe & Howe, 2012). Although woven fabrics can easily be tucked, pleated, dyed, and printed, they also ravel easily along cut edges, and are prone to seam pucker (defined and discussed under seam treatment) (Brown & Rice, 2014:247).

Knits are made of interloped yarns, which is responsible for their characteristic stretch and a greater comfort in wear (Brown & Rice, 2014:247). However, the stretch property demands greater care during garment production as any incidental stretch during cutting or sewing can affect the fit of the resulting garment. Knit fabrics have a tendency to curl at the edges and though not subjected to puckering, they are prone to seam grin. Knowing these properties and their remedies may enable clothing manufacturers to design and produce quality garments in accordance to performance expectations.

Fabric performance: Chase and Quinn (2003:91); Beer (2010:86) and Nudelman (2010:16) point out that fabrics constitute the primary creative medium for clothing designers. Understanding how to select the right fabric for the designs to be made is therefore, an important aspect of designing. Well-chosen fabrics can improve a garment's performance and-or offer a unique aesthetic appeal (Keiser & Garner, 2012:165).

Brown and Rice (2014:265) are of the view that clothing manufacturers should establish fabric aesthetics and functional performance standards based on the garment's design, intended use, season, fashion trends, consumer preferences, cost limitations, and the target market profile. With regard to design for example, a loose, flowing design will require a soft, fluid fabric. On the other hand, a tailored garment will need a fabric heavy enough to produce seams and pockets which do not show through and at the same time support the tailored details (ibid.). In addition, to appearance expectations, one also needs to consider the level of comfort and performance expectations when selecting fabrics for a particular design (Chase & Quinn, 2003:91). An understanding of aesthetic and functional features of fabrics may be helpful in informing their selection for varied applications.

Aesthetic performance of fabric: The aesthetic performance or attractiveness of a fabric refers to its appearance as it complements the garment's appearance (Brown & Rice, 2014:270). The aesthetics of a fabric or its appearance must be considered in all stages of garment production, from design concept and construction to the intended end use (Brown & Rice, 2014:269).

Aesthetics of fabrics include colour, pattern, colour consistency, lustre, opacity, and hand. Aesthetic elements of fabrics form part of the non-physical properties of clothing, which are easily identifiable and convey their aesthetic appeal more readily to consumers (Kadolph, 1998). Griffin and O'Neal (1992) for example, found in their study that formal properties of fabrics such as colour and design proved essential in attracting customers to the products. However, these elements are subjective in nature, and do not lend themselves to objective measurement, therefore, their description tends to be rather difficult (Brown & Rice, 2014:270). This calls for great care when choosing fabrics to design and cut garments as they can effect business success.

Colour: Colour is the sensation which results from stimulation of the eye by light waves (Kadolph, 1998:295; Kemp-Gatterson & Stewart, 2009). Colour forms the main attraction feature and/or the strongest first impression in garments (Tate, 2004:164; Beer, 2010:8), and is often the single most important factor in making a

purchase (Brown & Rice, 2014:270). It is only when the colour has attracted the customer's attention that the fabric/garment is investigated for hand and/or drape-ability.

Marshall *et al.* (2004:341) point out that colour is very subjective; therefore, its selection should be based on customer's most intriguing choices, to convey the garment's desired visual appeal. Selection of colour can also be guided by fashion trends and knowledge of design principles and elements. Clothing manufacturers should thus acquire knowledge of principles underpinning the use of fabrics with colour. Given the importance of colour to the consumers' visual appeal, knowledge of techniques for testing for colour fastness also becomes critical in ascertaining that a fabric and the garment will retain their original aesthetic appeal.

Pattern: Chase and Quinn (2003:12) define pattern as a design that is woven in, knitted in, or printed on a fabric. Pattern also refers to the overall fabric design which is created by organising several motifs in a prescribed manner (Marshall *et al.,* 2004:289-290; Keiser & Garner, 2012:251). An understanding of fabric pattern is important for fashion professionals including clothing manufacturers as well as consumers. To a fashion professional, an understanding of fabric pattern/design and its relationship to the human body can help to better develop products, which can meet the consumers' aesthetic needs.

Marshall *et al.* (2004:301) point out that understanding the effects of a fabric's pattern/design in garment construction is important to clothing manufacturers in the delivery of attractive garments. Successful use of distinctly patterned fabrics for example: plaids, checks, one-way designs and fabrics with surface interest requires special attention from manufacturers during pattern layout, cutting and sewing to preserve designs (Marshall *et al.,* 2004:301; Tate, 2004:168; Di Lorenzo, 2010:53-4).

Clothing manufacturers should also understand the effects of fabric pattern/design on the customer's body. The effects of pattern/design on the body relate to the scale or size of the motif, its arrangement and colours (Marshall *et al.,* 2004:303). Application of knowledge of principles of design is helpful in analysing the effects of

fabric pattern/design in relation to the body size, to attain the desired visual effects and garment aesthetics. The use of pattern effects requires focusing positive attention on the garment wearer's body, putting emphasis on the individual's strongest features and downplaying the least desirable ones. Knowledge of how fabric pattern can be used to create a desirable visual illusion of a garment's wearer (Chase & Quinn, 2003:13) is critical to designing with fabrics.

Hand: Hand refers to the way a fibre, yarn or fabric feels when handled (Brown & Rice, 2014:272). It encompasses the sensations resulting from touching, moving or squeezing the fabric with the hand. The hand of a fabric is critical to ease garment production and contributes to the aesthetic and functional performance of the finished garment. As a rule, the hand of a fabric must be compatible with the style of the garment.

As a design feature, a fabric must be chosen for its aesthetic and functional appropriateness, majorly its hand and drape qualities which impact on the silhouette and design success (Beer, 2010:85). Nudelman (2010) asserts that fabric has the power to inspire designs, therefore knowledge of fabric hand (hang, fall, cling, flow, pleat, gather) should be acquired. For example, a soft, drapy fabric should inspire a designer to focus on gathers and ruffles.

Drape: Drape is an aspect of fabric hand which describes the way the fabric falls over the 3-D form like a body or a table (Kadolph & Langford, 2002:24). The drape of chiffon, for example, can be described as soft and free flowing; that of chintz falls in graceful folds, yet that of satin is stiff and heavy. Knowledge of fabric drape is important to the achievement of the desired design effect in the finished garment (Tate, 2004:250; Brown & Rice, 2014:272-3). The desired amount of fabric drape depends on the garment's design. For example, a crisp and well-tailored blazer cannot be achieved based on a fluid and soft fabric. This is because the silhouette of the blazer will reflect the body shape as the fabric falls easily. Instead, a crisp fabric such as linen or sailcloth can be very successful for a well-defined silhouette. On the other hand, designs such as cowl necklines, harem pants, and other gently draped or gathered styles, depend upon soft, drapable fabrics for the desired effect. A fabric

with the correct drape may contribute greatly to a garment's aesthetic appearance, as it enables the design/silhouette to stand out as desired. This has a positive effect on the garment wearer as it enhances the appearance (ibid.).

To create aesthetic designs, one should keenly scrutinise fabric qualities of weight, thickness, drape, stretch and sheerness (the amount the fibres distort in the warp and weft), as these are known to dramatically affect how a pattern can be cut and the final shape (Aldrich, 2008:7).

Functional performance of fabrics

The functional performance of a fabric refers to its utility, dimensional ability, and durability as a component of the garment (Brown & Rice, 2014:273*).* Utility of a fabric relates to its influence on the functional performance characteristics of garment such as appearance retention, comfort, ease of care and safety. Durability of a fabric refers to its serviceability in relation to the garment's strength, resistance to abrasion and degradation by chemicals and other elements of the environment. Durability also refers to the fabric's strength versus the activity the consumer expects to do while wearing the garment (Beer, 2010:88).

Brown and Rice (2014:273), however, caution that fabric alone cannot determine a garment's functional performance. Instead, the design, materials, construction methods and finish all work together to determine utility and durability. For example, warmth may be due to the type of fabrics and/or the garment's design (i.e., a high collar to keep the wind off the neck). Similarly, both fabric and construction (i.e., strong stitches and seams) can influence serviceability.

Dimensional stability is the ability of fabric and garment to maintain their original shape and size (Brown & Rice, 2014:273). This is one of the most important performance characteristics of a garment. Dimensional stability affects the function of the garment in terms of appearance retention and fit; and often affects comfort in close-fitting garments. Dimensional stability is a major challenge in garments made from knit fabrics.

Appearance retention: Appearance retention describes the degree to which a fabric/garment retains its original appearance during storage, use and care (Kadolph, 1998:31-2). Brown and Rice (2014:276) emphasise that a fabric must maintain its original appearance and perform well in a garment wash test prior to production for the garment to remain useful. Performance characteristics relating to appearance retention in garments include resistance to colour change, wrinkle, snagging and pilling as well as crease retention if desired. In addition, a fabric should withstand the heat of care processes for it to retain its appearance. This should be regardless of any degrading factors to which the resulting garment may be exposed (Kadolph, 1998:31-2). A fabric which lacks resistance to any of the outlined characteristics may reduce a garment's usefulness due to lose of aesthetic appeal even if utility functions for which it was purchased are still viable.

Colourfastness: Colourfastness is the ability of the fabric to retain its colour (Brown & Rice, 2014:276). It refers to colour retention in reaction to laundering (bleach, water, detergent, and heat), light, dry-cleaning solvents, sea and pool water, perspiration, and other chemicals. While consumers may withstand faded jeans and other casual clothing, loss or change of original colour in other garments remains a major cause of consumer dissatisfaction. Most clothing items with colours that streak or fade are often discarded as unwearable; even if they are structurally sound (Brown & Rice, 2014:276).

Some fabrics are more prone to colour loss than others, and can be of great concern, especially when contrasting colours are used on the same garment. For example, a red fabric trim on a white windbreaker, can bleed during washing if the red dyestuff is not colourfast (ibid.). A garment manufacturer who is quality conscious should ascertain that materials of varied colours to be used in a garment are colourfast. This suggests that knowledge of techniques of testing fabrics for colourfastness is also desirable (Di Lorenzo, 2010).

Comfort: Comfort describes how materials used in a garment interact with the body during wear (Kadolph, 1998:30-1; Chase & Quinn, 2003:93; Brown & Rice, 2014:277). Comfort is influenced by multiple fabric related factors, which include its

weight, hand, extensibility, insulation, and absorbency/wicking ability among others. Clothing manufacturers are required to understand how these fabric properties can be manipulated based on circumstances of use, to accord garment wearers' the desirable comfort (the feel and/or performance).

Comfort also relates to 'fabric hand'. A fabric's hand can be judged by its feel on the skin, which can be described as warm or cool, bulky or thin, slick or soft (Kadolph & Langford, 2002:24; Beer, 2011:83). 'Fabric hand' is as important as its appearance (Tate, 2004:63), for just as the appearance of the fabric appeals to the consumer so does its hand. No one would buy a garment when it feels harsh to the body (Beer, 2011:89). Similarly, a stiff or heavy fabric or one with a rough, raspy texture (weight and hand), may make a garment uncomfortable to wear next to the skin (Kadolph, 1998:30; Brown & Rice, 2014:277).

Fabrics that are supposed to be in direct contact with the skin should have a soft effect on the hand, as opposed to fabrics that do not come in direct contact with the skin. In this respect, the feel of the fabric must be determined for fabrics that are to be worn close to the body. It is also important to know how best one can limit discomfort when using uncomfortable fabrics. For example, use of lining in garments made of fabrics that are suspected to be irritable to the body may reduce risk of irritation or discomfort (Kadolph & Langford, 2002:24; Beer, 2011:83).

Similarly, a fabric that is extendable or has stretch is not only comfortable in wear, but also presents the advantage of fitting a wider range of body shapes and sizes in one garment size. The ability to stretch enables consumers to function with much ease as they can bend and stretch freely. Stretch fabrics are also handy in active wear, providing users with the comfort of power stretch which curbs inhibition when wearing the garment (Brown & Rice, 2001:195, 198-9; 2014:277). The structure of knit fabrics and their stretch, for example, makes them comfortable as they are able to move with the body. This characteristic makes knits extremely popular among today's consumers, whose interest are not restricted to fashionable appearance, but also inclined to comfortable wear (Brown & Rice, 2001).

Knowledge of fabric structure and how to manipulate structural characteristics, during pattern cutting can result in comfortable and attractive garments (Reader's digest, 1999:106). Stretch fabrics, for instance, require minimal ease compared to non-stretch aspects for the desired level of comfort. Stretch effect can be introduced in woven fabrics by cutting on bias to increase their extensibility if desired and or if the design permits (Knowles, 2005).

Comfort also includes how the fabric affects heat loss or gain from the body or from the environment, and its relevance to the garment's use. Active sportswear and hot weather outer wear require fabric with high breathe-ability and low heat retention. As the fabric facilitates the loss of heat from the body, the garment wearers feel comfortable and can continue to function under hot weather conditions. On the other hand, fabrics with low air permeability and high thermal retention are desirable for cold weather clothing. Their ability to retain body heat contributes to comfort (Brown & Rice, 2014:277).

Comfort also relates to the fabric's ability to absorb moisture, especially in hot and humid weather conditions. The ability to repel water is advantageous in rainwear items, as they aid people to function in rain without getting wet (Kadolph, 1998:30-1; Brown & Rice, 2014:278).

From the foregoing discussion, it is evident that knowledge of factors relating to fabric comfort is important for the consumers' comfort and satisfaction as well as the garments' saleability. An awareness of fabric comfort factors and how to ensure comfort in garments as a result of the fabrics used may result in garments, which entice consumers to buy more due to the satisfaction gained through fabric comfort. The knowledge is, therefore, important to survival of clothing manufacturing firms as well as retailers.

Ease of care: Ease of care describes how a product responds to procedure(s) recommended for returning it to clean and as near-to-new condition as possible when soiled (Kadolph, 1998:31). Ease of care of a fabric is an important utility feature to many consumers due to its effects on the garment's care (Brown & Rice,

2014:278). Clothing manufacturers need to ensure that all fabrics used in a garment have the same launderability or dry-cleanability to facilitate ease of care. This enables a garment to retain its appearance and function effectively after being refurbished.

'Easy care fabrics' are characterised by the following properties: soil resistant, resilient, absorbent, strong and resistant to abrasion, dimensionally stable, colour fast, and resistant to heat and chemicals. Washable garments are also regarded as easy care as opposed to dry-cleanable ones (Brown & Rice, 2014:278).

Safety: Clothing consumers need to be safe in the clothes which they wear, especially when they are performing tasks which seem to be dangerous and where clothing could play a role. A fabric that is flame resistant, for example, has an important utility feature. Since it does not catch fire easily, burns relatively slowly, and self-extinguishes after the source of flame is removed, it can safeguard its users from risks of fire (Brown & Rice, 2014:278). Similarly, fabrics which have the ability to reflect light are also useful in risky places and areas where visibility is poor, or at night along the road. Specifically, high light-reflective fabrics are useful for biking, jogging and for occupational clothing such as fire fighters' coats (ibid.).

Fabric strength: A fabric's strength is a measure of how well it resists deformation by external forces, while serving the intended use. A strong fabric should resist any pulling and tearing forces, and withstand pressure which occurs during use and care without rupturing. A garment's specific use provides a measure of the desired fabric durability (Brown & Rice, 2014:279). For example, materials for four to six year girl's overalls, which are worn to roughhouse and play, should be strong enough to last at least one full season under tough conditions. Fabrics such as denim and corduroy or other weightier fabrication are likely to meet the anticipated performance in terms of durability (Beer, 2010:88). Likewise, work and sports related activities require very strong garments such as jeans, overalls, and dungarees. The fabrics often used in the construction of such garments are generally highly durable. On the other hand, fashion items, i.e., scarves, women's gauze blouses, and chiffon evening gowns,

which enhance appearance other than function, low strength fabrics would be more acceptable (Brown & Rice, 2014:280).

Brown and Rice (2001) point out that all fabrics, from weak to very strong have their specific applications or uses. This implies that use situations should guide selection of fabrics with the most relevant strength. By knowing how to choose the right fabric strength for a particular use situation, clothing manufacturers could be able to reduce costs incurred in fabric purchase and still provide aesthetically and functionally appropriate garments. Since fabrics make the greatest single contribution to the cost of garments, adequate knowledge of fabrics can aid effective evaluation and selection of fabrics that are affordable to the consumer without compromising on durability.

Durability of the fabrication should also match the proposed garment construction. For example, play clothes, exercise apparel, and denim jeans all have perceived use, and demand fabric and seaming that can hold up to the activities the consumer expects to wear them for, and the multiple washings that will be necessary after use (Beer, 2010:88). In respect to this, Brown and Rice (2014) argue that a fabric may be strong enough for the intended activity, however, if the seams are weak (i.e., weak stitches) or too narrow, then the garment can still fail to serve adequately due to increased chances of premature seam failure. Similarly, a strong fabric needs to withstand abrasion for it to serve the wearer well.

Abrasion resistance: Abrasion resistance refers to the amount of rubbing action which a fabric can withstand without being destroyed. Rubbing action acts on the entire garment, however, more severe abrasion occurs on the garment's folded edges such as hems, cuffs, collars, and any squared or pointed edge (Brown & Rice, 2014:280). Abrasion can be due to laundering or refurbishing- the overall loss of fibre which results in slight weakening of the garment during every washing or refurbishing cycle. Garments which are prone to frequent washing need to be made of abrasion resistant fabrics to remain durable. Abrasion also occurs during normal wearing process, as parts of a garment rub against hard surfaces. This is always evident in garment areas such as knees, elbows, and seat locations.

Abrasion-resistant fabrics are important for durability, and are especially critical in children's play wear and occupational clothing, due to intense abrasion from frequency of use and care (Beer, 2010:86-7; Brown & Rice, 2014). Polyester fabric, for example, is generally durable and can withstand abrasion due to excellent strength (Kadolph & Langford, 2002:105). While a lack of abrasion resistance may reduce a garment's durability, inability of a fabric to resist other forms of degradation may reduce durability.

Yarn slippage: This is the tendency of the yarns in a fabric to shift under stress, usually resulting in a raw edge in the seam (Brown & Rice, 2014:280). This condition often occurs near the seams of snug-fitting garments, especially in areas that receive stress, such as armhole seams on shirts and out seams at the hip/seat level.

Resistance to degradation: A fabric which resists degradation from the environment is considered durable. Garment care entails use of chemicals such as bleaches, detergents, fabric softeners, and/or dry-cleaning solvents. Therefore frequently washed garments should withstand the chemicals used to clean them to remain durable. In addition, ability to resist insects such as moths; resistance to mildew and sunlight among other degrading sources may promote durability (Brown & Rice, 2014:280). Raincoats, for instance, should be made of mildew resistant materials (Kadolph, 1998:30-1) to resist degradation and retain their pleasant appearance for continued use.

From the advanced literature, it is apparent that custom-tailoring apprentices may benefit more from a training curriculum which provides knowledge of fabrics in terms of fibre origins, their structure, how they are dyed, printed, and finished; their basic properties and testing procedures; in addition to knowledge of fabric hand, texture and drape. Knowledge of aesthetic and functional performance properties of fabrics is also important in predicting the performance properties of garments.

2.4.1.3 Construction

Construction refers to the methods used to assemble garments (Marshall *et al*., 2004:342). Some form of construction is needed for a garment to cover the body well (Beer, 2010:84). However, there is more to construction than just joining garment parts. Construction is part of a garment's physical features that should be considered alongside design, materials and finishing, as they all influence a garment's aesthetics and functional performance (Kadolph, 1998:348; Brown & Rice, 2014:69).

Construction features include the types of stitches and seams (Brown & Rice, 2014:69), processes of joining fabrics and notions such as zippers or snaps to create a wearable shape, and the use of trims such as laces, braids, and piping to enhance a garment's aesthetics (Shields, 2011:xvi). Construction choices often affect every aspect of a product, therefore, the importance of choosing construction methods at the level of garment quality cannot be underestimated (Shields, 2011:xviii).

Shields (2011:xxviii) advances the argument that construction is part of the intrinsic attributes of garments that consumers always evaluate, and as such should fulfil quality expectations. For example, a garment that appears fashionable should also be well made. Alongside other things, a consumer may also evaluate the garment for any missing buttons, loose threads and unfinished seams, or check whether the garment is lined and well fitting. The aim is to ensure that the purchase is worth the value that is attached to the overall garment quality. An understanding of construction quality will enable clothing manufacturers to select construction features that will increase the garments' saleability.

Consumers regard construction and workmanship as important attributes of clothing quality and often evaluate garment quality based on construction quality. Studies conducted in Kenya by McCormick *et al*. (1997), Mason (1998), Apunda (2002) and Edwinsson and Nilson (2009) revealed that poor workmanship was one of the reasons why locally manufactured clothing products suffered low consumer preference. On the other hand, imported clothing products were preferred due to their perceived high quality construction and workmanship.

Likewise, Abraham-Murali and Littrell (1995b149) evaluated the differences in the overall perceived clothing quality during expectation and post-purchase stages. According to the study, the quality of construction was among the predictors of the overall perceived quality at the expectation stage. Smith, De Klerk, and Fletcher (2011) also studied professional women's evaluation of quality of career wear. They found that durability (good construction) was viewed as very important both during purchase and use of the garment (ibid. p, 41). Similarly, Li (2011) investigated whether perceived quality of clothing products influenced buying behaviour of college students. It emerged that workmanship (e.g. seams) was among quality attributes that commanded greater attention from college students.

However, it is not only consumers who attribute garment quality to the quality of construction. Scheller and Kunz (1998) analysed perception of garment quality by apparel producers. Use of appropriate construction techniques was found to be critical in the achievement of a garment's structural integrity. This, in turn not only contributed to a garment's aesthetic presence, but also to its value and the power of appeal.

A garment's structure is made of the silhouette, the shapes that make up the silhouette, fit, and construction techniques (Shields, 2011:xxix). The structure makes the first impression on the customer. Its appearance should, therefore, assure the customer of its functional value in terms of fulfilling needs and expectations to entice a customer to make a purchase. For example, the aesthetics and durability (construction) of a garment should meet the customer's expectations. The customer recognises that features that make a garment durable, such as quality-construction decisions (linings or enclosed seam finishes, evenly stitched buttonholes, that are not fraying, and top-stitching that is not coming undone, etc.), will add to its wearability and justify the investment.

Customers also expect that sewn elements in a garment should be reliable (Shields, 2011, xxix). The crotch seam on a pair of pants for example, is expected to last the wearing life of the product. Busting of the seam while the garment is still in use is likely to damage the image of the company that sold it in the eyes of the customer,

who may not come for further purchase. Businesses that aim at producing garments with a quality of construction that will both generate profit, and satisfy the customer will therefore, increasingly preserve their image and reputation (Shields, 2011:xxxvii).

Shields (2011:xxx) argues that the performance of garment construction works in tandem with the fabric and fabric finishes that are used. Every garment is expected to meet the needs of customers by fulfilling the goal for the purchase. Construction quality for active wear for sports enthusiasts for example, may have to be extremely durable. However, the durability performance of construction only manifests when the garment is put to use. The manufacturer should consequently, have knowledge to predetermine the expected level of construction durability in accordance to the fabric and end use of the product. Construction techniques used should also match the serviceability requirements of fabrics and the garment (Shields, 2011:xxx). For example, seam finishes, pockets and zipper applications, hems, and button sewing should all be able to withstand methods of garment care. Similarly, the thread used should not shrink or discolour or snap when the garment is washed.

Fashion professionals often use seams to impart own style to fabric thus, proper seam choice can make a difference between successful, awe-spring fashion designs versus just another garment (Shields, 2011:37). Moreover, quality and perfection of construction details such as seams reveal the tailor's skills. High quality tailoring requires perfect seams with measurements and execution that is precise and accurate (Di Lorenzo, 2010:69). The appearance of seams affects its overall attractiveness (Brown & Rice, 2014:362), for example, straight, neat, smooth, and even seams are attractive and contribute to garment aesthetics. However, twisted, ropey, and or rippled seams are unattractive and tend to lower a garment's aesthetic appeal. Puckered seams particularly mar an otherwise pleasing appearance in garments. In general, poor construction may disguise the consumers' interest in garments and even result in rejection of the products altogether. This may impact on productivity and performance of tailoring and garment manufacturing MSEs, whose success depend on customers' recommendations through word-of-mouth to attract others to the business.

Seam appearance and-or aesthetics affects garment aesthetics and saleability (Glock & Kunz, 2005:467). A consumer may, for example, be simply attracted to a garment, because of design interest created by the placement of seams (Shields, 2011:xviii). Ensuring that details as seen in seam finishes, topstitching, or in embellishment all contribute to the customers' aesthetic impression, is therefore, critical to the garment's acceptance and saleability (Shields, 2011:xxx). Likewise, deliberate use of seams as design elements can arouse consumer interest in the products (Di Lorenzo, 2010:69). This may encompass putting emphasis on seam lines such as top-stitching with threads that match or contrast fabric colour to create interest. Seams can also be used creatively by presenting an inside-out look thereby exposing construction and decorative details. Tailors can also enhance construction aesthetics through creative use of laces, braids, piping or any type of decorative trimming and embellishments along the seam line.

From the literature and research, it can be argued that knowledge of construction quality and skills to produce aesthetically appealing construction is essential to apprentices in tailoring as well as for tailoring and garment manufacturing MSEs in maintaining continued customer patronage. This not only requires knowledge of creative use of threads, stitches and seams, but also their performance quality and factors which influence their selection. A detailed discussion regarding these is provided in section 2.4.3.4.

2.4.1.4 Finishing

Beer (2010:225) and Brown and Rice (2014:149-50) describe finishing as the final steps in garment production that help to achieve the required finished appearance. Unlike the industrial approach where finishing is accomplished only after a garment is complete, custom-tailoring and garment manufacturing MSEs in the IS in general, follow a garment production process in which both construction and finishing are accomplished concurrently. This can be compared well with prototype garment construction at industrial level, where a single operator makes an entire garment while progressively accomplishes both construction and finishing processes (Brown & Rice, 2014:120).

Finishing entails trimming of threads and unfinished seams, inspecting, repairing or reworking of any defects, pressing, turning products to the right-side out and tidying up of the product for a neat and new appearance (Brown & Rice, 2014:149-50). These processes are also applicable to traditional tailoring. An aspect of finishing that is common to all aspects of garments production is pressing.

Brown and Rice (2001:105) note that pressing usually makes a good impression on consumers. Unlike un-pressed or poorly pressed, well-pressed garments command a higher price. Likewise, Shields (2011:7) asserts that no seam is complete until it is pressed. Pressing occurs during construction or as a finishing step before the garment is presented to the customer or packaged. The type of seam, its position in the construction process and quality determine whether under-pressing or pressing as finishing is desired.

Thorough finish-pressing has the advantage of making garments have a smooth appearance, enhance workmanship and help garments fit smoothly (Brown & Rice, 2014:465). Attributes of a well-pressed product includes: an overall smooth and undisturbed appearance; absence of shine, scorching, melting, clamp marks, and water marks; no unplanned creases/pleats, pressed wrinkles, or hems pressed to the wrong side (ibid.).

Care should be taken when pressing, as poor pressing can make even well-made garments appear as though they are low quality (Brown & Rice, 2014:465). On the other hand, well-executed pressing can hide poor construction. In agreement, Glock and Kunz (2005:468) note that good pressing techniques may correct seam problems such as puckering, which often present unacceptable appearance in garments.

From the advanced literature, it is evident that apprentices should be taught principles of finishing in order to understand how finishing influences garment quality. In addition, apprentices should be provided with the opportunity to practise and attain finishing quality standards to produce garments with well-finished appearance. This may contribute to competence performance later on as professional tailors.

This study argues that custom-tailors and dressmakers and general tailors who intend to work within Kenya's IS should develop knowledge of the physical features of clothing products. This entails understanding how these features influence each other within the product as well as how the features impact on the performance of clothing products in general. The knowledge is important in the selection of relevant physical features which can yield the customers' expected performance attributes in custom-made garments. It is only when custom-tailors and/or dressmakers acquire the outlined body of knowledge that they can understand, design and produce quality clothing products. This is important for custom-tailoring, dressmaking and-or garment manufacturing MSEs' survival. The literature that follows discusses the performance dimensions of clothing products.

2.4.2 Performance features of clothing products

The performance features of a garment consist of both its aesthetic and functional dimensions (Sieben, 1991; Gersak, 2002:169; De Klerk & Lubbe, 2008; Brown & Rice, 2014:70). Chase and Quinn (2003:7-8) emphasise that whether a garment designer is an accomplished professional or a skilled home sewer, each should strive to fulfil a common goal: combine function and aesthetics to produce both workable and beautiful garments. However, a garment manufacturer can only combine function and aesthetics successfully when knowledge underpinning the principles is well understood.

Aesthetic appearance plays a critical role of initially attracting consumers to the garment at the point of sale (Brown & Rice, 2014:78). A garment's attractiveness affects consumers emotionally and psychologically, with its aesthetic features of colour, style and fit greatly determining the consumers' purchase decision. However, evaluation of aesthetic features is often subjective, as beauty cannot be quantified. Moreover, judgement of garment aesthetics is often based on personal tastes and current fashion. Additionally, relying on aesthetic features alone as a basis of overall quality evaluation can be limiting. This suggests that even in the case of custom-tailoring and dressmaking, where the garment does not exist prior-to customer

ordering, the aesthetic requirements should be used cautiously as a partial guide to custom-clothing quality.

Brown and Rice (2014:78) further point out that consumers cannot accurately evaluate a garment's functional performance such as comfort or freedom of movement at the point of purchase. Even by trying on the garment, the performance features of fit and comfort can only be estimated. Similarly, the functional performance of design, materials and construction may be predicted based on previous experiences, but cannot be confirmed before the garment is put to use. Most functional performance features of garments are hidden, and only become evident during wear and care. Since the process of evaluation of the garment's functional performance continues during use, it is more critical in determining the product's quality and achievement of the ultimate satisfaction with the product.

Schiffman and Kanuk (2010:178) agree and point out that although consumers are often concerned about functional performance attributes of garments, they mostly lack awareness regarding how these come about and do not have the capacity to predict functional performance of garments. Choi and Ashdown's (2002:253) study confirms these by reporting that their participants were unable to verbalise their functional clothing needs. Instead, they were appreciative and accepting of any prototype design with little critical analysis of functional features. The authors further argued that when faced with the need to produce functional clothing, manufacturers tend to pay greater attention to functional aspects of the products while ignoring their symbolic or aesthetic qualities. The authors however, asserted that greater consumer satisfaction can be derived from garments designed to address the users' functional, symbolic and aesthetic needs.

Gitimu *et al.* (2013:174) correspondingly suggest that the manufacturer's goal of creating a product that satisfies a consumer's needs is likely to be attained when intrinsic, performance, and aesthetic cues, which form garment quality, are attended to equally. Likewise, De Klerk and Lubbe (2008) argue that clothing product appearance cues are important to businesses in attracting customers and in influencing performance of garments while in use. Therefore, manufacturers who

usually limit quality to functional performance and manufacturers' specifications alone may benefit more by extending their focus to consumers' perceptions of aesthetic cues.

From the advanced discussion, it is apparent that both functional and aesthetic performance attributes of clothing products are important quality considerations that consumers need to experience in their clothing. The challenge for clothing manufacturers, therefore, is to develop knowledge of consumers' clothing needs (aesthetic and functional performance expectations) to inform provision of garments with such attributes (Chase & Quinn, 2003:69-70). Similarly, dressmakers, custom-tailors and tailoring and garment manufacturing MSEs in Kenya can only provide effective guidance regarding functional and aesthetic features to include in custom-garments if they have adequate knowledge of the same. Consequently, dressmakers and tailors seeking to work in tailoring and garment manufacturing MSEs should acquire knowledge relating to these dimensions to gain a broader view of what the consumers' perspectives of quality clothing products entail. The functional performance of clothing products are discussed first followed by aesthetic performance.

2.4.2.1 Functional performance of clothing products

Functional performance of a garment relates to its utility and durability (Lamb & Kallal, 1992:43; Shields, 2011:xix; Brown & Rice, 2014:70). The utility of a garment refers to its usefulness in terms of fit, comfort, ease of care, and ability to function according to the intended use among many more.

A garment's durability or serviceability refers to how well it retains its structure and appearance after wear and care (Glock & Kunz, 2005:136; Shields, 2011:xix; Brown & Rice, 2014:70). In order to provide a garment with durable performance, a manufacturer should for instance, be knowledgeable of whether the fabrics used will resist shrinkage when washed, the seams will remain intact during use, and the zipper will continue to zip throughout the garment's use among other issues.

It has been observed that most of the functional performance characteristics of garments mainly unfold only during use (Shields, 2011:xix; Brown & Rice, 2014:78). For example, warmth, fading characteristics, strength and-or ease of tear can only be discovered upon use and care. Some of the utility features of garments which consumers often seek to find in their garments, and which should therefore be well-understood by tailors and their apprentices in order to address them in the garments, are discussed.

Fit: Workman and Lentz (2000:252); Alexander, Jo Connell and Presley (2005:52) and Brown and Rice (2014:212) define fit as how well the garment conforms to the 3-D human body. A well-fitting garment matches the wearer's size and body shape (Keiser & Garner, 2012:378). An understanding of fit is important to clothing manufacturers in general (Keiser & Garner, 2003:315; Alexander *et al*., 2005:52; Brown & Rice, 2014:212-213) if they are to provide garments that fit consumers well.

The most reported problem from ready-to-wear clothing relates to difficulty in finding what fits well (Kurt Salmon and Associates, 2000; Keiser & Garner, 2012:89). Consequently, one of the main reasons for having garments custom-made relates to the desire to find well-fitting garments (Koskennurmi-Sivonen & Pietarila, 2009:256). Unlike the ready-to-wear clothing that is based on the body measurements of a selected standard or ideal figure, custom-tailoring and custom-design micro enterprises make single items for specific customers based on the customers' personal measurements and needs and therefore, should fit well.

Liechty and Rasband (2010:viii) are of the view that beautifully fitted and comfortable clothing communicate knowledge, poise, and a positive self-image. Good fit is therefore critical to clothing consumption and business success (Keiser & Garner, 2003:315; Alexander *et al*., 2005:52; Brown & Rice, 2014:212-213). Consumers evaluate garment quality on the basis of how comfortably it fits (Smith *et al*., 2011:41) and whether the fit does not inhibit mobility and performance of the garment wearers (Mitchka *et al*., 2008:9). Manufacturers who consistently provide garments that fit well elicit customer satisfaction, and enjoy greater overall sales (Keiser & Garner, 2012:378). However, ill-fitting garments tend to be costly and

frustrating to manufacturers, retailers and consumers alike as these translate into returned merchandise, lost sales, and dissatisfied consumers (Senanayake & Little, 2001).

Fit and design are equally important to the success of a garment (Shaeffer, 2014:3), for regardless of how attractive a design may be, no one can purchase a garment if it does not fit (Beer, 2010:85). Moreover, the effects of a stunning design, gorgeous fabric, and exquisite workmanship are often destroyed if the finished garment does not fit the intended wearer well (Brown & Rice, 2014:212). This often leads to low sales as garments remain unpurchased. For custom-tailoring MSEs, which depend on customers' recommendations to boost their reputation and survival (Koskennurmi-Sivonen & Pietarila, 2009:256), inability to provide well-fitting garments can be highly detrimental.

Rasband and Liechty (2006:3) assert that fit affects an individual's state of mind as well as the physical well-being. This is because clothes people wear influence the way they think, feel and act, or behave and the way other people react to or respond to them. Poorly-fitting garments constantly draw the wearer's mind to the body and appearance. This ultimately leads to a physical and psychological feeling of discomfort and unattractiveness. Poor fit therefore, affects the way an item of clothing looks and feels when worn (Chase & Quinn, 2003:35).

Poor fit can inhibit mobility (McCann, Hurford & Martin, 2005), and not only do garments that fit too closely or loosely inhibit mobility, but also fail to provide the desired protection and any associated performance benefits including comfort (Huck *et al.,* 1997:45; Kadolph, 1998:31, 441-5; Brown & Rice, 2014:188-9). Understanding of these complications can cause clothing manufacturers to solve problems that contribute to poor fit.

Garments that fit well lend the wearers good looks (Alexander *et al*., 2005:52-53) and are not only more attractive than ill-fitting ones, but are also more comfortable (Marshall *et al*., 2004:312; Brown & Rice, 2014:212). Furthermore, well-fitting garments contribute to the wearers' confidence which leads to psychological comfort

(Chase & Quinn, 2003:93; Alexander *et al*., 2005:53; McCann *et al*., 2005). Garments that fit well are also able to meet the need for which they were purchased or made as they can be readily put to use. It is hence, important that TAs in tailoring should aid apprentices to develop knowledge of factors which contribute to good fit as well as those responsible for poor fit and fit problems in general.

Fitting customers properly tends to be difficult and frustrating to manufacturers due to a number of factors (Alexander *et al.,* 2005:53; Brown & Rice, 2014:213). Variations in people's fit preferences often affect the perception of what can be regarded as a good fit. While some people may like loose garments, some may prefer tight fitting ones. It is therefore important for garment manufacturers to establish their customers' fit preferences and address them accordingly.

In order for garments to be compatible with consumers' preferences, clothing manufacturers must successfully interpret body measurements to enable production of clothing products that can satisfy customers' needs (Marshall *et al*., 2004:312; Alexander *et al*., 2005:53). Relevant knowledge on how to obtain correct body measurements and their effective application to pattern creation may also result in well-fitting garments.

Variations in body shapes and sizes among individuals cause fit problems (Alexander *et al.,* 2005:53; Brown & Rice, 2014:212). It is often hard to find people of equal size and body shape as there are always slight variations in body dimensions. Moreover, different body sizes and shapes require different styles to experience good fit (Tselepis & De Klerk, 2004). Clothing manufacturers, therefore, need to know designs and styles which can flatter customers with varied body shapes and sizes for elegant garment fit (Rasband & Liechty, 2006:5; Brown & Rice, 2014:213).

Variations in garment styles cause variations in fit and often result in fit problems. Varied styles require varied style and movement ease. These need to be well understood by clothing manufacturers to avoid causing unnecessary mistakes (Alexander *et al.,* 2005:53; Rasband & Liechty, 2006:20; Brown & Rice 2014:213). Huck *et al.* (1997:45) also aver that proper fit can be attained through understanding

the relationship between the body and garment which enables provision of sufficient movement ease.

The desired amount of movement ease should be determined based on the nature of activity which the garment wearer participates in, as well as the fabric to be used to make the garment (Brown & Rice, 2015:213). Sound knowledge of pattern making skills is also critical to the ultimate fit of the garment (Beer, 2010:123). These skills are required to analyse the garment's design and translate it into the right patterns for cutting the garment components (Knowles, 2005; Di Lorenzo, 2010; Keiser & Garner, 2012). An in-depth discussion of pattern making skills is embraced in garment making processes (see 2.4.3).

Fit problems may further originate from careless construction (Brown & Rice, 2014:212). Problems which emerge during lay out, cutting, and assembly of garment parts often result in bad fit, consequently adequate attention needs to be paid to these processes (Rasband & Liechty, 2006:55). Unskilful use of fabric grain, for example, can result in lack of balance in garments, thereby leading to poor fit (Keiser & Garner, 2012:378-379; Brown & Rice, 2014:214-216). Construction factors that lead to fit problems are also discussed in-depth under knowledge and skills pertaining to garment making processes (see 2.4.3).

Keiser and Garner (2012:378-9) and Brown and Rice (2014:213-4) recognise the need for clothing manufacturers to understand how to evaluate the quality of fit on a customer's body based on criteria for fit evaluation. There are five classic elements for fit evaluation, these include: grain, set, line, balance and ease. These elements serve to describe different, yet related aspects of fit which should be understood by clothing manufacturers, including tailoring MSEs and custom–tailors. Clothing manufacturers can ensure fit through fit testing to check the size, balance, ease, style, and silhouette of the garment, by making a toile to be fitted and evaluated on the body before the main garment fabric can be cut (Shaeffer, 2014:4-5). Thereafter, the patterns can be corrected and then used to cut patterns for final assembly of the main garment.

Balance and ease are fundamental components of establishing the fit of basic block patterns or slopers (Glock & Kunz, 2005:175). Grain, which encompasses the warp and weft or filling yarns in woven fabrics, determines the balance. A fabric is on-grain when all warp threads run parallel to each other, yet intersect with weft yarns at right angles. Failure to align the pattern to the fabric grain, especially in woven fabrics may result in the fabric being cut off-grain and is likely to present fit problems.

A skewed or bowed fabric may also result in an off-grain garment. However, mistakes due to poor grain can be very expensive as these cannot be corrected once the fabric is cut, and the pattern or fabric choice must be revised (Keiser & Garner, 2012:378). While an on-grain garment hangs evenly and appears symmetrical, an off-grain garment will not hang straight (Brown & Rice, 2014:217). This may lead to twisting of seam lines and result in the garment hanging crookedly due to variations in the orientation of fabric in each half of the garment.

A garment is balanced when the right and left sides of the body appear to be even when viewed from the front, back, and side (Keiser & Garner, 2012:380). While poor posture may contribute to lack of balance, errors in pattern-making or inaccurate construction techniques can also be responsible for lack of balance. Balance also relates to the elements of line and grain, with a garment cut off-grain resulting in lack of balance (Brown & Rice, 2014:219).

A ‘line’ refers to the alignment of the structural lines of a garment to the lines of the body (Keiser & Garner, 2012:380). The garment manufacturer should ensure that warp grain is perpendicular to the floor at center front and back, on sleeve and from the shoulder point to the elbow. Likewise, vertical structural lines or seams should be perpendicular to the floor (Shaeffer, 2014:4-5). Furthermore, curved lines should follow body contours as bust darts point to the crown of the bust but not reaching or bypassing it (Keiser & Garner, 2012:380).

Set on the other hand refers to a smooth fit without undesirable wrinkles (Brown & Rice, 2014:217). The presence of unintended wrinkles in a garment often signifies that the garment is too small or too large in the area where the pull or sag occurs

(Keiser & Garner, 2012:378-9). A savvy pattern-maker should be able to identify fit problems that are due to set by simply observing the direction of the wrinkles. These problems, however, can only be corrected in the sample making stage.

Ease is even more complex as it involves all parts of the garment in different ways (Keiser & Garner, 2012:380). Ease is discussed extensively under pattern-making techniques. It is, however, evident from the literature and empirical studies that knowledge of fit may enable tailoring apprentices and graduates of TA to produce clothing products which are not only acceptable to customers, but which can also be appreciated by other individuals who come into contact with the garment wearers. The current study assumed that apprentices are taught how to apply elements of fit to evaluate fit before actual patterns are cut and after the garments are finished through fit trials.

Comfort: Kadolph (1998:30), Brown and Rice (2001:198) and Rosenau and Wilson (2014:264) describe comfort as the way in which an item of clothing interacts with the body of the wearer. Similarly, Chase and Quinn (2003:93) describe comfort as the ease in wear of a garment. The positive feelings experienced by garment wearers contribute to psychological comfort.

Many clothing consumers increasingly place priority on comfort that their clothing accords them while wearing the garments (Keiser & Garner, 2012:88). Comfort is an aspect of quality that can be a source of consumer satisfaction (Fiore & Damhorst, 1992:169). Poor fit is a major cause of discomfort when a garment is worn. Comfort relating to fit has been extensively discussed under various sections. The study expected that the tailors and their apprentices would be knowledgeable of the attributes of comfort, sources and how to utilise these in the creation of comfortable garments.

End use: Garments should function according to the intended uses for which they are purchased or made (Shields, 2011:xxx; Brown & Rice, 2014:188). A garment's end use is the intended purpose for which it is being made (Kadolph 1998:335; Brown & Rice, 2001:54). Knowledge of end use is helpful to clothing manufacturers

in determining the appropriate performance standards in relation to the functional and aesthetic requirements. This is because the end use affects how consumers evaluate garment quality (Brown & Rice, 2014:81). A bridal wear, for example, may not be evaluated in terms of durability and-or ease of care since it serves a once off activity. However, its beauty and ability to flatter the wearer's appearance count a lot to future brides. Similarly, parents who contemplate purchasing children's play clothing may scrutinise garments for performance factors such as fit and comfort. Therefore, in addition to being aesthetically appealing, the garments should aid children to move with ease and to feel comfortable. Garments may also be evaluated for ease of care, since their use automatically subjects them to frequent laundering. All these imply that the fabric, the construction and finishing should be strong enough to support the intended end use as well as the intended care (Brown & Rice, 2001; Beer, 2010; Shields, 2011:xxx).

From these examples, custom-tailors should be able to understand end uses for which customers order garments, to provide garments with suitable design solutions. Knowledge of end use also informs decisions regarding selection of the physical components bearing properties which should be incorporated in the garments to be made. In addition, custom-tailors also need to understand the garments' end users with regard to age, image, and lifestyle among others. Lamb and Kallal, (1992); Chase and Quinn 2003; Tate (2004:135-6); McCann *et al.* (2005) and Suh *et al.* (2010) emphasise the need for in-depth understanding of the end-users, to inform decisions regarding the balance between functional and aesthetic considerations for the garments to be made.

Ease of care: Garment care is a major factor in the clothing decision-making process (Marshall, *et al*., 2004:353). Ease of care describes how a garment responds to cleaning methods (Kadolph, 1998:31). Clothing manufacturers are supposed to be intimately involved in decisions relating to garment care for customer satisfaction (Kadolph, 1998). Interest in garment care should relate to how it will respond to soil and stain removal and shrinkage; how the laundry products may influence fabric colour and abrasion resistance properties as well as the garment's features such as pockets and collars.

When evaluating ease of care, notable concerns often relate to whether the product dimensions will remain consistent in size and shape. In this regard, shrinkage is noted as a common issue which requires that fabrics and materials used in a garment be compatible with regard to cleaning methods (Kadolph, 1998:31; Tate, 2004:66). The fibre content and fabric properties should give a clue to the expected performance of the garment in relation to its care (Kadolph, 1998:136).

Durability or serviceability: Durability refers to the wearing qualities of the garment as it serves the intended purpose (Kadolph, 1998:28), in terms of how well it retains its original look or shape (Rosenau & Wilson, 2014:263), and/or the expected lifetime of the garment or its construction (Shields, 2011:xxix).

The durability of a garment mainly looks into how well the garment retains its structure and appearance after wear and care. Durability concerns therefore, relate to whether the garment can resist shrinking, the integrity/reliability of construction (if the seams will remain intact) as well as the reliability of features such as zippers or openings as well as fabric strength (Kadolph, 1998:29; Shields, 2011:xxxi; Brown & Rice, 2014:70;). Customers recognise features that make garments durable, such as quality-construction decisions (linings or enclosed seam finishes, evenly stitched buttonholes that are not fraying, and topstitching that is not coming undone) will add to its wearability (Shields, 2011:xxix).

In addition, durability of colour (colour fastness) and appearance of materials such as fashion fabric, threads, buttons and lining, support fabrics as well as padding among others also contribute to a garment's overall durability (Beer, 2010:88). It is also worth noting that deterioration in durability may also be experienced in less measurable dimensions such as fit, style, and fashion (Kadolph, 1998:22-23).

2.4.2.2 Aesthetic performance of clothing products

Aesthetics refers to the study of human reaction to non-instrumental qualities of an object or occurrence (O'Neal, 1998). A total aesthetic experience includes the

appreciation of the formal, expressive and symbolic qualities of a product, appearance or environment (O'Neal, 1998; De Klerk & Lubbe, 2008).

Aesthetics is vital to the initial sale and overall success of a garment (Bye & Hakala, 2005:48). Aesthetics influences the consumers' perceived product quality (Fiore & Damhorst, 1992), and the ultimate satisfaction with the product (Schmitt & Simonson, 1997). This is important as consumers tend to remain loyal to businesses that consistently meet their aesthetic needs. A garment's aesthetic features are of primary importance in its selection and purchase (Eckman, Damhorst & Kadolph, 1990), as they contribute to the overall aesthetic experiences that consumers desire (Kimle, 2010:4).

The aesthetic performance of a garment refers to its attractiveness, appeal and/or beauty to a consumer (Brown & Rice, 2014:70). Chase and Quinn (2003:8) maintain that beauty is a basic need that is emotionally necessary for human survival. The authors further argue that beauty is not something extra that might or might not be provided, but it is a necessary ingredient of human lives. As such, creating a beautiful product should be every designer's goal.

Marshall *et al.* (2004:94) point out that ideals of beauty are part of people's culture. Individuals learn about what is considered beautiful from their socio-cultural context. However, standards of judging what can be regarded as beautiful tend to vary from one region to the other. Moreover, there is no right way for all people to be beautiful. Tate (2004:133) echoes similar sentiments by affirming that fashion is constantly changing, and that with every new fashion emerges a new standard of beauty. These variations tend to make aesthetics of garment design difficult to define in a specific manner.

Similarly, Kadolph (1998:23) and Shields (2011:xxx-xxxi) concur that aesthetics tends to be more subjective than any other measure of quality. Given the multifaceted variations in fashion and standards of beauty, it is crucial that the customers' fashion preferences be established and addressed accordingly This makes it important for clothing manufacturers including custom-tailors and

dressmakers to not only understand, but also respect customers' aesthetic preferences as ultimate users of the garments.

The general aesthetic features often play a more powerful role in determining individual customer's acceptance of a garment (Brown & Rice, 2001:47). A garment's aesthetic performance relates to how its design, materials, and construction techniques fulfil a consumer's appearance expectations. Design impacts the visual appeal of garments and the ultimate acceptance by consumers. Likewise, formal features of a garment such as colour, texture, line, shape, balance, rhythm and proportion contribute to aesthetic quality and the desired aesthetic experience (sensation) (Kimle, 2010:7). This makes it important to ensure that a garment's elements of design (colour, line, shape, form, and texture) reflect good design principles (balance, proportion, emphasis, rhythm, and unity), and at the same time meet the consumer's desired aesthetic appearance to elicit satisfaction (Brown & Rice, 2014:70).

In addition to elements of design, the consumer's fashion preferences, in terms of classic or current fashion trends should also be identified and addressed (Brown & Rice, 2014:70). For example, individuals who value high fashion often prefer fashion items that appear at the beginning of a fashion cycle, while those who prefer classic fashions may not be interested in a particular style or a less extreme version of a particular style (Kadolph, 1998:27). Designers and manufacturers therefore need to understand how a garment's aesthetic properties influence the consumers' senses of touch and sight including their perception of aesthetic quality, to produce products with the desired aesthetic attributes.

A garment's aesthetic appearance should fulfil the wearer's emotional needs, such as wanting to impress or to convey an image that will be accepted by others (Brown & Rice, 2014:70). Shields (2011:xxxi) equally asserts that a garment's aesthetic appearance must be pleasing to customers, to use it in tangible ways to express their self-image to others, and to reassure themselves about their appearance. Customers may also use garment aesthetics to create a symbolic representation of who they want to be, or use garment aesthetics to feel confident that they are

appropriately dressed for a certain occasion, or to show that they belong to a certain group.

A garment's aesthetics can also be met when its fashion, style and fit address the customer's aesthetic expectations (Tate, 2004:65). In this case, the silhouette and the type of fabric should produce a garment that is appropriate for the customer's specific needs (Beer, 2011:84). For example, a party dress and a night gown may have a similar silhouette, yet are made from different fabrics which serve to differentiate the garments with regard to end uses. When combined with colour and fabric, the silhouette gives the garment its unique aesthetic and functional personality which suits the customer's aesthetic expectations.

The attractiveness of a garment's appearance may also be achieved when the components work together to enhance its overall appearance (Kadolph, 1998:27). For example, the interlining should not alter the way the collar rolls, instead, the two should complement each other to create an aesthetically appealing component of the whole that remains consistent throughout the garment's use. In addition, the patterns from which the garment components are cut also need to physically fit together, to create an overall structure with integrity for an attractive appearance to the customer (ibid.).

Workmanship or how a garment is constructed equally affects its aesthetic performance (Kadolph, 1998:28). This may include how the pleats fall on a skirt, how well the plaids or fabric motifs match at seam overlaps, the way buttons and buttonholes line up on a shirt or jacket, and the degree to which the dimensions of a symmetrical product are identical between right and left sides. Similarly, construction details such as seams and seam finishes that are well placed and neatly sewn, with the possible addition of a design detail in the seam construction or a higher level of quality, tend to be attractive to customers who feel that the garment represents them well and will be an asset to their image (Shields, 2011:xxxiv). It therefore, follows that custom-tailors and their apprentices should be aware of the attributes of construction aesthetics which can add to garment aesthetics.

Chase and Quinn (2003:4) point out that how well the designer blends the aesthetics and technical expertise, to solve the established design problems, forms part of the measure of a garment's success. This implies that a good design can be a failure if technical skills needed to transform it into the desired physical garment, are not adequately developed. It, therefore, follows that tailoring and garment manufacturing MSEs may be well placed if they have skilled tailors who can translate designs into physical products which can solve design problems practically. The literature that follows, covers the aspects of technical skills that skilled tailors should develop.

2.4.3 Knowledge and skills pertaining to garment making processes

Knowledge of techniques of garment making processes as well as skills are important to tailors and garment manufacturing MSEs within Kenya's IS. Most tailoring MSEs are managed by single tailors who perform all tasks from conception of the design to finishing of the garments (McCormick *et al*., 1997). Important technical skills needed to perform the tasks include: techniques on how to take body measurements, pattern-making, fabric preparation and layout and cutting as well as garment assembly and/or sewing and finishing processes. These are discussed in the section that follows.

2.4.3.1 Techniques of taking body measurements

In the manufacture of custom-made clothing, the customer's body measurements are taken and used to fit her unique body shape and size (Glock & Kunz, 2005:196; Koskennurmi-Sivonen & Pietarila, 2009:256; Aldrich, 2008:178). In addition, traditional tailoring makes use of the customer's measurements to create new patterns (Di Lorenzo, 2010:47) and styles for custom-made garments from scratch (Knowles, 2005:44).

In traditional tailoring, a custom-tailor or dressmaker uses ordinary tape measure to obtain a client's body measurements (Mastamet-Mason, 2008:19). However, different tailors may follow different procedures due to varying levels of expertise (Schofield, 2007:152). While it is important to use body landmarks to guide the

measurement process, this hardly occurs in traditional tailoring. Such an omission may result in inaccurate measurements, and is likely to lead to compromised fit and appearance of the ultimate custom-made garment.

In traditional tailoring, the body dimensions to measure are pre-determined by the type of garment to be made (Cornell University, 2003). However, most tailors take body measurements while clients are fully clothed. In addition, most tailors commonly run the index figure between the tape measure and the body to ascertain that the tape measure is neither too tight nor too loose. While these can lead to inaccurate measurements, the client's posture and shift during measurement can further compromise accuracy of measurements. These challenges may result in production of ill-fitting garments (Yu, 2004:173; Strydom & De Klerk, 2006).

Following the limitations associated with the manual ways of taking body measurements based on the tape measure, the use of body scanning technology may provide a solution. Three-dimensional (3-D) body-scanning provides a means of taking body measurements more efficiently and with fewer errors than when taken manually by a person (Brown & Rice, 2014:232). This technology is positioning clothing industry to design better-fitting clothing for consumers. The anthropometric body scans can produce lots of information that define human size and shape within a short time (ibid). Bye et al. (2006:68) assert that the importance of body scanning is not only in the enhanced measurement capture and depth of data, but also in its ability to enforce a better understanding of the body, its proportions and its relationship to clothing, which the manual methods of body measurements cannot achieve.

Moreover, through body scanning, digitalized 3-D human body scans can be obtained readily to facilitate creation of 3-D garments that ensure fit (Hong, Zeng, Bruniaux & Liu, 2016:1262). A garment is a 3-D shape made from a 2-D pattern to cover the complex geometry of the human body (ibid.). While an opportunity to equip tailors in the IS with knowledge of 3-D body scanning technology and its use may enhance performance in terms of provision of personalised fit, the high expense involved renders it inaccessible. Furthermore, most IS tailors not only have basic

education, but also tend to rely on outdated technology to acquire basic technical knowledge and skills informally. The limited education and poverty further constrain tailors' capability of acquiring the applicable technological knowledge. Following these constraints, it is plausible to say that traditional tailors should be presented with opportunity to acquire the right skills to obtain accurate body measurements using the tape measure.

Knowles (2005:19) asserts that the ability to take accurate body measurements is an important skill for pattern-making that all pattern-makers should learn. Similarly, Bye, LaBat, & DeLong (2006:66-68) point out that success in individualised tailoring demands a professional approach to obtaining accurate body measurements. Effective interaction with customers when taking body measurements is known to be helpful in setting them at ease. This also enables those taking measurements to become conversant with the body shapes and sizes and helps to raise the level of accuracy of body measurements. Measures to obtain accurate measurements promote production of patterns with the right amount of ease, style and fit (Aldrich, 2008:178).

Burke (2011:144) points out that accurate body measurements are needed to develop patterns that can achieve good fit. Current and accurate body measurements can guarantee a 'personalised fit', which is the main attribute that sets custom-made clothing apart (Reader's Digest, 2002: 27-29). Fit is, however, very individualistic, therefore, knowledge of the customers' fit preferences is crucial to how body measurements are taken (Alexander *et al*., 2005:53). This underscores the need for custom-tailors to acquire relevant skills on how to obtain specifications needed to create the customer's preferred style and fit (Rasband, 2002:359; Frings, 2005:6; Glock & Kunz, 2005:196). Only then can the tailors transfer relevant skills to apprentices.

Accurate measurements can be obtained by ascertaining that customers dress in minimal undergarments (Burke, 2011:144). This, however, should be approached very cautiously as some people may regard the manual processes of obtaining body measurements as invasive (Knowles, 2005:19). Where possible, body parts to be

measured for the particular garment type to be made should also be identified and marked (Knowles, 2005:21).

In learning how to take body measurements, one requires sufficient math skills. This is useful in reading the measuring tape and rulers in fractions, computing drafting math, and calculating fabric yardage among other activities (Joseph-Armstrong, 2010:7). Careful recording and safe keeping of the obtained body measurements for each and every customer is also essential to preparation of patterns for the customers' garments (Di Lorenzo, 2010:37). Once the body measurements are obtained, a custom-tailor commences the process of pattern-making.

2.4.3.2 Pattern-making techniques

Di Lorenzo (2010:47) asserts that in traditional tailoring, everything starts with knowing the design. This is often followed by making the pattern. A pattern is a fundamental piece in the art of tailoring, and is essential to all tailoring projects. It is a flat depiction of the 3-D design, and the model for creation of the future garment.

Pattern-making entails interpretation of a garment concept from a sketch, a photo, or other existing products, into a paper representation or template for use in production of a finished garment style (Keiser & Garner, 2012:328). In ready-to-wear clothing manufacture, the pattern-maker is responsible for understanding a new design and its reproduction into a pattern (Di Lorenzo, 2010:47). However, in traditional tailoring, the tailor creates a new pattern that matches the measurements of a single customer (ibid). Although there are some slight differences in the process of pattern-making in ready-to-wear and traditional tailoring, the fundamentals of the pattern are essentially the same.

Pattern-making is a crucial step in clothing product development (Keiser & Garner, 2012:328). Pattern-making methods constitute high technical skills, thus, individuals with pattern-making expertise are valued as development of the skills involved to the highest level takes long (ibid.). Aldrich (2008:5) acknowledges the importance of pattern-making skills by asserting that the success of a design depends on the

quality of pattern-making and cutting skills. Tate (2004:80) equally adds that a good grasp of pattern-making skills can provide custom-designers with the flexibility to create attractive designs.

The demand for pattern-making expertise in custom-tailoring is however, even more crucial. Custom-tailors mostly create patterns from scratch to meet the varied customers' unique design and fit needs (Koskennurmi-Sivonen & Pietarila, 2009:256). Chase and Quinn (2003:70-71), however, point out that creation of patterns from scratch demands a high degree of pattern-making skills.

In recognition of the complexity of pattern-making skills, Knowles (2005:xv) suggests that it is important to teach students pattern-making theory alongside detailed drawing of the pattern-making processes. Knowles asserts that learning pattern-making skills can only be effective if a student understands the processes and steps of completing a pattern, as well as how all of the pieces work together in a finished garment. From the literature, it is evident that acquisition of pattern-making skills requires a highly focused skills training to transfer the underpinning knowledge and associated skills to students.

According to Keiser and Garner (2012:334), patterns for new garments can be acquired through the following pattern-making methods: (1) draping, which is a 3-D method; (2) flat-pattern drafting; (3) drafting patterns directly from body measurements; and (4) drafting a pattern from an existing garment. The latter three categories represent 2-D methods.

Pattern draping is a design process in which patterns are developed by pinning and marking fabric pieces placed on a body form, or human body, into the desired shape (Knowles, 2005:1; Keiser & Garner, 2012:334). The draped pieces of fabric are then corrected and transferred onto paper. These are then converted into a 2-D paper pattern for cutting out garment pieces. This method is usually reserved for higher price point garments. It therefore follows that custom-tailors who have knowledge of pattern draping may have a greater advantage over those without.

Flat pattern-making is the most widely used method in clothing manufacture (Keiser & Garner, 2012:330). Flat pattern-making is a design process in which a basic block is used to create a pattern for a new style. Individuals who are new to the field of flat pattern-making should approach the process by first learning how to draft the basic sloper set (basic dress) (Knowles, 2005:43). These can then be traced onto pattern paper for further manipulation or development into new or more complex styles.

Almost any style can be developed from the basic dress which forms the foundation for pattern-making, fit, and design (Joseph-Armstrong, 2010:38). The flat pattern-making method relies on three major pattern-making principles and techniques which include: dart manipulation, added fullness, and contouring. These principles should be well understood by individuals engaged in the learning process (Joseph-Armstrong, 2010:69). The flat pattern-making technique is not only logical, but can also easily be demonstrated. This makes it essential to fashion designers in general (Zamkoff & Price, 2009:vii).

Knowles (2005:2) points out that provision of clothing that conforms more closely to the body, using non-stretch fabrics requires shaping techniques such as darts, pleats, gathers, or style lines at strategic areas of the garment. This enables the fabric to fit smoothly over body contours. This is particularly important when making patterns for the adult female form, which has many convex and concave curves.

Pattern drafting is a design process which begins from scratch for each garment style (Keiser & Garner, 2012:332-3). Body measurements are used to develop patterns by adding style lines and ease to form a 2-D paper pattern for the design. This can be done manually or by a computer-based programme. Although tedious and time consuming, drafting original patterns can be very useful in creating unique garments, and for designing products for individuals with unique and-or exceptional fitting needs. The finished paper pattern is then placed on top of the fabric as a guide to cutting out the garment pieces (Knowles, 2005:1).

Part of effective pattern-making skills entails the ability to determine the right amount of ease. Ease is the degree of roominess in a garment (Brown & Rice, 2014:219).

Ease also refers to the difference between body measurements of the garment wearer and the measurements of the actual garment. A garment can have fitting or movement as well as design or style ease. Movement ease is the amount of ease which allows the garment wearer to bend, sit, walk and feel comfortable while wearing the garment. This type of ease is mandatory in all garments irrespective of style.

On the other hand, style or design ease is the extra fullness above the movement ease (Brown & Rice, 2014:220). It is responsible for the attainment of the desired appearance and gives the garment its style. However, if the amount of style ease exceeds the acceptable limits of the desired style or design concept, then design aesthetics or attractiveness may be lost.

From the foregoing discussion, it is evident that custom-tailors as well as their apprentices should know how to skilfully transform customers' body measurements into patterns, which can produce designs/styles with the right amount of ease for an attractive and comfortable fit (Knowles, 2005:19; Bye *et al.*, 2006:66-68; Aldrich, 2008:178).

Knowledge of pattern making can, however, be incomplete without understanding the role of grain in pattern-making and cutting (Knowles 2005:4). Grain lines are placed on pattern pieces to ensure that pattern placement on the garment fabric is in line with design expectations. For good fit, the garment must be cut on grain (Brown & Rice, 2014:217). This can easily be achieved if grain lines are boldly and accurately indicated on patterns. Grain lines can be placed on the paper patterns to indicate whether the pattern should be cut on the straight or cross grain and/or on the bias of the fabric (Joseph-Armstrong, 2010:9). Glock and Kunz (2005:412) observe that well-labelled patterns, which include grain indicators, are helpful in attaining the desired design aesthetics and fit.

To ensure that patterns can guarantee perfect fit and comfort, their accuracy should be ascertained (Di Lorenzo, 2010:47). This is particularly important in complex designs where perfect fit is desired. This can be achieved by using the drafted

patterns to cut and make a sample garment or toile to be fitted, assessed and refined prior to cutting the main garment fabric.

Shaeffer (2014:3) asserts that fit is as important to the success of a garment as the design. This necessitates evaluating the sample garment not only for fit (size), but also with respect to balance, ease, style and silhouette. Glock and Kunz (2005:175) point out that balance and ease are fundamental in establishing the fit of basic block patterns. Fabric grain determines the balance. Grain encompasses the warp and weft or filling yarns in woven fabrics. A fabric is on-grain when all warp threads run parallel to each other yet intersect with weft yarns at right angles. A lack of reflection of this on a woven or knitted fabric indicates that fabric is off-grain.

The warp grain needs to be perpendicular to the floor at center front and back, on sleeve and from the shoulder point to the elbow (Shaeffer, 2014:4-5). Similarly, vertical structural lines or seams should be perpendicular to the floor as well. The sample garment should also be assessed for ease. This is evaluated in terms of comfort and appearance. Once the pattern appears to meet fit standards, the main garment fabric can be prepared for final cutting.

2.4.3.3 Techniques of fabric preparation, layout and cutting

Techniques of fabric preparation, layout and cutting also form important aspects of technical skills for fashion designers and manufacturers (Reader's Digest, 2002; Keiser & Garner, 2003:181; Aldrich, 2008:7; Burke, 2011:16). Common fabric preparation steps such as straightening, preshrinking, and pressing determine the success of the cut work and the finished product (Di Lorenzo, 2010:15-16). Straightening requires knowledge of the grain, graining techniques, and when to apply them. Examples may include the ability to identify fabric problems such as skews and bowing and realigning them for the purpose of accurate graining (Joseph-Armstrong, 2010:8). Pre-shrinking may be necessary when dealing with natural fibres (Di Lorenzo, 2010:16). An alternative remedy to shrinkage may entail leaving wider seam allowances (Knowles, 2005:415). When the fabric is ready for cutting, the layout is done for eventual cutting.

Patterns are produced to guide the process of cutting garment pieces for sewing (Di Lorenzo 2010:50). In traditional tailoring only one garment can be cut at a time. The layout of pattern pieces is therefore done manually for a single garment (Di Lorenzo, 2010:52). Glock and Kunz (2005:412) point out that cutting should be accurate as this facilitates sewing and improves garment quality, especially its fit and comfort. Inaccurate cutting, on the other hand may cause delays in sewing due to occasional adjustments, and may even cause fit problems. However, quality cutting such as smooth edges and precise corners are easier to align and position during sewing (Glock & Kunz, 2005:413). As apprentices learn cutting techniques, observation of the outlined precautions may lead them to acquire precision in cutting and enhance quality of work.

In the light of the advanced literature, knowledge and techniques of body measurement, pattern making, fabric preparation, layout and cutting can be operationalised as evidence of:

- The apprentices' participation in taking of body measurements;
- The participants' awareness of the need to obtain accurate body measurements;
- The tailors engaging the apprentices in the interpretation of garment concepts to patterns that reflect the customers' preferred designs and fit;
- Engagement of the apprentices in practicing pattern drafting and cutting activities;
- Engagement of the apprentices in theoretical learning of pattern drafting and cutting skills;
- Engagement of the apprentices in pattern graining techniques, lay planning and cutting processes; and
- The participants' engagement in various ways of fabric preparation techniques as well as demonstrating an awareness of the same.

2.4.3.4 Garment assembly/construction/finishing processes

Garment assembly is only one facet of clothing production process, however, it is very critical, being the stage where a product is created (Brown & Rice, 2014:396).

Lack of attention during the assembly process can make-or-break the most well-intentioned company.

Garment assembly encompasses joining of fabric pieces into a complete garment (Shaeffer, 2014:3). The garment assembly process in traditional tailoring or dressmaking relates closely to industrial process of sample-making where an individual is responsible for sewing the entire garment. Successful execution of whole-garment assembly processes requires sample-makers and or home sewers to develop extensive knowledge of the methods involved and to be highly skilled (Shaeffer, 2014:11). Custom-tailors, dressmakers and those working for garment manufacturing MSEs in the IS are no exception to these expectations.

The garment assembly process requires knowledge of stitching operations to accomplish basic production skills, which include operating all machines with coordination, skill, and confidence (Shaeffer, 2014:102-3). Success of stitching and of the garment depends on the operator's stitching skills. This is irrespective of the machines used, as basic skills of operating power machines are similar to all machine types including home sewing machines.

Thread: Stitches are formed from threads therefore, thread quality is an important part of garment quality. Unless used as a decorative touch, thread colour should match the fashion fabric (Marshall *et al.,* 2004:343). Threads used in a garment should also meet the expected aesthetics and performance standards for stitching and seams (Glock & Kunz, 2005:455). Keiser and Garner (2012:428) point out that thread is often responsible for up to 50% of the quality of the finished seams. However, seam quality can be affected by re-stitched seams due to thread breakage or skipped stitches, broken stitches after laundry, poor stitch appearance, fading or transfer of thread colour to fabric due to lack of colourfastness, seam puckering and/or needle cutting, and seam failure or open seams. Weak threads can easily compromise a garment's durability even if the fabric is strong (Brown & Rice, 2014:334).

Proper thread selection is a key element in the success of garments both during the rigorous process of production and finishing as well as in performance during use (Keiser & Garner, 2012:429). While there is no perfect thread for a specific application, the right thread can be selected based on fiber type, thread construction and size, sewability (manufacturing or sewing efficiencies), seam performance (durability and elasticity), seam appearance, availability, and cost.

Stitches: Stitches are formed when threads interloop or interlock during sewing machine operations (Keiser & Garner, 2012:426; Brown & Rice, 2014:334). Stitches include the joints between two pieces of fabric that are sewn together, and stitching which perform functions other than joining pieces of fabric together (i.e., edge-finish on garment edges and decorative stitches applied on the body of garments).

A sewing operator's accuracy is crucial in ensuring neatness, straightness, consistency and uniformity of stitches (Brown & Rice, 2014:334). A skilled operator sews stitches that enhance the garment's appearance and at the same time lead to durable and comfortable seams. However, crooked stitches such as those sewn past the intended stopping point, sloppily stitched corners and curves, uneven distance from the edge, and misplaced reinforcement tacks signify sub-standard sewing quality and inadequate sewing skills. Consumers often regard garments bearing inaccurate sewing as poor quality, and can readily identify sewing inaccuracies through close examination of stitches even with the untrained eye (ibid.).

Brown and Rice (2014:334) argue that since stitches hold a garment together, their quality is a critical gauge of clothing quality. Thoughtful selection of stitch types and appropriate choice of stitch length, needle size, thread type and size positively influence stitch quality as well as the garment's performance and longevity. An understanding of all the above may be of considerable benefit to anyone involved in the product development process, but more specifically to those responsible for garment quality (Keiser & Garner, 2012:426). This also applies to tailoring and garment manufacturing MSEs which usually engage a single tailor in execution of all garment assembly processes including quality.

Stitch quality must be good enough to satisfy the consumer's desire for performance (Glock & Kunz, 2005:428; Brown & Rice, 2014:334-5). Performance considerations for stitches may include durability, comfort and attractiveness. Factors which influence performance characteristics of stitches include end use, garment design, fabric type, location and purpose of stitches. While strong, durable stitches directly affect seam strength and garment durability, weak and non-durable stitches often lead to premature seam failure. In this regard, garments that receive hard-wear and heavy laundering require more durable stitches as opposed to those worn for special occasions. Similarly, garment locations that are subject to strain (sleeve to the body of garment or center back seam on pants) require stronger and more stitches per inch (SPI) than low-stress locations (Beer, 2010; Brown & Rice, 2014:352). Stretch fabrics also require more extensible stitches and sometimes multithread stitches than those made of woven fabrics. Stitches used in stretch fabrics should withstand the amount of stretch the fabric is subjected to without rupturing (Brown & Rice, 2014:334).

The length of stitches used in assembling garment components should be appropriate to the fabric (Marshall *et al.,* 2004:343). This is because stitch length directly impacts on garment performance. For example, too long a stitch affects the performance of seams. Incorrectly set stitch length can also ruin the fabric, cause seams to pucker, and-or cause seams to pull off the edge of the fabric (Shields, 2011:43). In general, shorter stitches produce more durable seams; however one should determine stitch length based on fabric and the purpose of the finished stitching (Keiser & Garner, 2012:428).

Signs of quality stitching may include: even stitches with no rupture, neat and straight stitches, and no excessive visible thread ends (Keiser & Garner, 2012:428). Uniform stitches placed in a straight line or a smoothly curved line on a curved seam also contribute to garment attractiveness (Brown & Rice, 2014:334). On the other hand, stitches that cause puckers, holes, snags, or runs, or that allow the seams to spread open or fail detract from the garment's appearance. By controlling stitch type, length and width; needle type, size, and condition; thread type and size; tension and related sewing machine adjustments, and operator accuracy, stitches with the

desired aesthetic and functional performance characteristics can easily be achieved (Brown & Rice, 2014:335).

Stitch type imparts functional and aesthetic performance characteristics in garments. A single garment can be constructed from several different stitch types. However, their selection should be guided by knowledge of performance advantages, disadvantages and purposes. Similarly, tension or how loosely or tightly the threads are held by the machine as it sews should be observed and proper tension balance used to ensure proper stitch formation (Brown & Rice, 2014:335).

Seams: Seams are the methods of making flat fabric into a wearable shape (Glock & Kunz, 2005:440; Shields, 2011:38). Seams provide the means to create the garment's structure and details (Brown & Rice, 2014:362). The performance of seams and edge treatments is critical to the overall performance of a garment, and is an important factor to assess when determining garment quality. Appropriateness of seam type and seam allowance is of particular importance in this regard.

A seam is formed when two or more pieces of fabrics are sewn together (Brown & Rice, 2014:362). The width of the seam (seam allowance) counts towards seam quality (Keiser & Garner, 2012:431). Wide seam allowances are generally viewed as a mark of quality, as they can easily be adjusted when the need arises. However, narrow seams are often evaluated cautiously as they are bound to rupture prematurely.

The success of every garment depends on the accuracy and skill with which the seams join the individual components of the garment (Shaeffer, 2014:113). Seams may range from inconspicuous, plain, and decorative ones. Garments often contain different seam types depending on their structure. However, the best seam is the one that yields the desired performance and appearance at the lowest cost. Understanding conditions for use of each and every seam type or finish may improve construction quality and profit.

Seam quality can be referred to as its integrity (Glock & Kunz, 2005:440). This is the ability of a seam to join materials or components, maintain an attractive appearance, stay durable, and remain securely stitched during use and cleaning of a garment. Seam strength and durability are as a result of its type and width, fabric strength and tendency to ravel, and characteristics of stitches used (Brown & Rice, 2014:362). Seam integrity can therefore be compromised by raw edge, broken/ripped seam, seam slippage, and seam grin. These attributes affect both aesthetic and functional performance of seams.

Seam selection depends on its location within the garment, the garment's intended use, styling factors, and the equipment that is available for seam production (Shields, 2011:38; Keiser & Garner, 2012:431). A garment's fit, fabric, care, and fashion also influence seam choice (Brown & Rice, 2014:365). Knowledge of function of a seam in the design of a garment, for example, elasticity, strength and flexibility is also critical in determining the type of a seam to use (Shields, 2011:38).

Elasticity refers to the amount of stretch that a seam can withstand and recover from without bursting its stitches. A good seam should stretch to the same degree as the fabric. Stretch fabrics or woven fabrics blended with Lycra, for example, often need stretch seams (Shields, 2011:39).

The majority of consumers perceive seam strength as an indication of garment quality (Shields, 2011:39). Therefore, the presence of a defect such as seam grin (stitches which show through on the right side of a garment along the seam line), stitching that appears loose or even broken signifies poor quality. If seams split, the garment falls apart, so their strength and durability affect overall garment durability. Good quality seams are however, as strong as the garment's fabric, since both need to withstand the same amount of stress (Brown & Rice, 2014:362).

Seam flexibility is attained when a seam flows and drapes with the fabric to preserve the design statement of a garment (Shields, 2011:39; Brown & Rice, 2014:362). Seam flexibility contributes to comfort of garments during wear as this allows for freedom of movement. On the other hand, seams that are stiffer than the fabric tend

to be uncomfortable as they poke and rub the wearer. A lack of seam flexibility tends to impact on the garment's aesthetic appeal due to reduced drape. Trimming off of bulky seams as often used in home sewing is helpful in reducing bulk and increasing flexibility. Paying attention to fabric stiffness, type of thread, stitch and its length is also important as these affect seam choice and flexibility.

Seam aesthetics also influences selection decisions (Shields, 2011:39). The visual impact of the seam may simply require it to be neatly sewn with trimmed ends. If used as part of the fashion appeal, then treatments such as topstitching, a contrast bias binding, piping, or a textural trim, might be the part of design treatment that convinces the customer to consider the garment.

Characteristics of fabrics used to construct a garment also have a direct influence on seam choice, finish, thread type and needle (Shields, 2011:39). For example, the fibre content of a polyester crepe requires thread that does not shrink, a needle that will not snag the yarns, and a stitch that will allow the fabric to drape beautifully without causing seams to pucker.

The structure of yarns in a woven fabric also contributes to the fabric's ability to hold onto stitches making the seam (Shields, 2011:39). For example, a seam sewn on a fabric such as chiffon, or satin that is woven with slippery yarns, may pull away from the garment, to result in a flaw that is almost irreparable.

Finishes: A finish is any technique used on the edge of a seam or hem allowance to prevent fabric from fraying during use or cleaning (Di Lorenzo 2010:70; 2011:37; Shaeffer, 2014:150). These features also improve the appearance and comfort of garments and strengthen the seam itself (ibid). Shields (2011:37) points out that seams are incomplete without seam finishes. Raw edges in certain fabrics, especially woven mostly unravel or fray if left without being neatened. However, a finish should not add bulk to the seam or hem and should be invisible from the right side of the garment after pressing and during wear. A variety of finishes are available, but the best edge finish is one that produces the desired appearance and performance at the lowest cost.

Seam finishes are generally applied during the assembly process, when the seam is stitched, after it is stitched, or sometimes even before it is stitched, but before the seam is crossed by another seam. A finish can also be applied to a single ply of an open seam or to both plies together (Shaeffer, 2014:151).

Once the major parts of a garment are joined, the seam has to be finished (Brown & Rice, 451). Finishing details such as attaching buttons and buttonholes or closures in general, decorative stitching and trims, as well as finish pressing are needed to complete the garment. Principles governing the working of these processes should be acquired to foster skilful practice.

From the advanced discussion, it is apparent that custom-tailors not only need to teach apprentices how to construct seams, but also transfer knowledge of performance features that lead to production of seams with the desired level of integrity and aesthetics. In addition, knowledge of relevant finishes that remain functional and attractive throughout the garment's life spun, for example, buttons and buttonholes that close without gaping and zips that run smoothly without getting stuck add to continued use of the garment. A more integrated approach to learning may be required to foster understanding of factors which work together in the attainment of attractive, strong, durable and more functional and aesthetically pleasant seams and garments.

2.5 SUMMARY

This chapter justifies the need for clothing manufacturers to understand clothing product quality and principles of garment making processes in addition to being conscious of quality. The chapter identifies the aspects of knowledge which clothing manufacturers are expected to have. These include: dimensions of clothing product quality: (1) physical (design, fabric, construction and finishing) and (2) performance (aesthetics and functional) features. In addition to these is knowledge and skills pertaining to garment making processes (techniques of taking body measurements, pattern-making, fabric selection and preparation, layout and cutting and garment

assembly and finishing). These formed the content of the body of knowledge which the study assumed should be acquired by tailoring apprentices (**FIGURE 2.1**).

The body of knowledge collectively form the basis for analysing curriculum content for TAs in tailoring. From the literature, it seems plausible to say that acquisition of knowledge and skills relating to the discussed body of knowledge can enhance the apprentices' ability to perform skilfully as future tailors, be they self-employed or hired as tailors within tailoring and garment manufacturing MSEs in Kenya. Acquisition of the knowledge and skills can, however, be enhanced through application of a well-researched curriculum, one that addresses knowledge and skills needs for apprentices as well as tailoring and garment manufacturing MSEs in general. The next chapter (Chapter 3) discusses curriculum theory as a basis for understanding, analysing and describing the aspects of knowledge that apprentices acquire through TA in tailoring.

CHAPTER 3: THEORETICAL PERSPECTIVES ON CURRICULUM

3.1 INTRODUCTION

The previous chapter (Chapter 2) discusses the theoretical framework regarding clothing product quality and processes of garment production. The literature provides a basis for compiling the knowledge framework to guide the empirical phase of the study. The current chapter (Chapter 3) provides curriculum theory, with specific attention to selection of the body of knowledge to meet goals for choosing to participate in vocational training. The chapter also presents curriculum development theory. These theories are instrumental in analysing curriculum practices in TAs in tailoring, to establish its effectiveness and or ineffectiveness in developing knowledge of clothing product quality and processes. Based on the theories, the study explores challenges to knowledge and skills development within the context of TAs in tailoring. The empirical findings together with curriculum development theory inform the development of a curriculum model as the overarching goal of the study.

3.2 CURRICULUM THEORY

The term curriculum originated from a Latin word “racecourse”, which means to run a race (Marsh & Willis, 2003:7; Hoadley & Jansen, 2012:29). Within the educational arena, this term has been interpreted to mean the race to be run by learners, with subject matter as the hurdles to be overcome along the way. However, at its basic form, curriculum as a concept is often taken to mean an experience that is set to achieve a particular goal (Marsh & Willis, 2003:7).

Although often associated with formal education, Moore (2004) and Billett (2006, 2011) contend that curriculum as a concept does not have to be limited to formal education. According to the authors, the concept of curriculum can also be applied to practice-based and/or workplace learning in general. Lave (1977, 1982) applied the

principles of curriculum in analysing curriculum for TAs in tailoring in terms of learning processes and outcomes. Similarly, in exploring the strengths and weaknesses of TAs as a mode of skills development, researchers such as Liimatainen (2002) and Haan (2006) often referred to the concept of curriculum. Following the use of the concept of curriculum outside formal education, and its application within the context of TAs, this study applies the concept of curriculum and associated theories in analysing TAs in tailoring within Kenyan context.

From the formal education perspective, curriculum theory provides the principles which underpin the process of knowledge identification and selection. These principles ensure selection of knowledge (subject matter) that is relevant and adequate to the purposes of engagement in a particular learning (Booyse & Du Plessis, 2008:24). Subject matter or knowledge forms the content of the curriculum that is intended to be taught to learners (Marsh & Willis, 2003:23-4). Curriculum is mainly concerned with selection of subject matter that ultimately translates into the people's knowledge, skills, competence, and intellectual work (Deng & Luke, 2008:66).

According to Deng and Luke (2008:71), curriculum should address basic questions often raised by teachers, curriculum theorists, and policy. Some of the major questions often raised include:

- What knowledge counts as the most worthwhile for any educational undertaking?
- What aspects of knowledge should be included and-or excluded from the curriculum content?

It is believed that answers to these questions should lead to identification of knowledge that is needed to address objectives for participating in a particular educational activity. Ornstein and Hunkins (2009:1) argue that whether a curriculum is conceived narrowly as subject matter taught in schools, or broadly as experiences which individuals require to participate fully in society, it nevertheless affects the educators, the learners and members of the society in one way or the other. The concept of curriculum arises from social activity however; the curriculum can be

designed for both present and emerging purposes, therefore, it is regarded as a highly dynamic phenomenon (ibid.). This makes it important to explore and understand curricular activities in TAs in tailoring which the current study assumes to play a significant role in the performance of tailoring and garment manufacturing economic sub-sector.

As a social construct, the curriculum reflects the culture in which it operates, as such the values of that society influence what to teach, and in turn shapes and reforms that society and its culture (Hoadley & Jansen, 2002:48; Booyse & Du Plessis, 2008:5). Consequently, the knowledge being learned will always benefit some people, particularly the politically and/or economically dominant groups, while disadvantaging others, mainly the economically disadvantaged individuals. Finally, the curriculum is often experienced differently by different groups of learners even when the plans are identical. Teachers' beliefs may influence how they teach and what content they select, which ultimately affect what learners acquire from the experienced curriculum (Hoadley & Jansen, 2012:85). Understanding these contextual factors is therefore, crucial to anyone interested in exploring and explaining the curriculum. Understanding factors which influence curriculum decisions focuses attention on understanding how the curriculum comes about.

3.2.1 The focal points for curriculum decisions

Marsh and Willis (2003:21-27) assert that a curriculum is never fixed in any final sense. Instead, a curriculum, whether planned or enacted should serve as the end point of a series of human decisions. As such, a curriculum should be subject to constant review and revision. New ideas about the curriculum should constantly supplant old ones, and thus the curriculum inevitably changes. It is further believed that most curricula are end points of decisions made, or at least influenced, by a great number of people. However, curricular decisions should be guided by certain basic focal points upon being considered carefully. Some of the focal points include:

- The nature of the subject matter;
- The nature of the society; and
- The nature of the individual.

3.2.1.1 The nature of the subject matter

According to Marsh and Willis (2003:23-24), the curriculum should aim at selecting subject matter that is more intrinsically worthwhile than others. This is the subject matter that accurately and broadly represents the reality of the world beyond the student's immediate experience. This is important in ensuring that knowledge and skills derived from the subject matter are applicable to and can be utilised within a wider work context within the society. In respect to this, a curriculum for TAs in tailoring should not only be limited to activities that occur within the tailors' workshops, as these are likely to be limited in scope depending on a specific enterprise's orientation. Instead, a broader coverage of subject matter beyond a specific enterprise's activities may enable graduates of TAs in tailoring to adapt to varied tailoring contexts with different knowledge and skills requirements.

Taking cognisance of the organising principles of the subject matter is also an important consideration. Bearing this in mind, the subject matter selected for presentation to students should be arranged consistently both with one another and with the inherent logic of the overall subject. The same principle applies to the internal characteristics of the overall curriculum, if made up of many subjects. Failure to address these concerns may give rise to an ineffective curriculum. Furthermore, inconsistency in the organisation of the subject matter may further lead to constrained learning and understanding (ibid.).

3.2.1.2 The nature of the society

Marsh and Willis (2003:24-5) point out that the curriculum is aimed at selecting subject matter that is useful to the society. This is subject matter that not only leads students to acquire knowledge of the external world, but also knowledge that can be successfully applied in the world. A useful curriculum should enable students to get acquainted with knowledge and skills that are partly derived from the surrounding society, as well as knowledge that can be applied instrumentally within that society to obtain, at the very least, the universal and material necessities of life such as food, shelter, and clothing. Curriculum therefore, looks into the immediate and long term

utility and applicability of the knowledge and skills within the society. In other words, a curriculum that is of value to the society enables performance of the current jobs, while remaining viable to promote desirable future challenges whenever necessary, without the knowledge and skills becoming obsolete.

As discussed in Chapter 1, the lack of specialisation among Kenya's dressmaking, tailoring and garment manufacturing MSEs within the IS and the need for highly skilled tailors, who can perform all tasks pertaining to production of custom-garments single-handedly, suggests that a curriculum that can equip apprentices with knowledge of clothing product quality as well as technical skills pertaining to garment production processes can ensure a wider applicability. In particular, a curriculum which provides knowledge of design, fabrics, performance dimension of clothing product quality and pattern making skills may be considered to be of greater value in meeting the society's knowledge needs and in solving their inherent limitations with regard to creativity and productivity. Moreover, a curriculum that provides theoretical principles of the outlined knowledge areas may benefit apprentices and society greatly given their transferability to the varied contexts and knowledge requirements. These aspects of knowledge enable creativity and innovation and can therefore foster adaptability to varied contexts (see 2.4.1.1, 2.4.1.2, 2.4.2, 2.4.3.3).

3.2.1.3 The nature of the individual

There are some common characteristics that make learners alike to some extent; however, they are also unique at the same time. The differences in attributes often pose difficulty in meeting every individual learner's interest from a single curriculum. Education basically aims at fostering developmental growth of each individual in terms of physical, cognitive and affective aspects. This implies that the curriculum content should be chosen in light of what promotes the growth for each individual in an immediate, public, and discernible sense; in a long-range, private and less easily discernible sense; as well as in view of the dynamics of each individual's own experience (Marsh & Willis, 2003:25-6).

Likewise, Dewey (1938) as quoted in Marsh and Willis (2003:26) argues that as an individual interacts with the environment, the course of that experience becomes the curriculum, and the purpose of each interaction is to increase the quality of that experience. In other words, the curriculum must be based on the general patterns of developmental growth of all kinds while at the same time it relates to an individual learner's interests and needs. In this regard, a curriculum can be viewed as a medium containing a potentially changing set of suggestions to an individual student, not a set of demands for all students. Similarly, the curriculum becomes a set of suggestions to the teacher about how to take advantage of the present opportunities to promote worthwhile growth for each student in the long run.

With respect to Dewey's (1938) initial principle which seems to suit the context of TA, it is plausible to say that apprentices with varied vocational interests and educational backgrounds may require varied sets of learning experiences. This implies that the curriculum becomes effective if it caters for the varied apprentices' vocational interests and training needs by ensuring that all are equipped with relevant and adequate knowledge and skills according to the varied vocational aspirations.

In agreement with the outlined focal points for curriculum decisions, Ornstein and Hunkins (2009:212) assert that an effective curriculum is one which enables students and teachers to access experiences that foster deep understanding, sophisticated skills, appropriate attitudes, and socially constructed values. The curriculum also needs to engage students in learning that empowers them to construct their own meanings while comprehending the wisdom of scholars.

Bearing in mind Ornstein and Hunkins' (2009) perspective, an effective TA training in tailoring should foster acquisition of both knowledge and skills pertaining to clothing product quality and process that are commensurate to the learners' developmental level and at the same time address their vocational interests. An effective curriculum may be designed based on an approach which best addresses the three focal points. In addition, it is also important to understand the process of curriculum development.

3.3 APPROACHES TO CURRICULUM DEVELOPMENT

Marsh and Willis (2003:68) assert that good curriculum work is challenging, and as such, requires more careful thinking than almost any other practical enterprise. An individual who undertakes curriculum work needs to have clear meaning of terms which are commonly applied to the curriculum i.e., curriculum planning, curriculum decision-making and curriculum development. These aspects are discussed next.

- Curriculum planning entails careful weighing of various options for what is to be intentionally carried out in the classroom (the planned curriculum), sometimes for how it will be carried out (the enacted curriculum), and occasionally what some of its results might be (the experienced curriculum). Curriculum decision-making refers to the suggestion of pushing beyond merely weighing alternatives to actually deciding which ones to carry out.
- Curriculum development is the most comprehensive of all, and entails not only the processes of weighing and deciding, but also of carrying out whatever options are decided upon, receiving feedback, and making constructive changes. The term development, in itself, suggests an unhurried, comprehensive, cyclical, and on-going process in which careful thought and worthwhile actions constantly refine each other.

Marsh and Willis (2003:66) further assert that curriculum development is a complex decision-making process which should result in constructive changes in the curriculum. However, the development of a curriculum is often based on approaches which address specific intentions (Booyse & Du Plessis, 2008:7).

An approach may mean an image, an orientation, a perspective, or a position (Marsh & Willis, 2003:72). Although approaches to the curriculum tend to differ, certain elements are common to all. The elements that are common to all approaches include:

- A clearly defined purpose;
- Content or knowledge and skills to include/teach;
- How the knowledge and skills will be included (the logical sequence of the learning activities and the teaching and learning methods), and

- How the success will be measured/assessed/evaluated (Booyse & Du Plessis, 2008:7).

It is believed that an understanding of the influence of different approaches on curriculum interpretation enables interpretation of already existing learning programmes and leads to design of curriculum with teaching and learning in mind (Booyse & Du Plessis, 2008:2). Marsh and Willis (2003:66) further observe that different approaches to curriculum work constitute different ways of thinking about curriculum, and of connecting thought with practice, whether the many beliefs and ideas that constitute any particular curriculum approach are made explicit or remain implicit. However, any set of beliefs can be considered as approaches if they are sufficiently consistent and comprehensive to present a reasonable guide for making coherent curriculum thinking and acting. A reasonable curriculum approach should constitute the following (ibid.):

- A discernible understanding of curriculum and the process of curriculum development;
- A value system sufficiently explicit to make clear the basis for specific decisions, such as preferred roles for participants in curriculum planning; and
- A critical consciousness of the basic assumptions about the world, society, and morality on which understanding and value systems rest.

Approaches are generally characterised by the kinds of curriculum questions they focus on. According to the renowned curriculum scholar, Posner (1998) in Hoadley and Jansen (2012), the three most influential categories of perspectives on curriculum planning can be characterised by three different questions:

- The procedural approach: What steps should one follow?
- The descriptive approach: What do curriculum planners actually do?
- The conceptual approach: What are the elements of curriculum planning and how do they relate to one another?

The overarching aim of this study was to develop a curriculum model. Based on this aim, the study views the procedural approach as most relevant in fulfilling the aims and purposes of this study. The procedural approach is discussed next.

3.3.1 The procedural approach to curriculum development

According to Posner (1975), Tyler's (1949) provides the best representative of the procedural approach to curriculum development. The approach is often labelled as "technical production" because it considers educational decisions objectively with schooling as a means to produce learning. In addition, Tyler's (1949) approach is often viewed as more appropriate to training than for education (Marsh & Willis, 2003). Furthermore, Tyler's (1949) scientific process of curriculum development is believed to be applicable to all areas of learning, i.e., from mathematics to woodshop (Null, 2008:480). Tyler's (1949) model also provides a clear focus regarding the selection of subject matter, how to teach it as well as how to assess learning to ensure that the outcomes of participating in learning the subject matter are consistent with the objectives (Booyse & Du Plessis, 2008:13).

Tyler's (1949) model is also appropriate in understanding and analysing a training curriculum, and can be used by teachers and educators to achieve whatever educational ends they may have in mind (Deng & Luke, 2008:73). Given the wide scope of application, including provision of answers on the steps to follow in the development of a curriculum, it is reasonable to adapt Tyler's (1949) model to explore and analyse curriculum practices for TAs in tailoring in order to understand its limitations, and inform the development of a curriculum model to be used as an intervention in the training of apprentices.

According to Tyler (1949), curriculum makers need to raise and answer four basic questions, which include:

- What educational purposes should the curriculum seek to achieve?
- What educational experiences can be provided that are likely to attain these purposes?
- How can these educational experiences be organised for effective instruction?
- How can the effectiveness of the learning experiences be determined?

In Tyler's (1949) view, these questions should be answered systematically in the order presented. This is because answers to subsequent questions logically

presuppose answers to all prior questions. For this reason, Tyler's (1949) approach to the curriculum is characterised as a "rational-linear" (Marsh & Willis, 2003:72). The application of Tyler's (1949) procedural approach in the development of a curriculum is discussed in the section that follows.

3.3.1.1 Educational purposes or objectives

According to Tyler (1949) as quoted in Marsh and Willis (2003:72), Deng and Luke (2008:74), Hoadley and Jansen (2012:44-5), the development of an effective and appropriate curriculum should be underpinned by explicit educational objectives. This principle is fundamental to subsequent steps in curriculum planning. Objectives should however, be developed by specialists based on research (Tyler, 1949) in Ornstein and Hunkins (2009:214) and Hoadley and Jansen (2012:62, 244-5). There are three major sources from which objectives can be derived:

- Studying learners' perspectives;
- Studying the contemporary life outside the school; and
- Suggestions from subject specialists.

Tyler (1949) is of the opinion that these sources can provide the data needed to answer questions relating to purposes or objectives of education. A single source of information, however, can be inadequate in providing a basis for wise and comprehensive decisions about objectives. This is because each of the three sources has certain values to contribute towards planning of any comprehensive curriculum programme (Marsh & Willis, 2003:72). These sources in effect represent the three focal points (individual, society and subject matter) which govern the comprehensive conception of curriculum (ibid.) as previously discussed.

Tyler (1949) in Ornstein and Hunkins (2009:214) emphasises that an effective curriculum can be attained by screening the objectives obtained from the three sources through the school's philosophy as well as through the available knowledge of psychology of learning. These procedures can result in specific instructional objectives. When objectives are well-defined, specific, and clear, making subsequent

decisions about what the curriculum should be and how to organise it becomes less chaotic and more rational.

Tyler (1949:46-47) as quoted in Deng and Luke (2008:74) further advises that objectives are supposed to be behavioural in nature, defining the kinds of behaviour to be developed, the applicable content and/or the area of life to which the behaviour is applicable. Educational objectives are central to the formation of the subject matter. On the other hand, subject matter content and related methods of teaching it serve to achieve some wider curriculum goal or aim (Marsh & Willis, 2003:73).

3.3.1.2 Select subject matter or learning experiences

According to Tyler (1949) in Deng and Luke (2008:74), subject matter consists of the body of facts, concepts, values, and techniques that are selected, organised, and sequenced in accordance with the set objectives. Subject matter also refers to the content written into the curriculum plan that is supposed to provide students with opportunities to realise the specified objectives (Marsh & Willis, 2003:75). An objective which specifies the development of reading skills for example, will require learners to engage in reading certain books or articles as learning experiences. Similarly, an objective which specifies the development of knowledge of garment quality is supposed to engage apprentices in learning about the physical and performance dimensions of garment quality. The curriculum should ensure that the selected subject matter is consistent with the set objectives (Booyse & Du Plessis, 2008:8; Hoadley & Jansen, 2012:245).

Planning of the subject matter in advance is advantageous in that it helps to regulate and safeguard learners and teachers against development of unhelpful and-or accessing a very minimal scope of knowledge (Hoadley & Jansen, 2012:59). Tyler (1949) as quoted in Marsh and Willis (2003:75) further points out that the selected learning experiences should afford students sufficient opportunity to experience and successfully complete the tasks required of them while at the same time address their aspirations and problems. Selection of learning experiences should also take the learners' previous experiences into account. This implies that experiences should

be selected in line with the knowledge about learning and human development (Ornstein & Hunkins, 2009:214). The curriculum helps to ensure that the learners are presented with opportunity to gain satisfaction from carrying out particular kinds of behaviour.

Marsh and Willis (2003:75) are of the view that Tyler's (1949) ideas on curriculum development process are very relevant in terms of outcomes-based approaches and the use of authentic assessment of tasks. It therefore, follows that if the selection of the learning experiences does not conform to these criteria then the outcomes may not fulfil the set objectives.

3.3.1.3 Organise learning experiences

Organisation of knowledge in a curriculum involves decisions regarding what knowledge and skills to select for the curriculum, as well as how the knowledge can be sequenced for effective instruction (Hoadley & Jansen, 2012:85). Effective organisation of learning activities is essential to efficient learning (Marsh & Willis, 2003:75; Booyse & Du Plessis, 2008:8; Hoadley & Jansen, 2012:245).

Organisation of learning activities involves deciding how the curriculum fits together, and/or how different subjects as well as different topics within a subject relate to each other (Hoadley & Jansen, 2012:85). Tyler (1949) asserts that a learning experience should be organised for precisely the same general reason that it was selected. This is because learning experiences provide the means of helping students to achieve previously specified objectives.

Marsh and Willis (2003:75) point out that learning activities should be sequenced in a way that current ones build upon earlier ones (vertical organisation). This helps to foster learners' understanding of the relationship between learning activities. Vertical organisation can be achieved through the criteria of continuity, sequence, and integration, which must be experienced by learners as these are not just mere tools to be used anyhow. Based on these criteria, the major concepts and skills to be taught are identified; introduced and reintroduced in successive teaching units.

However, to experience continuity of particular concepts, learners need to go into greater detail each time a concept is reintroduced within the sequenced curriculum. It is believed that integration of new details enable learners to increasingly attain deeper levels of understanding of the concepts. Similarly, for holistic understanding, learning activities should be integrated horizontally (ibid.).

Tyler (1949) argues that decisions regarding instructional methods and content should be reserved for people with technical expertise. It is often believed that technical experts cannot allow their own values to cloud objectivity of their work (Booyse & Du Plessis, 2008:8; Hoadley & Jansen, 2012:245).

3.3.1.4 Evaluate the effectiveness of the curriculum

Tyler (1949) further emphasises the importance of ensuring that learning experiences that have been developed and organised actually produce the desired results (Marsh & Willis, 2003:76; Booyse & Du Plessis, 2008:8). This can be verified through evaluation. Evaluation entails determining the degree of fit between the results specified in the objectives and the results actually achieved from learning the selected subject matter. Evaluation can take many forms, and does not have to be mainly summative, as the formative aspects which run throughout the course of learning are also important. Formative evaluation is one of Tyler's (1949) most important curricular innovations. Cronbach (1986) as quoted by Marsh and Willis (2003:76) credited Tyler (1949) for inventing formative evaluation techniques over half a century ago.

Evaluation involves getting evidence about changes in the students' behaviour. This is not limited to written tests, but encompasses other techniques such as observations, interviews, questionnaires, as well as samples of students' work. These techniques are today used formally and informally, even in non-goal driven evaluations. Tyler (1949) advises that instruments for evaluation should be appropriate and demonstrate the desired level of validity and reliability. The rationale therefore, provides a basic way of simplifying complex situations sufficiently. This enables plans and procedures to be carried out rationally, in ways that people

engaged in the process can understand and at least potentially reach some agreement (Marsh & Willis, 2003:77). Tyler's (1949) model, however, lacks the capacity to deal with the experienced curriculum component. This includes most of the characteristics of individual classrooms that teachers should take into account when making decisions about how to flexibly enact the planned curriculum with precision (ibid). In this regard, it becomes necessary for one to understand the curriculum as a process.

3.4 CURRICULUM AS A PROCESS

The concept of curriculum as a process constitutes the plan which outlines what is intended to be taught, what is actually taught, and what the learners learn and which can be proven to have been learned or not learned (Hoadley & Jansen, 2012:46). The curriculum as a process encompasses how teachers select what to teach, differences in how teachers teach as well as how learners learn. Although these activities often occur at different levels, they impact on what the learners learn. In this regard, distinctions between the intended, the enacted, and the assessed curriculum are helpful to individuals interested in understanding curriculum practice to think about the curriculum in a much broader sense. The intended, the enacted, and the assessed curriculum should be viewed as a cyclic process, with each of the components involving and informing each other in practice (ibid.).

3.4.1 The planned curriculum

An effective educational undertaking is often underpinned by a planned curriculum (Winberg *et al.*, 2011). Hoadley and Jansen (2012:29) view the planned/prescribed curriculum as one which encompasses what is planned to be taught to learners. The plan may present teachers and learners with the ideal course of action to follow; identify the content and the concepts to be learned, show how learning experiences are organised and sequenced, and provide ideas regarding how teaching and learning occur. In general, the planned curriculum answers the most important question that is often raised by teachers: 'What should we teach?' The planned

curriculum therefore focuses on decisions regarding the selection of the content to teach.

Marsh and Willis (2003:13) believe that conscious planning of the curriculum is possible and, indeed desirable. Similarly, Hoadley and Jansen (2012:29-30) concur that without a curriculum plan, it would be difficult for schools and teachers to provide effective learning. The following benefits are attributed to a planned curriculum. The curriculum:

- Identifies what content to teach;
- Establishes the order in which the concepts may be taught;
- Provides the general standard which regulates what should be learned;
- Presents a guide regarding essential knowledge to teach;
- Provides the minimum knowledge, skills and values that learners are required to learn; and
- Provides a statement of the knowledge, skills and values that the curriculum designers believe are important for individual learners and for society.

Hoadley and Jansen (2012:30-31) further argue that understanding the curriculum only as planned, while assuming that all teachers will teach what is prescribed in the plan, and accepting that all learners will learn what is intended, can be problematic and often limiting. This view alone may not enable one to understand or even explain why, for example:

- The planned/prescribed curriculum can be taught in different ways;
- Different things may be taught from the same plan by different teachers; and
- Different learners engaged in the same curricular activities, while being taught by the same teacher may learn different things.

Hoadley and Jansen (2012:31) argue that there is a significant difference between the planned/intended curriculum and what is actually taught and learned (enacted or curriculum-in-practice). Because of this, understanding the enacted curriculum is equally important.

3.4.2 The enacted curriculum or curriculum-in-practice

The enacted curriculum looks at how teachers practise and learners experience the curriculum (Hoadley & Jansen, 2012:32-37), therefore it provides a more complete view of teaching and learning processes. The importance of the enacted curriculum lies in its ability to aid curriculum analysts to explain why learners often learn very different things from what the teachers teach them. For example, it may help one to raise questions such as:

- Do teachers teach certain kinds of knowledge and values without knowing that they are doing this?
- What is this implicit 'curriculum' and how is it different from the explicit curriculum (planned)?

The enacted curriculum (curriculum-in-practice) emphasises the teacher's role as an interpreter of the curriculum and demonstrates how the teacher's actions, whether good and bad, thoughtful and thoughtless transform the curriculum plan in practice. The enacted curriculum, therefore, emphasises the centrality of instruction or teaching in consideration of any educational process. A number of factors are believed to cause differences in the way the planned curriculum can be enacted. For example, environmental constraints or contextual factors may influence the way the planned curriculum is enacted or experienced (Booyse & Du Plessis, 2008:4; Hoadley & Jansen, 2012:32-37). The following examples illustrate some of the environmental factors:

- The teacher's lack of awareness on how to teach the subject matter may cause a drift from the plan;
- The teacher's lack of knowledge of the subject matter may also cause failure to implement the curriculum as planned;
- The teacher's lack of preparedness towards the implementation of the curriculum may also cause deviation from the plan;
- The learners' prior experience of what is being taught may also influence the nature of the outcomes that they make from the enacted curriculum;
- The learners' interests in what is being taught may also cause them to perceive learning differently thereby ending up with different meanings; and

- Factors such as resource constraints (e.g. laboratories and libraries) and materials which support the learning process (e.g. access to text books) may also affect the way in which the planned curriculum can be implemented and even experienced in reality.

3.4.3 The assessed curriculum

Assessment is concerned with measurement of learning. The assessed curriculum is important in setting the standard. Assessment should align with the curriculum plan to ascertain the effectiveness of teaching and learning (Hoadley & Jansen, 2012:45).

3.4.4 Organising curriculum plans

Hoadley and Jansen (2012:85) assert that a curriculum plan outlines a course of learning. However, the plan should start and end somewhere. Furthermore, a good curriculum plan should make sense to teachers and at the same time provide guidance to teachers and learners by specifying learning pathways. Bernstein (1996) in (Hoadley & Jansen, 2012:90) holds that competence and performance curricula approaches provide helpful ideas for understanding and analysing curriculum with regard to the nature of knowledge.

3.4.4.1 Competence curriculum

A competence curriculum focuses on knowledge that learners already have, and this includes everyday knowledge and learners' own experiences (Hoadley & Jansen, 2012:90-91). This type of curriculum can be accessed anywhere including the work place and is not necessarily restricted to a classroom setting.

This type of curriculum is alternatively viewed as learner-centred, in that learners are charged with the responsibility of taking control of their learning as the teacher's role is often hidden, assuming the role of a guide or facilitator, and not that of transmitting the learning.

A competence curriculum often locates knowledge in themes, projects, and problems, rather than in subjects. The curriculum focuses on subjects and helps to organise knowledge in a particular pattern to serve as a basis for scaffolding. It also assists students to sequence knowledge in an increasingly difficult pattern, as a competence curriculum provides links between different knowledge in different curricula. Consequently, the outcomes of a competence curriculum are often expressed in different ways (ibid).

Hoadley and Jansen (2012:106) further point out that everyday knowledge is derived from random and unplanned learning, mainly through overheard conversations, often via media such as television or radio, from watching others, punishments or praise among much more. The knowledge tends to be unsystematic, often picked up in bits and pieces, is usually oral hence, difficult to hold onto and even repeat whenever needed. The knowledge is also practical and concrete, context-specific, often based on opinion, thus, personal and local. Moreover, the type of everyday knowledge that can be acquired depends on the source, i.e., family, community context and culture and therefore, is not generally applicable.

A focus on everyday knowledge cannot enable systematic understanding and/or solid conceptual development (Hoadley & Jansen, 2012:109). The danger of using everyday knowledge at the expense of conceptual development is that learners are unlikely to develop the ability to think with more advanced concepts, cannot order or understand their world differently, cannot learn increasingly complex knowledge and skills, and are often ill equipped to do specialised kinds of tasks or work. Furthermore, a curriculum that focuses on everyday knowledge can hardly enable learners to develop specialised forms of knowing.

Curriculum practices in TAs as discussed in Chapter 1 tend to bear similar characteristics with the competence curriculum. It is also apparent that certain aspects of knowledge of clothing product quality and processes are conceptual in nature (see Chapter 2). This implies that a competence curriculum, which focuses on everyday knowledge, may not foster development of conceptual related forms of knowledge. It is for this reason that this study sought to establish the aspects of

knowledge of clothing products and process skills that tailoring apprentices develop. This is essential and informative with regard to suitable curriculum models for intervention in skills training for TAs in tailoring.

3.4.4.2 Performance curriculum

A performance type of curriculum fosters development of high levels of understanding in particular subjects (Bernstein, 1996) as quoted in Hoadley and Jansen (2012:91-92). A performance type of curriculum is characterised by the following attributes. It:

- is very specific about what content to teach and in what order to present the knowledge to learners;
- focuses on school knowledge rather than on everyday knowledge and experience; and
- reveals a vertically organised corpus of knowledge to build understanding in a specific sequence. Vertical organisation of knowledge fosters achievement of greater complexity or depth of knowledge over time.

In this curriculum type, the teacher's role is overt and controls the defined learning process. The teacher takes more control of the selection, sequence and pace of learning process. A performance curriculum is therefore, content and teacher centred, with classroom setting being the most preferred learning context. Evaluation of the outcomes of this curriculum focuses on what is missing, to enable development of clearly defined behaviour and or understanding in learners. Similarly, teaching and assessment focus on refining the quality of learning by emphasising what needs to be enhanced.

This type of curriculum enables learners to be actively involved in learning externally derived knowledge, which relates directly to the behaviour intended to be developed. The curriculum therefore, defines the intended behavioural outcomes and activities aimed at attaining these behaviours in advance. An in-depth evaluation of knowledge of clothing products and processes from the literature sources shows that integration of a competence curriculum with a performance curriculum may help to develop, the

entire range of technical knowledge and skills, which tailoring apprentices require. However, differences in the nature of knowledge and skills suggest that the curricular practices can only be undertaken in different learning settings. This corresponds to what Haan (2006) and the ILO (2012) refer to as complementing TA with theoretical training outside the enterprise context (see 1.2.1.1).The literature from the current and previous chapter is used to compile the study's conceptual framework (**FIGURE 3.1**) as presented in the section that follows.

3.5 THE CONCEPTUAL FRAMEWORK OF THE STUDY

FIGURE 3.1 provides the study's conceptual framework. The framework presents dimensions of clothing product quality and processes as the knowledge content that tailoring apprentices are expected to learn. **FIGURE 2.1** in Chapter 2 provides a broader perspective of the knowledge content. Curriculum theory as discussed in the current chapter provides information on the selection of the knowledge content needed to develop the expected outcomes.

The grey rectangles represent the set curriculum objectives and the curriculum process. Green arrows (both single and double pointed) illustrate the influence of curriculum objectives on the curriculum process including the outcomes. The double pointed green arrows further denote the cyclic nature of the curriculum process and the influence of the components on each other. This implies that a weakness in one part of the process impacts on the entire process as well as on the outcomes.

Blue rectangles present the set of knowledge that translates into the desired outcomes (oval blue shape). Objectives are fundamental to the entire curriculum process in that they determine the body of knowledge that will translate into the expected outcomes and organisation of these into the knowledge content. Refer to the knowledge framework (**FIGURE 2.1**) in Chapter 2 for a detailed presentation of the knowledge content component of the conceptual framework.

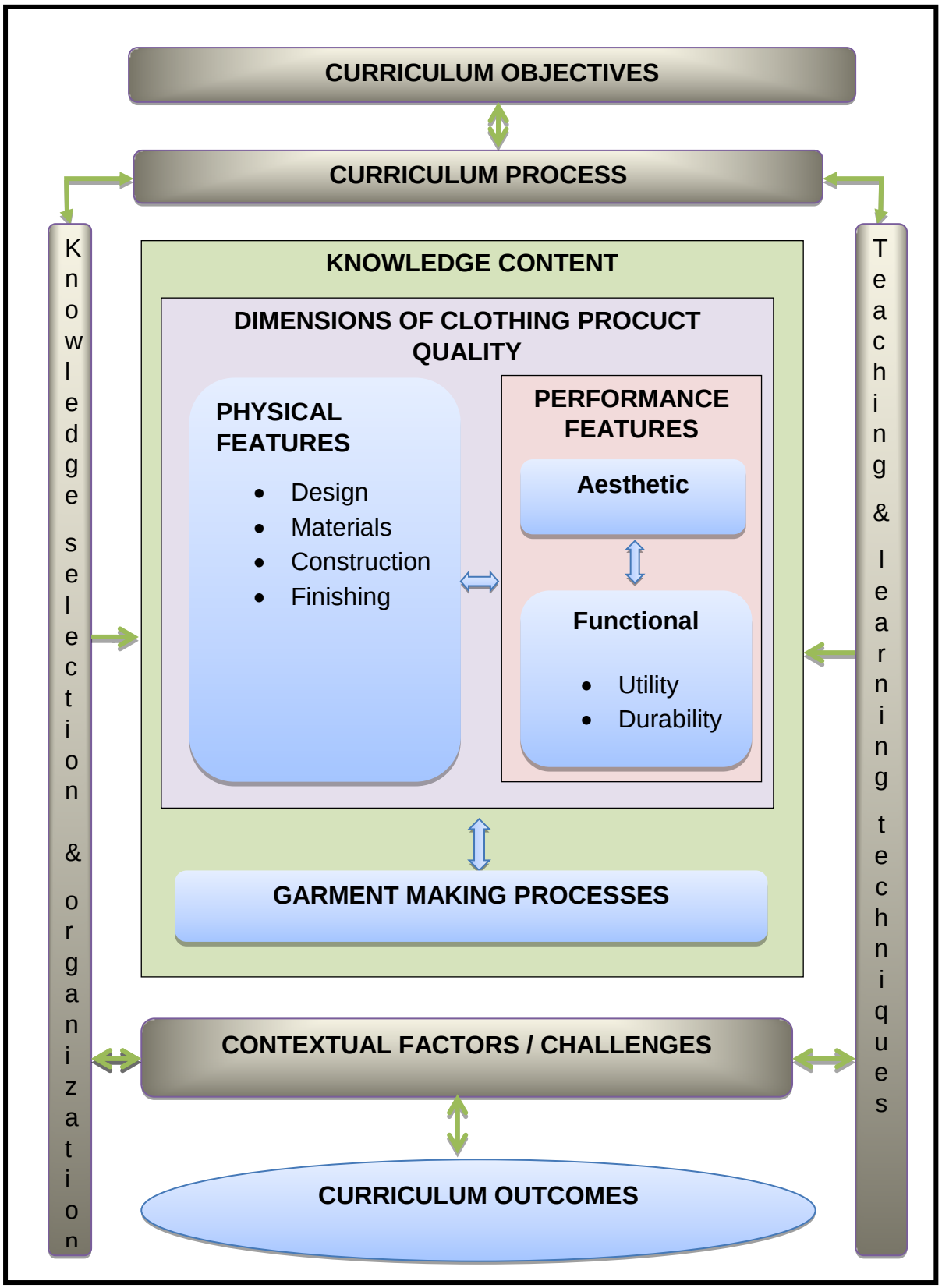

FIGURE 3.1: CONCEPTUAL FRAMEWORK OF THE STUDY (Source: own compilation)

The double pointed blue arrows show the relationship among the body of knowledge and suggest that the knowledge should be learned in an integrated manner for apprentices to make sense of the knowledge. The set objectives also determine the most suitable teaching and learning techniques for the established knowledge content.

A curriculum process is also influenced by contextual factors such as the learning setting and the nature of knowledge, teaching and learning that it can support, what the trainers know and can transfer to the learners, the aspects of knowledge the learners seek to acquire from the training as well as their educational background. These factors ultimately impact on the curriculum process and the outcomes. The double pointed green arrows on both ends illustrate the existing relationship.

The study assumes that the curriculum for TAs in tailoring is based on researched curriculum objectives. This may enable tailors and apprentices to identify and participate in the most critical aspects of knowledge as outlined in the conceptual framework. It is further assumed that TAs in tailoring in Kenya employs the most effective instructional and learning strategies which enable optimum development of the desired knowledge and skills. The study further assumes that contextual factors such as the tailors' knowledge of the subject matter as presented in the conceptual framework, knowledge of relevant techniques of teaching the identified and organised subject matter, the learners' prior experience of what is being taught, their interests in the knowledge to be taught as well as the availability of adequate and relevant learning resources may cause the curriculum to be enacted effectively to result in behavioural outcomes that meet the set objectives (Booyse & Du Plessis, 2008:4; Hoadley & Jansen, 2012:32-37).

The study applies this conceptual framework to explore, analyse, explain and describe the aspects of knowledge of clothing product quality and processes which TA in tailoring in Kenya enables apprentices to develop. The framework lays a basis for designing the curriculum model for intervention in the training based on empirical findings.

3.6 SUMMARY

Following the review of curriculum theory, it could be concluded that the development of adequate knowledge and skills should begin with a well-researched curriculum. The focal points: the nature of the subject matter, society and the individual should form the cornerstones for important curricular decisions. These should result in the most important knowledge that is highly relevant to learners, applicable to a broader societal context, highly adaptable to any emerging future challenges, yet remains viable overtime. Soliciting for learners', contemporary society's and subject specialist's perspectives is likely to provide more comprehensive curriculum objectives and a basis for effective curriculum with minimal bias if any (Tyler, 1949). This however, requires a professional researcher's input. Meeting these requirements can be a challenge within the context of TAs, given the informality.

The chapter also presents Tyler's (1949) model of curriculum development as a basis for designing a curriculum model. Steps involved in the curriculum development process are important in fulfilling the main goal of the current study. Curriculum theory further provides tools to explore what is taught, how it is identified, organised, taught and learned based on observation and interviews with tailors and apprentices within tailoring workshop as work and learning context. The theory also discusses how contextual factors influence the curriculum process. By putting these theories to use, it becomes possible for the researcher to understand and explain the outcomes. This is, therefore, helpful in answering the main research questions. The knowledge is also instrumental in understanding and explaining why tailoring and garment manufacturing MSEs in the IS perform poorly. The use of curriculum theory is instrumental in generating data needed to address the main aim of the study as described in Chapters 1 and 4.

The chapter finally combines the theoretical framework in Chapter 2 with curriculum theory into a conceptual framework (**FIGURE 3.1**) that guides the current study. The framework provides a basis for analysing knowledge of clothing products and processes. It also informs the design of a curriculum model to be used as a tool for

intervention in TAs in tailoring in Kenya. The next chapter (Chapter 4) presents the methodological processes followed in addressing the research questions and the overall aim of the study as described in the problem statement presented in Chapter 1.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

The previous chapter provides the curriculum perspectives which inform decisions regarding the selection of the subject matter to include in the curriculum content, the general procedure for curriculum analysis, and the curriculum development process. The chapter also presents and discusses the study's preliminary conceptual framework which was used to explore, analyse and explain the phenomenon.

This chapter discusses the methodological framework employed to explore curriculum practices in TAs in tailoring and the associated challenges. The discussion of the methodological framework encompasses the methodological approach, the underpinning philosophical assumptions and the paradigm within which these are based, research design, study setting, sampling techniques and the data collection methods, the data analysis procedures and interpretation of findings. Methodological choices were considered in terms of the complexities and challenges of the phenomenon under study. The background and purpose of the study also justified the methodological choices. The chapter concludes by discussing strategies which were employed to ensure rigor and ethical standards.

4.2 METHODOLOGICAL FRAMEWORK

"Good social science is problem driven and not methodology driven in the sense that it employs those methods that for a given problem, best help answer the research questions at hand" (Flyvbjerg, 2006:242).

The above quote was taken into consideration by the researcher when making decisions regarding the research methodology to drive the research process. Research methodology refers to the theory of acquiring knowledge and the activity of considering, reflecting upon and justifying the best methods (Wellington, Bathmaker, Hunt, McCulloch & Sikes, 2005:95) to apply in the process of knowledge acquisition. Punch (2005:29) views research methodology as the overall analysis of how the

research process proceeds. While in agreement with the advanced definitions, Silverman (2004:1) cautions that a research methodology should not be confused with research methods. This study assumed a qualitative research methodology as the general approach to knowing or gaining knowledge of the phenomenon under investigation. The methodological approach is discussed next.

4.2.1 Methodological approach

Denzin and Lincoln (2008:3-5) describe qualitative research as a situated activity that locates the researcher in the world. Qualitative research consists of a set of interpretative practices that make up the invisible world. The approach usually focuses on describing and understanding a phenomenon from its naturally occurring context (naturalistic context) rather than explaining it based on statistical analyses (Nieuwenhuis, 2012a:51). A qualitative research approach usually pays attention to words, meanings and interpretations that people construct from their settings, rather than on numerical or statistical quantities (Punch, 2005:58).

According to Merriam (2009:5), a qualitative research approach is better used when a study seeks to understand how people construct their worlds, what meaning they attach to their experiences and how they interpret their experiences. Creswell (2009:4) adds that qualitative research can be used to explore, illuminate and understand a phenomenon about which very little is known. A qualitative inquiry enables understanding of phenomena from the point of view of the people involved (emic or insider perspective) (Babbie & Mouton, 2001:270-1; Willig, 2008:9). The research approach is therefore, advantageous in providing the researcher with an insight to understand the meanings people attach to various social phenomena. Denzin and Lincoln (2003:13) further assert that the choice of qualitative approach is grounded in the nature of the enquiry. This is because the research deals largely with entities, processes and meanings that cannot be measured in terms of quantity, amount, intensity or frequency.

The decision to use qualitative research was necessitated by the dearth of knowledge of curriculum practices in TAs in tailoring within the Kenyan context.

Information on the aspects of knowledge of clothing products and processes that TAs in tailoring in Kenya develop was not clear, yet from the literature in Chapter 2, it is apparent that the knowledge is rather complex and can be best explored based on a situated approach which allows for verification. Moreover, the teaching and learning techniques within TAs are generally experiential and practical in nature (see 1.2.1), and separating work from teaching and learning tends to be obscure. A qualitative approach is thus relevant in this regard (Creswell, 2009).

Qualitative research is suitable in understanding complex social processes as it helps to capture essential facets of the phenomenon from the participants' perspective (Denzin & Lincoln, 2008:21). A curriculum process is a complex phenomenon that can best be understood if the researcher gets closer to the participants, to observe what takes place, share the participants' views regarding the experiences involved and to establish how the setting impacts on knowledge construction process. Tapping into the participants' subjective views was beyond objective approaches, hence the subjective approach.

Tyler (1949), a renowned curriculum scholar, for example, advocates for the use of observation and interview techniques when evaluating curriculum outcomes since these methods go beyond written tests to expose other factors impacting on the curriculum that may otherwise remain hidden. Likewise, Montero-Sieburth (1992:177) argues that a qualitative approach has the advantage of going beyond the curriculum itself to investigate the influence of contextual factors on the outcomes. Lave (1977, 1982) as well as Shiahota and Pryor (2008) used a qualitative approach to study how tailors and their apprentices in Liberia and Senegal acquired arithmetic and literacy skills respectively by engaging in tailoring activities within the context of TAs in tailoring.

It was important for the researcher in the current study to understand the phenomenon from the participants' own point of view. The use of qualitative methodologies helped to generate data in the form of the participants' own words and observation data which were validated by the participants and contextual factors for in-depth understanding and description of the phenomenon. The varied aspects

of information were further interpreted to obtain varied meanings which the participants attached to their views and experiences. These enabled comprehensive understanding and led the researcher to even explain the phenomenon where necessary. This is in line with Miles and Huberman's (1994:91) argument that, "there are clues to explanation in a full description, and it is hard to explain something satisfactorily without first understanding what it is." The qualitative approach made it possible for the researcher to uncover facets of the phenomenon that would probably remain invisible had the approach not been put to use.

Lodico, Spauling and Voegtle (2006:311) conclude by summing up the advantage of qualitative research by asserting that "one of the major advantages of qualitative method lies in its ability to look into the context, processes, and interactions and precise measurement of attitudes, and outcomes." The study employed participant observation and semi-structured interviews to collect qualitative data. Application of these techniques enabled in-depth understanding of the research problem and, eventually, to achieve clarity regarding the research results.

Qualitative research portrays reality as a social construction; accepts that the researcher cannot be separated from the research; and that research findings are created rather than discovered. 'Truth' is not an objective phenomenon that exists independently of the researcher, but can be constructed based on participants' perspectives, experiences, and the context (Nieuwenhuis, 2012a:54). Creswell (2007:16) and Willig (2008:2) emphasise that the decision to undertake a qualitative study needs to be defended philosophically. Based on this requirement, the philosophical assumptions that guided the selection of a qualitative approach are presented.

4.3 PHILOSOPHICAL ASSUMPTIONS

Creswell (2007:15) emphasises that philosophical assumptions made by the researcher when contemplating a qualitative study practically impact on the design and conduct of the research process. The researcher's ontological (nature of the social reality) and epistemological (how and what is known) assumptions are

particularly critical in this regard (Creswell, 2007:16; Willig, 2008:2, 12). The ways in which these assumptions impacted on this study are discussed next.

4.3.1 Ontological assumptions

Ontological assumptions are concerned with claims about the nature of the social reality, what exists and what it looks like (Creswell, 2007:18; Willig, 2008:13). This study leaned on the subjective dimension of social reality. From this perspective, social reality is a product of individual cognition, it is socially constructed (an individual constructs a subjective world of living). The perspective therefore, embraces existence of multiple realities. This implies that multiple quotes based on actual words of different individuals and different dimensions of a phenomenon can provide evidence of its multiple realities (ibid.).

Following the subjective view of the social reality, the researcher in the current study assumed that tailors (trainers) and their apprentices, both within and across the sub-cases, would have varied perspectives about curricular practices in TAs in tailoring as well as challenges associated with knowledge construction. For example, cutting, sewing and finishing skills were learned across all cases, yet the tailors' views regarding other aspects of knowledge that should be taught and learned differed depending on their level of education, experiences, and training background. Likewise, the apprentices' education level tended to also influence their view of the aspects of knowledge and skills needed for skilful performance in the economic sub-sector. The participants' varied perspectives and experiences of the phenomenon constituted the knowledge that led to its in-depth description and understanding.

In order to capture the varied dimensions of the phenomenon needed to foster understanding, the researcher had to adapt data gathering techniques which could enable access to the participants' subjective and multiple perspectives of the lived realities. It was also important to adapt techniques which could illustrate how contextual factors influenced the participants' worldviews of the phenomenon.

4.3.2 Epistemological assumptions

Epistemology is a branch of philosophy that is concerned with the theory of knowledge (Willig, 2008:2). This encompasses how one gets to know or the method of knowing. It is often assumed that there is a relationship between the knower and the known (Nieuwenhuis, 2012a:55), and this is important in addressing the question, 'What can we know and is that knowledge reliable'? The nature of knowledge, its scope, validity, and reliability of the claims about knowledge and the possible ways of gaining knowledge of social reality, as well as the knowledge gathering process are of critical concerns (Willig, 2008:13). Guba and Lincoln (1988:94) in Creswell (2007:18) report epistemological assumptions regarding the nature of knowledge within the qualitative research perspective as follows:

- All knowledge is subjective and self-validated; and
- Relationship between the researcher and the object of study is important. It is mutually influencing with the researcher getting as close as possible to the participants being studied (within their activity settings).

Following the ontological and epistemological assumptions, the discussion of the paradigm which encompassed these assumptions is presented in the section that follows.

4.3.2.1 Social constructivism as a paradigm

A paradigm is "a set of assumptions and/or beliefs about fundamental aspects of reality, which gives rise to a particular world-view" (Nieuwenhuis, 2012a:47). There are at least three competing paradigms in social science: positivism, constructivism, and critical theory. The view that qualitative research leans towards a constructivist paradigm (Guba & Lincoln, 1990 in Patton, 2002) was adapted for this study to accommodate interpretivism. Constructivism is a term used interchangeably with interpretivism (Merriam & Tisdell, 2015:9).

Social constructivism operates on the premise that human worlds differ from the natural physical world, and therefore must be studied differently (Guba & Lincoln, 1990:148 in Patton, 2002:96). Patton (2002:96) argues that human beings have evolved the capacity to interpret and construct reality. The world of human

perception is not real in an absolute sense, but is 'made up' and shaped by cultural and linguistic constructs. This belief finds strength in Thomas's theorem: "What is defined or perceived by people as real is real in its consequences" (Thomas & Thomas, 1928:572 in Patton, 2002:9). Constructivists therefore study multiple realities constructed by people and the implications of those constructions for their lives and interactions with others.

Shadish (1995:67) in Patton (2002:96) asserts that "What is constructed is knowledge about the reality, and not the reality itself." Constructivists are of the opinion that there is no singular, stable, and fully knowable external reality. Instead, all human understandings are contextually embedded, interpersonally forged, and necessarily limited (Neimeyer, 1993:1-2 in Patton, 2002:96). Any notion of 'truth' is a matter of consensus among informed and sophisticated constructors and has no correspondence with an objective world. A constructivist approach to reality is therefore incompatible with objective measures of variables or propositions (Guba & Lincoln: 1989:44 in Patton, 2002:96; Willig, 2008:8).

Social constructivism is built on the thesis of ontological relativity (Patton, 2002:97), which holds that all tenable statements about existence depend on a worldview, and no worldview is uniquely determined by empirical or sensed data about the world. Hence, two people living in the same empirical world cannot experience it in the same manner. In respect to this, Crotty (1998:54-5 in Patton) argues, "It is not our thoughts that are constructed for us. We have to reckon with the social construction of emotions. Since constructionism embraces the whole gamut of meaningful reality, all reality, is meaningful reality, is socially constructed and there is no exception."

With reference to this study, one aligned to the constructivist perspective would expect different stakeholders of TAs in tailoring (tailors and their apprentices) to have different expectations, perceptions, and experiences of curriculum practices as well as associated challenges. All data emanating from these sources deserve equal attention since they are experienced as real. This is in line with proposals by Lincoln and Guba (1989:50) in Patton (2002:97) that "the claims, concerns, and issues of

stakeholders serve as organisational foci (the basis for determining what information is needed)."

With this worldview in mind, the researcher went to the field with the belief that varied participant groups (tailors and apprentices), would have varied expectations and actual lived experiences of curriculum practices in TAs in tailoring, which would influence their perceptions differently. Incorporating all these views would help the researcher to have a rich database needed to interpret, understand and provide a comprehensive description of the phenomenon under investigation. The advanced paradigmatic assumptions employed in this study are consistent with the selected methodological approach which has the capacity to capture the participants' varied perspectives and experiences of the phenomenon, without imposing any limits. The researcher further sought a research design in accordance with the paradigmatic and philosophical assumptions to guide the research process in achieving the desired ends of the study.

4.4 RESEARCH DESIGN

Research design is the plan of action taken to conduct research, and it involves the intersection of philosophy, strategies of inquiry and specific methods (Creswell, 2009:50). Nieuwenhuis (2012b:70) refers to research design as a plan or strategy which moves one from the researcher's underlying philosophical assumptions to specifying the selection of respondents and the data gathering and analysis techniques to be used. Punch (2009:112-3) emphasises that a research design should point out what strategy, what framework, which participants and which data collection methods to use in the research process. A research strategy in this case is the rationale by which the study intends to proceed in order to answer the research questions. Research design (Denzin & Lincoln, 1994:4) situates the researcher in the empirical world, and connects the research questions to the data. The aim of providing a research design is to ensure that the data obtained are unambiguous in answering the research questions. Being a crucial stage in the research process, the choice of a research design should be carefully evaluated and defended in order to

realise the research goal. A case study research design was selected as the most suitable strategy for inquiry into the research study.

4.4.1 The process of selecting case study research design

There are two popular qualitative case study approaches. Stake (1995), Yin (2003) and Merriam (2009) support their choice of approach to a case study in the social constructivist paradigm. A social constructivist or an interpretive approach to a qualitative case study research supports a transactional method of inquiry, which requires the researcher to have a personal interaction with the case. The case is developed in a relationship between the researcher and the informants, and presented to engage the reader, inviting them to join in this interaction and in case discovery (Stake, 1995).

Yin (2009:18) describes a case study as, ‘‘an empirical inquiry that investigates a contemporary phenomenon in depth within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident”. Punch (2009:119) further observes that case studies are designed with the goal of ‘‘understanding a phenomenon in-depth in its natural setting while recognising its complexity.” A case study is also preferred when a study aims at providing an in-depth description and analysis of a bounded system (Merriam, 2009:43). A case study is further believed to be useful in the study of human behaviour as it helps one to understand specific experiences of the phenomenon in which people engage (Stake, 2008).

The choice of a case study research design was based on the fact that curriculum is often influenced by varied contextual factors which cannot be understood in isolation from the context (Booyse & Du Plessis, 2008). Likewise, the need to explore curriculum practices for TAs in tailoring within the contemporary Kenyan context in-depth influenced the choice of case study design. Specifically, the study sought to explore the aspects of knowledge of clothing products and processes which the apprentices develop. The study also sought to identify factors which influence knowledge development process for in-depth understanding and provision of

detailed description. Understanding the phenomenon required a strategy that would situate the researcher in the natural setting where the phenomenon occurs to learn how varied factors interact to bring about knowledge and skills construction. Being an explorative and descriptive study, the demands for contextualisation, discovery and validation further necessitated the choice of case study research design. The researcher justifies how these factors influenced the choice of case study research design next.

4.4.1.1 The unit of analysis

Babbie and Mouton (2001:84), describe the unit of analysis as an object, a phenomenon, an entity, a process, or an event that is being investigated. Merriam (2009:41-2) states that the unit of analysis is what determines whether a study is a case study, and is the aspect which makes case studies unique. Rule and John (2009:17) equally emphasise that the unit of analysis forms the central focus around which research questions are developed. The unit of analysis in the current study was the curriculum practices for TAs in tailoring in Kenya. Investigation of curriculum practices for TAs in tailoring encompassed the following:

- The aspects of knowledge of clothing products and processes which tailoring apprenticeships develop towards their trade;
- The sources of knowledge, including the process of identification and organization to enable learning to occur;
- Teaching and learning techniques which tailors and their apprentices engage in to develop the necessary knowledge and skills; and
- General challenges which impact on the process of knowledge and skills development.

The outlined factors constitute the ‘what’, ‘how’ and ‘why’ of the phenomenon which were explored through case study research design (Merriam, 2009:45; Yin, 2009; Nieuwenhuis, 2012b:75). A closer look at the outlined factors shows that they are interrelated and all are necessary in understanding and describing the phenomenon. The researcher expected to study them as they occur naturally without attempting to manipulate any of them to enable a holistic understanding. It is for this reason that

Yin (2009:13) suggests that a case study is preferred when the researcher has no control over a contemporary set of events under investigation.

The unit of analysis as stated above guided the framing of the major research question, the sub-research questions, the field questions as well as the choice of research methods (data collection techniques) employed to generate the data needed to answer the major research question and fulfil the main aim of the study.

4.4.1.2 Demands for contextualisation

Nieuwenhuis (2012b:76) affirms that case study research is chosen when the study is aimed at gaining greater insight and understanding of the dynamics of a specific situation. Yin (2003) and Baxter and Jack (2005:544) view case study research design as a holistic approach that aims at preserving and understanding the wholeness and unity of the case through contextualisation. Miles and Huberman (1994:4) and Willig (2008:74) emphasise the contextual approach as an important feature of case study. Correspondingly, Babbie and Mouton (2001:282) argue that the unit of analysis in case study research is rarely isolated from and unaffected by factors in the environment in which it is embedded thereby placing emphasis on the need for contextualisation.

A case study was chosen because the case/unit of analysis (curriculum practices for TA in tailoring) could not be successfully explored outside the context (the tailoring workshop as the natural setting where teaching and learning occurs). It was in these settings that learning activities leading to the development of knowledge and skills of clothing products and processes could be identified based on the on-going tailoring activities. Being in the setting enabled the researcher to observe the nature of activities and how the knowledge and skills relating to the same were identified and developed. In addition, the use of case study research design enabled the researcher to observe, listen and document how contextual factors such as workshop size, the quantity and type of equipment, fabric type and quality, other materials and sewing notions used, the nature of activities which tailors and apprentices engaged in, types of garments made, relationship between tailoring

activities and learning, teaching/guidance quality and or learning practices, apprentices' numbers, apprentice/apprentice and tailor/apprentice interaction, the participants' interests, views and perceptions, among other factors influenced the outcomes of engagement in this kind of learning. The general market setting presented the researcher with the opportunity to relate enterprise specific activities to the prevailing fashion trends. It was evident that customers wanted to dress in the global fashion trends which influenced what tailors strived to reproduce in locally available fabrics.

Description of the phenomenon in terms of categories revolved around the outlined contextual factors which acted as important ingredients of the story. It would have been impossible for the researcher to have a clear picture of curriculum practices for Kenya's TAs in tailoring without considering the context within which it occurred. It is most probable that without the situated strategy, the researcher would not have triangulated the varied aspects of the data (varied participants' reported perspectives and the observed contextual aspects), yet all these were necessary for in-depth understanding and description of the phenomenon. A case study research design was instrumental in generating multiple forms of data from multiple sources, mainly varied participants (trainers and apprentices) from varied sub-cases based on varied data collection methods (interviews, informal conversations and consultations with participants for clarity, and observations).

Fulfilment of the above is in line with one of the principle requirements of a case study, the need to view the phenomenon from multiple perspectives (Miles & Huberman, 1994:438; Strauss & Corbin, 1998:11; Babbie & Mouton, 2001:275; Baxter & Jack, 2005:556; Stake, 2008:133). Silverman (1993) and Flick (1998) for instance, argue that since no observations or interpretations are perfectly repeatable, triangulation of strategies could serve to clarify meaning by identifying different ways in which the case can be seen. In this study, triangulation of contextual factors together with the participants' reported perspectives, as well as the researcher's observations not only illuminated the researcher's understanding of the phenomenon, but also manifested how some of the embedded factors encroached on the quality of knowledge of clothing products and processes developed by

apprentices and on their future work aspirations. Furthermore, the triangulation which resulted from the use of case study strategy proved invaluable in checking the validity and reliability of data pertaining to the phenomenon (Babbie & Mouton, 2001:282). Contextualisation was furthermore, instrumental in compiling a comprehensive report regarding curriculum practices to enable the researcher to generate data that could answer the overarching aim of the study namely, the development of a curriculum model for intervention in training of tailoring apprentices in Kenya.

4.4.1.3 Fulfilment of the study purpose through discovery and validation

Denscombe (2008:38) asserts that case study research design can be relevant to studies which entail both discovery and validation. Elements of discovery and validation were inherent in the overall aim of the study: to develop a curriculum model as an intervention in skills training. An in-depth exploration of the phenomenon was necessary in discovering what the tailors taught apprentices, how apprentices learned and the aspects of knowledge and skills which apprentices acquired or did not acquire. The empirically grounded findings were important in forming the basis for the development of the curriculum model. Miles and Huberman (1994:17-18) and Babbie and Mouton (2001:282) suggest that a rudimentary conceptual framework can be used in exploration of an understudied phenomenon, to enable its refinement as the study evolves. With the aid of the reviewed literature and the researcher's knowledge of the field of fashion design and product development as well as of clothing product quality, a preliminary conceptual framework was constructed to guide the exploration of data regarding curriculum components. Knowledge of curriculum theory was also helpful in putting the preliminary conceptual framework together (see **FIGURES 2.1** and **3.1**). De Vos, Strydom, Fouche & Delport (2011:35) view a conceptual framework as a mental configuration of the phenomenon to be investigated.

With the aid of case study design, multiple forms of data were generated to refine and validate the conceptual framework in accordance with advice by Miles and Hubermans (1984:28, 1994:17-18), Babbie and Mouton (2001:282) and De Vos *et*

al. (2011:35). Because case study research design is accommodating of emerging forms of knowledge (Simmons, 2009:33), it proved relevant in realising the main purpose of the study which was beyond theoretical conceptualisation. This is because, the empirical work provided insights into how the preliminary conceptual framework could be restructured into a curriculum model, to be proposed as an intervention that complements TAs in tailoring, and not to be used within the context of TA in tailoring as initially assumed.

4.5 THE TYPE OF CASE STUDY DESIGN AND SELECTION OF THE CASE

According to Stake (1995, 1998, 2008:119) and Baxter and Jack (2008:547), the choice of the type of case study design to employ in the research process should be guided by the overall purpose of the study. For example, a study which seeks to gain insight into a least understood issue is best explored based on an instrumental case study. The case is selected to advance understanding of the object of interest. The case is usually of secondary interest, but plays a supportive role, mainly to facilitate understanding of something else. It is therefore looked at in-depth, its contexts scrutinised and its ordinary activities detailed, but with the aim of fulfilling an external interest (Stake, 2008:123).

Curricular practices in TAs in tailoring in Kenya are least understood, yet TAs play an instrumental role in skills development within tailoring and garment making economic sub-sector. The researcher therefore, employed an instrumental case study design with embedded sub-units, to explore and understand the phenomenon in-depth, and provide its detailed description. Yin (2003) and Baxter and Jack (2008:550) acknowledge the use of sub-units embedded within a larger case as a powerful way to learn, particularly by analysing the data within the sub-units separately (within case analysis), between the different sub-units (between case analysis), or across all of the sub-units. Engaging in such rich analysis serves to better illuminate the case.

Willig (2008:74) correspondingly points out that case study research requires the researcher to produce an accurate and comprehensive description of the characteristics of the case, within the study's terms of reference, in order to generate

new insights into the phenomenon under investigation. Opportunity to compare a number of cases with one another may lead to a more general understanding of a phenomenon. In heeding the advice, the study made use of a single case with embedded sub-units drawn from multiple sites. These offered ample opportunities to explore the same observation schedule and research questions repeatedly across multiple sub-units and settings to generate comprehensive and triangulated data for in-depth understanding.

Willig (2008:79) argues that selection of the case should be based on its ability to provide an enhanced understanding of the object of the study. Correspondingly, Stake (2008:119) and Punch (2009) emphasise that cases are defined by interest in an individual case, the concern being "what" can be learned about a 'single case'. In other words, the quality of knowledge which a specific case can provide is what makes it suitable for learning. Stake (2008:120) further adds that optimising understanding of the case requires meticulous attention to its activities. With specific reference to instrumental case study design, Hamel, Dufour and Fortin (1993:43) assert that selection of cases should be on the basis of it being exemplary of a more general phenomenon.

Various tailoring and garment manufacturing MSEs in the IS provide TAs in tailoring. These include custom-tailoring MSEs which offer exclusively men's or women's wear, those offering a mixture of men and women's wear; mini garment manufacturing MSEs engaged in production of ready-to-wear garments for whole sale, or specific orders of the same for retailer customers and or production for own ready-to-wear clothing for retail (Buckley, 1997, 1998; McCormick *et al.,* 1997). This study relies on TAs in custom-tailoring in women's wear as the instrumental case.

Custom-tailoring in women's wear is particularly more demanding in terms of knowledge and skills than the general tailoring and garment manufacturing. In custom-tailoring in women's wear, garment types, designs/styles, materials/fabrics, construction, finishing, customers' body shapes and sizes, and clothing needs such as fit preferences often vary with each order (Chase & Quinn, 2003; Tate, 2004; Brown & Rice, 2014). This places a high demand for knowledge of materials and

principles underpinning all processes involved in the delivery of quality clothing products, to accentuate and flatter customers' figures and gain their satisfaction (ibid.). Custom-tailoring in women's wear thus presented the researcher with the ideal opportunity to gain understanding of the aspects of knowledge and skills which apprentices intending to work in tailoring and garment manufacturing MSEs in general learn, how the knowledge is selected and presented to apprentices, and any associated challenges. This made it possible for the researcher to bring to light a broader perspective of the curricular practises involved including the outcomes. TAs in custom-tailoring in women's wear was an exemplar of the phenomenon under investigation (Hamel *et al*., 1993). The case of TAs in custom-tailoring in women's wear was therefore, purposefully selected for its potential to provide opportunity for a more in-depth learning compared to other cases in the global population (Stake, 2008; Merriam, 2009).

Rubin and Babbie (2007:167) describe purposive sampling as selection of cases or units with the best attributes for the study based on the researcher's judgement. A non-probability sampling technique is preferred in qualitative methodology since it does not strive for statistical generalization (Stake, 2008:129; Merriam, 2009:77; Yin, 2011:105). The same sampling technique was used to select the embedded sub-units making up the case.

4.5.1 Selection of sub-units making up the instrumental case study

The sub-units which participated in the study were drawn from three city council markets situated closer to the Central Business District (CBD) of Nairobi. Each of the sub-units comprising the case was engaged in production of women's custom-made clothing and related products as the core business alongside a TA. A total of four sub-units, with each having a custom-tailor as the trainer and a number of apprentices were selected to participate in the study. The description of sampling processes employed in the study is as follows.

Custom-tailoring enterprises offering a TA were not formally registered as training providers across the markets. It is because of the lack of formal registration of the

skills training component of the tailoring enterprises that TAs are referred to as informal training. The lack of formal documents indicating the number of tailoring enterprises which provide TAs, caused the researcher to identify the sub-units making up the case study, through transect walks across the markets. This occurrence influenced the choice of sampling techniques used to a certain extent.

Sub-units 1 and 2 were conveniently selected as they were the only enterprises providing TAs within the first two markets from where they were drawn. Convenience sampling occurs on the basis of availability and/or accessibility (Maree & Pietersen, 2012:177; Welman, Kruger & Mitchell, 2012:69-70). Marshall (1996:523), however, points out that convenience sampling can result in poor data and is often associated with a lack of intellectual credibility. Although the cases were conveniently selected, the researcher relied on the set criteria (see **TABLE 4.1**) to evaluate their potential for intellectual credibility.

It happened that sub-unit 1 fulfilled all the requirements set for inclusion. However, sub-unit 2 had only two apprentices when the set criteria required each sub-unit to have at least five apprentices. While this initially seemed to be a gross violation, it turned out to be very instrumental to the study as it was unique in many ways. The varied ways in which sub-unit 2 contributed to the study are reported in the findings (see Chapter 5). The same criteria were applied in purposeful selection of sub-units 3 and 4.

The third market had a pool of apprenticing custom-tailoring enterprises. This necessitated the use of purposive sampling techniques to select sub-units 3 and 4. In comparison to others within the same market, sub-units 3 and 4 seemed to be more ‘information-rich’ (Patton, 2002:230) and could therefore foster optimum learning (Merriam, 2009:77). A purposive sampling strategy is purpose driven, done with a specific purpose in mind (Stake, 2008:129; Maree & Pietersen, 2012:178). Common assumptions when using purposive sampling techniques are that the study seeks to discover, understand or gain insight of a phenomenon and therefore only those units with the potential for the most learning should be selected (Merriam,

2009:77). Patton (2002:230) supports the notion that selection of information-rich cases for in-depth study is what counts highly when using purposive techniques.

Denscombe (2008:40) and Merriam (2009:77) advise that sample selection should be based on a list comprising of attributes that are essential to the study, which make a particular unit suitable for study. A list of important attributes was compiled according to the criteria that guided the selection of sub-units which formed the case. Babbie and Mouton (2001) argue that a self-drawn inclusion criteria can be subjective and biased. However, considering the aims of the study and requirements of case study strategy in general, the issue of subjectivity did not seem to be a major threat in this particular study. **TABLE 4.1** shows the attributes compiled according to the selection criteria for the sub-units that made the case.

TABLE 4.1: GENERAL CRITERIA FOR SELECTION OF CASES

Enterprise attributes	Trainer attributes	Apprentice attributes
Operates within city council markets located within or closer to the CBD	Self-employed custom-tailor/trainer	A minimum of three months of TA experience
Provides women's custom-made clothing among other garment types	Formally trained or apprenticed	
Provides TA training services	Education level/literacy	
At least five years of experience in TA training practice	Gender balance where possible	

(Source: own compilation)

Selection of enterprises that had tailors and apprentices with extensive experience of TAs was important in accessing rich information. The literature in Chapter 2 focused on women's wear, therefore focusing on tailoring enterprises with the same activities would make exploration, analysis and validation of data to be consistent with the theory.

Selection of custom-tailors who engaged in both tailoring and TAs was important towards understanding how both activities were coordinated and how the two

influenced the quality of learning and the outcomes. This would also help to establish how knowledge was identified, organised and presented to apprentices to foster learning.

It was also important to understand how the tailors' education/literacy level and training background influence knowledge organisation, teaching/learning practices in addition to informing about the actual aspects of knowledge which were developed. This further helped to illuminate the category of participants who attend TAs and the type of curriculum that suits their needs. These factors were also important in shaping their perceptions of curriculum practices in TAs. See **ADDENDUM 2A** for the short questionnaire that was used to capture biographical data for tailors. The data captured through the short questionnaire helped to ascertain the suitability of the selected sub-units to the study.

Engaging both groups of participants (custom-tailors and apprentices) was important in gaining access to the varied perspectives of their lived experiences of the phenomenon as opposed to involving one group. Moreover, inclusion of apprentices in the study enabled them to raise certain concerns about the phenomenon which appeared to be very important to the study. It was evident from the study that some of these concerns could not be reported by custom-tailors. The apprentices' views therefore opened a new way of thinking regarding how to address certain curriculum concerns through the proposed curriculum model. Nieuwenhuis (2012b:75) views this as an opportunity to give voice to the powerless. It has been argued that the curriculum is political and value laden and often stands to benefit those who are powerful and economically advantaged (Ornstein & Hunkins, 2009) as opposed to promoting the needs of the poor and powerless. Inclusion of both groups was important in confirming this view by establishing the group which benefitted the most. Furthermore, inclusion of both groups enabled the researcher to establish the category of apprentices (educational and training backgrounds) who engage in TAs in tailoring, thereby understanding its value to individuals, society, the industry and country. See **ADDENDUM 2B** for the questionnaire that was used to capture biographical data for the apprentices.

Unlike quantitative studies that make use of large samples, qualitative studies generally require much smaller samples (Mason, 2010). Frequencies are rarely important in qualitative research, instead, one occurrence of the data is potentially as useful as many in understanding the process behind a topic (Ritchie, Lewis & Elam, 2003). Thus, one occurrence of a piece of data, or a code, is all that is necessary to ensure that it becomes part of the analysis framework. Moreover, qualitative research is highly labour intensive, thus analysing data from a large sample may not only be time consuming but also impractical (Mason, 2010).

Qualitative research makes use of the concept of saturation as the guiding principle regarding decisions of the sample size (Mason, 2010). Richards (2009:19) defines data saturation as the point when the data needed to answer the research question and all subsequent pertinent questions arising from the data appears to have been fully obtained. It is crucial for a qualitative researcher to think of data in terms of richness and thickness (Dibley, 2011) rather than the size of the sample (Burmeister, & Aitken, 2012). Data saturation is not about numbers *per se*, but about the depth of the data (ibid.). For example, one should choose the sample size that grants the researcher the best opportunity to reach data saturation. A large sample size does not necessarily guarantee that one will reach data saturation, nor does a small sample size—rather, it is what constitutes the sample size (Burmeister & Aitken, 2012). If one has reached the point of no new data, one has also most likely reached the point of no new themes; therefore, one has reached data saturation (O'Reilly & Parker, 2012).

In this study, the decision to stop further sampling after the fourth sub-unit was arrived at upon realising that the data generated from the sub-units making up the case tended to be a repetition of what had been previously reported and/or observed. Denzin (2009) acknowledges the vital role that use of multiple data collection methods (triangulation) plays in the achievement of data saturation. This is because no single method, theory, or observer can capture all that is relevant or important. Intense listening to the audio taped conversations and repeated reading of observation data suggested that the data could adequately answer the research question and achieve the aim/purpose of the study. This meant that data saturation

had been attained (Babbie & Mouton, 2001:288; Kumar, 2011:213; Nieuwenhuis, 2012b:79-80). In heeding Richards' (2009:19) advice, the researcher narrowed down to four sub-units of the case only when the data needed to answer the research question and all subsequent pertinent questions arising from the data appeared to have been fully obtained. The small sample size of four sub-units was further justified by the principle of case study research design, which mainly advocates for theoretical and not statistical generalisation (Flyvbjerg, 2006).

A total of four tailors (trainers), one from each sub-unit and twenty seven apprentices all spread across the sub-units (see **TABLES 5.1 - 5.4**) interacted with the researcher within their respective settings (Kenyatta, Uhuru – Eastlands stalls and Kariobangi markets) to generate the study's valuable conversational and observable data. Of the twenty seven apprentices, eighteen participated in the semi-structured interviews and of these only fourteen were transcribed due to early oversaturation of the data. Cohen, Manion and Morrison (2011) emphasise that the number of participants in a sample be related to saturation (enough data to provide complete description of the unit of analysis). The study settings where the cases were drawn are discussed next.

4.5.2 The study setting

Neuman (2000:352) maintains that the choice of a research setting should be guided by the potential "richness of the data, unfamiliarity and-or suitability." Richer and more interesting data is more likely to be found in settings where there is a network of social relations and various activities. Schurink (1998:254) gives similar advice by stating that selection of a study setting takes cognisance of the availability of "the processes to be studied". A suitable research setting also includes the ease of physical access as well as other practical and logistical issues such as travel distance, the researcher's available time, skills, personal characteristics and feelings (Hammersly & Atkinson, 1995:54; Strydom, 2005:279; Neuman, 2000:352).

Nairobi is Kenya's economic hub and a cosmopolitan city, therefore favourable to clothing consumption. Among the city's numerous socio-economic activities include

small scale garment manufacturing firms, dressmaking and custom-tailoring enterprises, and enterprises dealing with wholesaling and retailing of locally manufactured clothing products, imported and locally manufactured fabrics, materials and notions that are necessary for garment manufacturing. In addition to these, some tailoring enterprises provide TAs as a commercial activity to supplement income from their businesses. This enables individuals (youth and adults) to gain skills for employment within the garment manufacturing MSEs. Certain city council markets namely: Nairobi Textiles and Nyayo, situated right within the city's CBD and Kenyatta, Uhuru and Kariobangi, situated on the periphery of the CBD are famous for the outlined activities. The markets were therefore targeted for the study due to their potential for maximum learning and comprehensive understanding given the economic activities and ease of access which were favourable for.

The sub-units making up the case were drawn from three city council markets namely: Kenyatta, Uhuru and Kariobangi. Time was of the essence, since observation and interaction with participants for in-depth learning required ample time. It was important for the researcher to spend more time at the study sites to learn than in commuting long distance to further study sites. Ease of access to the study sites by the researcher who relied on public transport also necessitated a focus on markets closer to the CBD. Commuting to these sites via public transport was economically favourable to the researcher who was self-sponsored and had limited financial base to support field work.

It has to be restated that TAs are forms of informal training and as such not registered. Although some tailoring establishments are formally registered, the training component is often unregistered and therefore no sampling frame could be obtained. This prompted the researcher to take a transect walk across the markets situated within and across the CBD to identify custom-tailoring enterprises providing TAs to sample the sub-units making up the case. A thorough search through Nairobi Textiles and Nyayo markets failed to yield positive results. This was contradictory to the researchers' initial expectation that all city council markets within the CBD would have a substantial number of custom-tailoring enterprises which offer TAs.

It turned out that tailoring and garment manufacturing MSEs within the CBD preferred to engage in ready-to-wear clothing manufacture and custom-tailoring services which were reported as better paying compared to TAs which are time consuming and yet low paying. The majority of people who sought TAs in tailoring were perceived to be of low economic status and could only afford to pay a low fee for training. The enterprises situated within the CBD were preoccupied with activities which promised more income. The location was more favourable in terms of customers and the tailors hardly lacked work.

Having failed to secure any units from the markets located within the CBD, the city council markets situated closer to the CBD became the next target. By combing through these markets, the researcher found few custom-tailoring enterprises which provided TAs. Unlike their counterparts within the CBD, custom-tailoring enterprises situated on the periphery of the CBD had less work due to scarcity of customers. This caused some of the affected tailors to engage in TAs, mainly to boost income by charging training fees.

The markets off the CBD also seemed favourable to most apprentices, being closer to their homes. Most apprentices preferred to seek training in nearby markets to cut commuting costs by walking to the markets due to economic constraints. Even within these markets, provision of TAs in custom tailoring turned out to be limited. The same notion that TAs are demanding, time-consuming and attract the low income group was emphasised. These reports came from custom-tailors who formerly engaged in TAs, but had ceased to do so. Consequently, the few enterprises which provided TAs tended to enrol too many apprentices who were desperate for the limited opportunities.

Large numbers of apprentices seemed to serve the tailors' need for enhanced income from training fees. Following prevailing opportunities for enhanced learning through sub-units identified from the three markets, the researcher stopped further sampling and focused on the four sub-units of the case. The previous section (4.5.1), provides an elaborate account regarding how the researcher arrived at the decision to stop further sampling and focus on only four sub-units of the case. The research

methods implemented to generate data for the empirical phase of the study are presented next.

4.6 DATA COLLECTION METHODS FOR PHASE 1 OF THE STUDY

Research methods are ways of approaching the research questions in order to answer them (Willig, 2008:2). Willig (2008:2) further quotes Kvale's (1996:278) description of research as, 'the way to the goal'. The journey to the goal cannot commence unless the goal is known as this justifies any subsequent decisions. For purposes of clarity, the study's aims (goal), the research question and sub-research questions are reviewed in this section.

The study's overarching aim was to develop a curriculum model for intervention in Kenya's TAs in tailoring. An empirical study was designed towards the realization of the study's overarching aim. Based on the overarching aim of the study and the qualitative research protocol, the following main research question was formulated to guide the empirical inquiry:

- How do TAs in tailoring in Kenya describe curriculum practices which lead to the development of knowledge of clothing product quality and processes needed for optimum participation in the trade?

The main research question was further used as a basis for formulation of four sub-research question, to inform about the aspects of data needed to address the study's overarching aim, and to guide the choice of appropriate methods to generate the needed data. The sub-research questions are as follows:

4.6.1 The sub-research questions

1. What aspects of knowledge of clothing products and processes do TAs in tailoring in Kenya develop?
2. How do TAs in tailoring in Kenya identify and organise knowledge of clothing products and processes to teach apprentices?

3. How do TAs in tailoring in Kenya develop knowledge of clothing products and processes?
4. What challenges if any do TAs in tailoring in Kenya encounter with regard to the development of knowledge of clothing products and processes?

From the sub-research question, the following more general and not specific research objectives were set by simply reframing the sub-research questions to guide readers in identifying the aspects of empirical data the researcher needed to acquire.

4.6.2 The primary objectives of the study

Objective 1: To explore and describe the aspects of knowledge of clothing products and processes that TAs in tailoring in Kenya develop;

Objective 2: To explore and describe the sources, selection and organization of knowledge of clothing products and processes into a curriculum for TAs in tailoring in Kenya;

Objective 3: To explore and describe the teaching and learning techniques that TAs in tailoring in Kenya employ in order to develop knowledge of clothing products and processes; and

Objective 4: To explore and describe any challenges that TAs in tailoring in Kenya may experience with regard to development of knowledge of clothing products and processes.

Participant observation and semi-structured interviews were deemed to be suitable techniques for generating data needed to answer the main research question and address the overarching aim of the research study. Merriam (2009:117) points out that observation is contextual and is therefore suitable for providing first-hand account of the phenomenon rather than a second-hand account often obtained in the world. Informal interviews or conversations are often interwoven with observation in the real world of data collection. Research studies which take pragmatic approaches make use of multiple methods of data collection techniques to corroborate and-or complement each other (Denscombe, 2008:108; Willig, 2008:22-3) as was the case

in the current study. Case study research protocol demands that data gathering methods be triangulated to increase trustworthiness of case findings (Stake, 2008:133). Triangulation is a process of using multiple perceptions to clarify meaning by verifying the repeatability of an observation or interpretation. Flick (2009) argues that since no observations or interpretations are perfectly repeatable, triangulation serves to clarify meaning by identifying different ways the case is being seen. **TABLE 4.2** illustrates how specific aspects of the unit of analysis or phenomenon and the case were operationalised based on the identified data gathering techniques.

TABLE 4.2: OPERATIONALISATION OF THE UNIT OF ANALYSIS

Aspects of phenomenon explored, analysed and described	Specific aspects explored	Research methods implemented
Knowledge of clothing products and processes	Knowledge relating to the physical features (design, fabrics, construction and finishing) of clothing products	Participant observation, interviews
	Knowledge relating to the performance features (aesthetic and functional)of clothing products	
	Knowledge and skills pertaining to garment making processes (body measurements, pattern-making, drafting and cutting, fabric preparation, layout and cutting, garment assembly)	
Sources of, selection and organisation of knowledge	Tailors' motives (objectives) behind engagement in TAs	participant observation, interviews
	sources of knowledge/learning activities	
	Organisation of knowledge	
Teaching and learning techniques	Observation, imitation and trial and error	participant observation, interviews
	Instruction (theoretical learning)	
Challenges in development of knowledge of clothing products and processes	Tailors' and apprentices' education	participant observation, interviews
	Tailors' training background and knowledge of the trade	
	Learning resources and the learning setting	

(Source: own compilation)

4.6.3 Participant observation

Observation entails a systematic noting and recording of events, behaviours and artefacts within the social setting (Marshall & Rossman, 2011:139). Rule and John (2011:67) point out that observation is useful in capturing learning processes within the real setting. Shiohata and Pryor (2008) applied observation to study how apprentices developed literacy skills within tailoring setting in Senegal.

Participant observation takes place within the natural setting, where the phenomenon under investigation can be observed by the researcher who is involved in the participants' daily activities (Willig, 2008:27; Nieuwenhuis, 2012b:85). As a participant observer, the researcher gets involved in various activities including participation, documentation, informal interviews and reflection (Willig, 2008:27). Lave (1977, 1982) applied participant observation to extensively study how Liberian tailors acquired mathematical literacy through TA within a tailoring setting.

Participant observation was used to acquire a deeper insight of the phenomenon to foster understanding (Nieuwenhuis, 2012b:84). Bryman (2012:493) notes that participant observation is often implemented when the researcher intends to:

- Learn how things are organised, prioritised, and how people interrelate;
- Learn what the participants consider to be important;
- Become known to participants, thereby easing the facilitation of the research process; and
- Identify and refine questions to be addressed with participants.

Assuming the role of participant observer enabled the researcher to interact with participants concerning their daily activities within the workshops where they worked and learned. The researcher spent about two weeks in each unit to observe, document and reflect upon tailoring workshops as a learning setting in terms of: the available machines, tools, fabrics and materials as learning resources; the nature of tailoring activities and the types of garments made including their quality as learning activities; and the general and specific activities performed by the tailors and their apprentices. In addition, the nature of interaction among apprentices and between

them and tailors (trainers) and how these impacted on the nature of the developed knowledge were observed.

The researcher further observed how learning activities were identified, how teaching and learning occurred and the aspects of knowledge and skills the apprentices acquired. The researcher was also able to identify certain factors which seemed to impact on teaching and learning as well as the quality of the outcomes. The tailors' education, training background, knowledge of the trade, the available resources and the learning setting were noted as major constraints to the development of knowledge of clothing products and processes. Participant observation not only provided data on how the participants carried out everyday activities, but also provided the opportunity to gain a better understanding of the participants' viewpoints of the phenomenon (Hammersley & Atkinson, 1995:1-2).

The researcher compiled and used an observation schedule to guide the observation process. The schedule was drawn in line with the research questions in mind as Miles and Huberman (1994:35) and Nieuwenhuis (2012b:84) advise. Merriam's (1998) checklist of elements to observe such as: the physical settings, the participants' activities and interactions, subtle factors, and the participants' behaviour also helped to structure the observation schedule. The schedule acted as a standard for observing the elements of the case from the multiple sub-units making up the case study. Observation was, however, not limited to the schedule as the researcher was open to any emerging issues which could inform the study.

While on site, occurrences and events which seemed relevant to the study were briefly noted and later elaborated on into enhanced field notes upon concluding the day's activities. Observation notes contained what was heard and seen taking place within the study settings as well as the researcher's reflections of what occurred as advised by Willig (2008:27) and Nieuwenhuis (2012b:85-6). The observation schedule which was used to guide field research is presented in **TABLE 4.3**.

TABLE 4.3: OBSERVATION SCHEDULE

Aspects of the phenomenon	Specific areas of concern
The physical setting	Workshop size and organisation
	Equipment type, quantity and quality
	Types of materials (fabrics, other materials, sewing notions, their quality and appropriateness for use)
	Types of garments, styles/designs/fashion and quality
	Prevalent fashion and fabric types within the markets
	Customer flow, types of orders, quantity and quantity of work
The participants	Number of apprentices per sub-unit
	Age and gender
	Education and economic status
	Tailors' and apprentices' competencies in the work
Activities performed by apprentices and tailors	The tailors' approach to tailoring activities
	The actual tailoring activities
	The relationship between tailoring activities and learning activities
	Knowledge relating to physical features
Knowledge of clothing products and processes	Knowledge relating to performance features
	Knowledge relating to garment making processes
	The sources of the learning activities

Continued/.....

TABLE 4.3: OBSERVATION SCHEDULE CONTINUED

Aspects of the phenomenon	Specific areas of concern
Sources of knowledge/ identification strategies	Knowledge organisation and preparation techniques
	How the activities are assigned to apprentices
	Teaching and learning resources
Teaching and learning activities	The mode and quality of teaching and instructional strategies
	The mode of learning
	Resources used in learning
	Challenges relating to tailors' education and training background
Any associated challenges	Challenges relating to apprentices' education
	Challenges relating to learning activities
	Challenges relating to the learning setting

(Source: own compilation)

Merriam (2009:127) and Nieuwenhuis (2012b:87) caution that researcher's presence within the study setting has the tendency to cause the participants to behave differently and may therefore be a source of negative influence. Being aware of the consequences of using observation in research, the researcher opted to prolong the time spent in field work to two weeks in each sub-unit of the case as a way of overcoming this effect.

Prolonged observation period was important in enabling the participants to gradually resume normal behaviour when becoming familiar with the researcher. The researcher also tried as much as possible to remain neutral by being cautiously involved to understand the phenomenon well, yet detached enough to reflect on it too (Schurink, 1998:282-283; Willig, 2008:27). During the observation period, the

researcher tried to build a relationship with the participants. This proved to be very helpful in preparing them for individual interviews (Nieuwenhuis, 2012b:84) which occurred later on. The process of observation also paved the way for refinement of interview questions and enabled acquisition of terminologies which facilitated communication during interviews. Furthermore, the process of observation enabled the researcher to identify apprentices with the most potential to provide important data and establish the participants' preferred language. Observation therefore, paved the way for a more relaxed interview session.

4.6.4 Interview

An interview is "a process in which a researcher and participants engage in a conversation focused on questions related to a research study" (DeMarrais, 2004:55; Silverman, 2004:140). Interviews are commonly used to obtain qualitative data (Merriam, 2009:55). A major advantage of interviews relates to generation of data on participants' behaviour, opinions, and feelings regarding the phenomenon in their own words (Patton, 2002:340-341; Merriam, 2009:88). This can come in handy in situations where observations, documents and artefacts fail to provide answers, or can be used to verify observations.

In this study, interviews were conducted after observations to not only verify the researcher's observations, but to also provide certain aspects of information which were not necessarily observable, i.e., motives behind certain actions (Nieuwenhuis, 2012b:84). To illustrate this, the tailors, for example, reported that their motive behind engagement in a TA was to earn extra income, especially during times when customers' orders were not forthcoming. Important as this was towards understanding why apprentices were enrolled in large numbers, it is most likely that observation could not reveal this as other factors which could account for the same occurrence were also evident. Through interviews, the researcher established that the tailors were not quite keen on the quality of training, but the income earned from it. While this attitude impacted on the balance between teaching and tailoring activities, it could be difficult to account for the occurrence based on this information if it was not shared. Furthermore, the interview data proved handy in the analysis

process as they conveyed the convincing evidence. Instances where interview reports contradicted observed occurrences were also prevalent. These occurrences proved the worth of triangulation of methods.

Silverman (2004:140) advises that interviews should be treated as special forms of conversations, meant to be interactional, with both parties being involved as active participants. While conducting the interview, the researcher actively participates by directing and controlling the process. The interviewees were allowed space to redefine the questions and develop an understanding of what was being communicated in the interview to generate relevant answers (Willig, 2008:24). As "a joint production" of the researcher and the participant, the active participants' insights, feelings and cooperation are deemed essential parts of the discussion process that reveal subjective meanings (Neuman, 2000:370). It is for this reason that qualitative studies are believed to provide grounds for social construction of meaning; with all knowledge being created from the actions undertaken by participants to obtain it (Silverman, 2004:141).

Silverman (2004:141) contends that treating interviews as social encounters in which knowledge is actively constructed implies that the interview is not so much a neutral conduit or a source of distortion, but rather a site of, and an occasion for, producing reportable knowledge. Based on the guidelines, a semi-structured interview was chosen to steer the interview process to generate verbal data on the participants' perspectives and experiences of the phenomenon.

A semi-structured interview is often guided by a carefully planned, semi-structured discussion that is built around the research question that the study seeks to address (Merriam, 2009:89; Rule & John, 2011:65). A semi-structured interview was relevant to the explorative study (Welman *et al.,* 2012:197) which sought to capture in-depth knowledge of the phenomenon from the participants in order to learn. A semi-structured interview was also aimed at corroborating observation data to increase trustworthiness of study findings (Nieuwenhuis, 2012b:87).

Bryman (2012:13) points out that a semi-structured interview can enable a researcher to keep an open mind to the interview process while allowing concepts, and theories to emerge from the data. A semi-structured interview (Willig, 2008:24) provides researchers with the opportunity to hear the participants talk about particular aspects of their lives or experiences based on the researcher's ability to use questions which encourage the participants to talk freely. However, the interview process should be 'non-directive', but be guarded in such a way that the responses to the researcher's questions and comments yield data required to answer the research questions.

Neuman (2000:371) explains that a semi-structured interview is a suitable technique to learn from interviewees and their situation. Because it can be hard for researchers to think about interviewees' specific situations to incorporate in the interview schedule, the semi-structured questions can be effective. Structuring of conversation does not necessarily imply that it is systematically pegged on the planned schedule, but simply steers the conversation to stay on course.

Kvale (1996) provides quality criteria for interviewing which entails: the use of short interview questions that glean correspondingly long answers; the importance of interpreting, verifying, and clarifying answers during the interview process. These should result in spontaneous and rich responses. Following the advice, four short open-ended field questions, each addressing a specific sub-research question, were developed to guide the interview process. In addition to these, intense probes were used to further explore responses which seemed inadequate and or leading to interesting revelations, yet were not elaborated on.

Two sets of interview guides were prepared in line with the sub-research questions/objectives under exploration for the two participant groups. The preliminary conceptual framework (**FIGURE 3.1**) developed to guide the study informed the development of the interview guides. Apprentices and tailors (trainers) assumed a different status in the study. This demanded that questions relating to the same sub–research questions/objectives be framed differently to elicit appropriate responses. Each guide addressed the four sub-research questions in a more general

manner to allow for a flexible, iterative and continuous process which simultaneously enabled probing of any emergent and/or unclear issues (Babbie & Mouton, 2001:289). The set of pre-set questions provided the opportunity to explore the phenomenon from the embedded sub-units making up the case, drawn from multiple settings in a similar manner, and helped to eliminate biases (Miles & Huberman, 1994:35; Stake, 2008:123). **TABLE 4.4** illustrates the nature of questions which constituted the interview schedule.

TABLE 4.4:SEMI-STRUCTURED INTERVIEW SCHEDULE

Specific aspects explored	Interview questions
Knowledge of clothing products and processes	Trainer: What do you teach your students about tailoring?
	Apprentice: What are you taught in tailoring?
	Apprentice: What do you learn about tailoring?
Knowledge sources and organisation techniques	Trainer: Tell me how you identify what to teach your students?
	Trainer: Tell me how you plan or organize what you teach?
	Apprentice: Tell me how the tailors identify what to teach you?
	Apprentice: How does the tailor plan and organize what to teach you?
Teaching and learning techniques implemented	Tailor: Tell me how you teach your students about tailoring?
	Tailor: Tell me how your students learn about tailoring?
	Apprentices: Tell me how you are taught about tailoring?
	Apprentices: Tell me how you learn tailoring?

Continued/.....

TABLE 4.5:SEMI-STRUCTURED INTERVIEW SCHEDULE CONTINUED

Specific aspects explored	Interview questions
Teaching and learning techniques implemented	Tailor: Tell me how you teach your students about tailoring?
	Tailor: Tell me how your students go about learning tailoring
	Apprentice: Tell me how you are taught tailoring?
	Apprentices: Tell me how you go about learning tailoring?
Challenges to development of knowledge of clothing products and processes	Trainer: What challenges, if any, do you encounter in teaching tailoring?
	Trainer: Tell me about any challenges which apprentices encounter when learning about tailoring?
	Apprentices: Tell me about any challenges which you tend to encounter when: 1) Being taught tailoring?
	2) Learning about tailoring?

(Source: own compilation)

Open-ended probes specific to a participant's comments were used to implore the participants to elaborate on their answers whenever necessary. See **ADDENDA 3** (**A** and **B**) for a more detailed interview schedule that finally emerged from the interaction with the participants during the interview process based on the responses to the main interview guide and the associated probes. While the researcher tried as much as possible not to ask leading questions, at times the researcher was forced to be very categorical about areas of learning which were seemingly not forthcoming, especially the aspects of knowledge which were not observable.

For example, both tailors and apprentices had difficulty articulating what was taught and/or learned about fabrics. Apart from being quick in reporting that apprentices learned about techniques of fabric preparation for lay-out and cutting, the researcher had to press the participants further to provide more information by probing, rephrasing the questions, and asking questions in a manner that encouraged them to think and provide answers which could inform the study. This was mainly done after

ascertaining that both interviews and observations revealed limited information regarding these aspects of the phenomenon being explored. Welman *et al.* (2012:198) approve of the use of such a strategy.

The research process was planned in such a way that interviews were conducted only after the researcher had been with the participants in their learning setting for some time to observe the phenomenon. By the time of the interview, the researcher and the participants were no longer strangers to one another, but were both participants in a common activity, collaborating to enable the researcher to learn. Consequently, the researcher even knew each of the participants by name and by what they were doing, some of their weaknesses and capabilities and possible reasons behind the occurrences. This was in line with the requirement of qualitative research: to build trust and rapport with participants at the onset of data collection (Miles & Huberman, 1994:34; Welman *et al.,* 2012:199). Interviews were conducted at a time when most of the observations were in place. Such an orientation provided the researcher with the opportunity to refine the questions after being aware of certain areas which needed more clarification. Nieuwenhuis (2012b:84) regards this as important.

While preparing participants for the interview process through informal conversations during observation, telling them about what would be expected of them during the occasion; the researcher learned that most of them feared to participate in recorded conversations. The early discovery presented the researcher with the opportunity to try as much as possible to make the participants feel comfortable with voice recording in advance. Through their permission, the researcher taped some of the informal conversations and thereafter made the participants listen to their voices. Hearing their voices made them excited thereby finally becoming easy with taping of interviews. Theron and Malindi (2012:106) recommend such an approach.

Through daily interaction with the participants, the researcher also discovered that some participants were uncomfortable with speaking in English and therefore, determined the language to use in advance. For example, the researcher's mother tongue was applicable to all trainers. However, some apprentices, especially those

who had basic education preferred 'Kiswahili', which is the national language in Kenya. Secondary school graduates who were town bred preferred a mixture of English and Kiswahili. Early conversion of interview questions into languages which seemed comfortable to the participants made the interview process successful with regard to communication. The participants were able to express themselves with ease in languages which were comfortable to them. The interview process was conducted in a flexible, conversational manner that flowed naturally according to the communication style and temperament of the interviewees. Interview guides were used to steer all conversations.

All interviews were audio taped, with each participant's file containing the conversation labelled by name and sub-case. Interviews with trainers (tailors) were recorded in more than one file due to interruptions from phone calls and occasional running back to the stalls to sort out any customers who popped in. While apprentices had no problems with switching off phones through the entire interview session, the tailors were uncomfortable with this due to the nature of their position. The tailors informed the researcher that they were going to stay open to receive phone calls from customers and to attend to any invitations to get back to their workshops whenever called upon to attend to the customers, who often popped in without prior appointments. The researcher had to oblige.

Because of excessive noise from the sewing machines within tailoring workshops, the researcher made arrangements to conduct interviews in workshops located slightly far from these, but within the same markets. Although the interview data should be transcribed as soon as the data are obtained (Krueger, 2009:116), this was not possible in this particular study. Circumstances in the field could not enable the researcher to afford time to transcribe large amounts of interview data as soon as they were obtained. Some of these include:

- Financial constraints due to expensive accommodation in the city. This threatened prolonged stay in the field and caused the researcher to devise measures which could reduce the extended stay in the field;
- The period of data collection coincided with Kenya's parliamentary election year. The elections were scheduled for March 2013. Due to feelings of

anticipated insecurity following the 2007 post-election violence, most participants who lived in the major city slums planned to relocate to their rural homes just before the time. It happened that most of the participants lived in such locations and had planned to travel to their rural homes. As a result, there was need to maximise the available time to accumulate data as quickly as possible. It was difficult to predict how the city atmosphere would be during and immediately after the elections. Most participants were therefore unaware of how soon they could return to the city after the elections.

4.7 DATA ANALYSIS

Nieuwenhuis (2012c:99) points out that qualitative data analysis is an on-going and iterative process with phases of data collection, processing, analysis and reporting all intertwined. Qualitative data analysis is the process of making sense of the data (Tesch, 1990:4). Qualitative data analysis provides the researcher with the opportunity to understand the phenomenon through discovery of answers to the research questions (Merriam, 2009:175-176, 203). McCracken (1988) in Basit (2003:143) identifies the object of analysing qualitative data as being able to determine the categories, relationships and assumptions that inform the respondents' view of the world in general, and of the topic in particular. The analysis of data for this study was conducted according to guidelines by Nieuwenhuis (2012c:104-108) as well as Miles and Huberman's (1994:17) data analysis framework. The steps which were followed are described in the section which follows.

4.7.1 Data transcription and organisation

Due to time constraints as already reported, the researcher did not transcribe the lengthy and voluminous interview data as soon as the interviews were accomplished. Instead, transcription only occurred after the data collection process was complete, and when the researcher was already away from the field. However, the researcher scheduled the interviews in such a way that only one could be conducted per day, to be able to listen to the conversations intensely during the night following the interview. This was done in order to be conversant with the conversations, to reflect

upon and note any issue which needed to be verified with the participants. Through an informal discussion, a participant was requested to clarify any of the identified issues. The procedure helped to enhance the researcher's understanding of the rest of conversations to enable verification. Important reflections were also done while the interview was still fresh in the researcher's memory. These strategies to a certain extent helped to ensure that interview data which would only be transcribed at a later stage attained some level of trustworthiness/credibility (Nieuwenhuis, 2012c:113).

The process of data transcription began by organising the interview data on a sub-unit basis. This was because certain interviews were based on revisits and or conducted afterwards when the researcher was already involved with interviews in other settings. The researcher listened to each of the recorded conversations over and over to become familiar with the information to facilitate the transcription process (Henning, Van Rensburg & Smit, 2004:105; Merriam, 2009:109-110). This process enabled the researcher to recall and connect with the research setting and with participants in terms of who they were and their contributions. Transcriptions were verbatim, written word for word while noting any non-verbal cues such as silence or any forms of emphases (Nieuwenhuis, 2012c:104) based on the language of conversation.

While the information was still fresh in the researcher's mind, immediate translation into English was done before initiating the next interview transcription. During translation to English, data were transformed into more meaningful and sensible documents without losing any of its contextual meanings (Miles & Huberman, 1994:9; Mouton, 2001:107). In fact, the researcher tried to retain the wording as close as possible to the exact way in which they were reported. In order to ensure data credibility, a set of raw data was preserved by producing copies for use during data analysis while keeping others in their original version.

Once all transcripts were in place, the researcher read through other forms of data (reflective memos and field notes) several times and then rewrote them in a more meaningful manner while retaining their original meaning. The aim was to sort out any redundancies while fitting parts together. Thereafter, all forms of data (initial

biographical questionnaires, field notes, observations, transcripts and reconstructed reflective memos and notes) were merged together according to each sub-unit in readiness for analysis (Merriam, 2009:204). The process of immersion or familiarisation with the data then followed immediately.

The transcripts and field notes from observations were read through several times again in order to become familiar with the data in general and to foster location of particular aspects of information relating to the themes under investigation. The recorded voices were further listened to intensely to enhance familiarisation and to verify consistency with transcripts (Merriam, 2009:175; De Vos *et al.,* 2011:409). The immersion process made it possible to identify various sections of the data that could quickly be compared and contrasted with others (Morrow, 2005:259). Intense reading of all text data and listening to interviews enabled memoing (noting of impressions or ideas that emerged from the data) thereby furthering understanding (Nieuwenhuis, 2012c:104).

While reading through the data from transcript copies to another, large chunks of data were coloured with specific colours designated for specific thematic meanings, for example, the purple and red fonts signified aspects of knowledge and skills and learning practices respectively while the bold green was significant for challenges and the yellow one stood for knowledge sources. Comments were also made in colour within the transcripts according to meanings elicited from data sections. The techniques familiarised the researcher with the data and aided quick retrieval and transfer of data to the data analysis tables through the cut-and-paste technique. Separate tables were created for each of the themes during open coding.

4.7.2 Open coding

This is the first step in coding where data are broken into specific topics in terms of similar and dissimilar concepts; it involves labelling the phenomena, discovering categories, naming of categories, developing categories based on their properties and dimensions and writing notes (De Vos *et al.,* 2011:271-273). The process of data breakdown exposed thoughts, ideas and meanings contained in the text in

accordance with the predetermined themes (Neuman, 2000:422). The themes were predetermined by the sub-research questions.

The process of open coding was initiated by carefully reading through each transcript line by line while dividing the information into meaningful analytical units or segments. Every meaningful segment was then assigned a code in form of descriptive words or concepts or phrases that made it more meaningful to the researcher (Charmaz, 2011:165; Nieuwenhuis, 2012c:105), but in accordance with the field questions. The codes were created as they emerged from the data based on the participants' words as used to answer the field questions. The process of open coding continued until all transcripts were completed.

Although Nieuwenhuis (2012c:105) advises that a master list of emerging codes be created for subsequent coding, the researcher preferred to use the participants' words as they emerged instead. This happened when the researcher learned that not all meaningful segments could be exhaustibly assigned meaning via the former method due to too many variations. However, the meanings associated with the codes were guided by the field questions and concepts that were in the conceptual framework. The coding process was therefore, based on both inductive and deductive approaches, which Nieuwenhuis (2012c:107) approves of. Nieuwenhuis (2012c:109) refers to the identification of codes on the basis of their relationship with the theme as priori coding.

Merriam (2009:175) and Rule and John (2011:106) approve of the use of both modes of coding in case studies. Rule and John (2011:96) for instance, argue that the dialogic model provides a productive interaction between theory and research at different stages, thereby facilitating the analysis process. Pope, Ziebland and Mays (2000:114) and Mishler (1990) in Miles and Huberman (1994:17) equally assert that description and analysis of a social phenomenon requires deriving of analytical categories inductively from data or deductively from theory.

Engaging with the data through coding enabled reflection on the transcripts and on certain issues which emerged during actual interview and observation processes. Coding systematically led to further analysis of the data, noticing the emerging relationships between the codes, categories and themes. The process of coding was however, challenging to the researchers who was a newcomer in qualitative research. The coding process was repeated more than enough times to identify concepts which addressed the field questions before completely getting everything right. While producing results was paramount, it was also a learning time for the researcher who was experiencing qualitative research for the first time. This confused the researcher and even overwhelmed her for a better part of the data analysis phase. The researcher also realised that the coding process is not a once-off affair as it entailed running back to the data throughout and including during discussion phase, thereby agreeing with Nieuwenhuis (2012c:107). An extract of how initial coding was done is provided in **TABLE 4.5.**

TABLE 4.6: CODING FOR THE ASPECTS OF KNOWLEDGE AS A THEME

Tell me about what you teach your students?	Segment	Code
When you report, I introduce you to the machine. Know how to control it and learn to thread, stitch straight and general machine issues. This is done on the first day. On day 2, you bring plain papers and a ruler, make straight lines and stitch straight lines along them without thread.	I introduce you to the machine. Know how to control it and learn to thread, stitch straight and general machine issues. Bring plain papers and a ruler, make straight lines and stitch straight lines along them without thread.	Introduction to sewing stitch quality
They practise stitching on the rags given to them. When they gain control, I tell them to buy fabric so that we can learn to make a straight skirt, a basic straight skirt without any additional design detail on it.	I tell them to buy fabric so that we can learn to make a straight skirt, a basic straight skirt without any additional design detail on it.	garment assembly
Sometimes before we go to the table, I give small fabric pieces so that they can practise making things like darts and inserting zips in the garment.	I give small fabric pieces so that they can practise making things like darts and inserting zips in the garment.	dart making and inserting zips
When I want to cut a straight skirt, step one what do I do? You refer to the notes, from the notes we practise it there on the table. Step 2, 3, 4 till the front part is over, we cut it out. From there, back parts and the waistband, we draft and cut. You go buy thread and a zip to start stitching, finishing and pressing. I show you everything and even cut for you to see step by step.	...back parts and the waistband, we draft and cut. ...buy thread and a zip to start stitching, finishing and pressing.	draft patterns and cut sewing finishing and pressing

4.7.3 Axial coding

This aspect of coding entails putting data in new ways by seeking to identify explicit connections between data categories and sub-categories (Nieuwenhuis, 2012c:107). A link was formed between categories and their sub-categories in a pattern of relationships showing how each affects the other based on interactions and correlations of concepts (De Vos *et al.,* 2011: 274). This process entailed explaining and understanding relationships between categories in order to interpret the phenomenon to which they relate better (Nieuwenhuis, 2012c:107). The process stimulated thinking about possible linkages between concepts and themes and the various formats in which to display them (Neuman, 2000:423).

After completing the open coding process, all of the emergent and deduced codes were read through to identify any relationships between them and to establish any meanings that could be associated with the recurring codes. This helped to derive category names under which they could be grouped (Nieuwenhuis, 2012c:108). The category names were derived from the literature depending on how these were interpreted in relation to sub-research questions and the field questions. Cutting and pasting while trying to fit each code to its rightful category name according the meaning conveyed helped to accomplish the categorisation process per theme. An extract of how categorisation process occurred is provided in **TABLE 4.6.**

TABLE 4.7: CATEGORIZATION OF THE ASPECTS OF KNOWLEDGE

Codes	Category	Sub-theme
Introduction to sewing; garment assembly; dart making and inserting zips; sewing, finishing and pressing	Garment assembly	Garment making processes
Stitch quality	Construction	Physical features
Pattern drafting and cutting	Pattern making	Garment making processes

4.7.4 Selective coding

The process of selective coding entails looking at the core concepts of the study in relation to the rest of the categories (De Vos *et al.,* 2011:274). Curriculum practices in TA in tailoring as the core concept was explored in relation to the aspects of knowledge; sources, identification and organization of the knowledge; teaching and learning practices and challenges as sub-concepts. In exploration of the four sub-concepts, the outcomes and factors which contribute to these were identified. This meant that the relationship between the main concept and sub-concepts had to be established, validated and even clarified (De Vos *et al.,* 2011:274; Nieuwenhuis, 2012c:109).

The search for meaning and understanding entailed scrutinising how the various sub-concepts influenced one another as well as their ultimate influence on the main concept. This was necessary for description, interpretation and even explanation of the main concept or phenomenon. In this regard, the process of selective coding entailed identifying the story, which enabled the researcher to move from description to conceptualisation, making choices between two or more salient aspects of the phenomenon, and to determine its properties and dimensions. The outlined processes were not linear, but entailed moving back and forth between them in order to build theories from the data (De Vos *et al.,* 2011:274). Babbie and Mouton (2001:501) point out that the core category/concept is the object of the study, and should be narrated in an analytical manner with its properties and dimensions as related to it and to all the other categories.

As the analysis and compilation of the aspects of knowledge progressed, the researcher asked whether the sub-units were able to develop all of the aspects of knowledge outlined in the conceptual framework, and if not, then why? Addressing the why part led to further scrutiny of the differences in the aspects of knowledge and skills that were developed or not developed, and the sources of knowledge to determine the content of what was presented for teaching and learning. This further led to scrutiny of activities which were performed, the teaching/guidance and learning practices as well as environmental and contextual factors such as learning

resources, the participants' education and training background, the tailors' motives behind engaging in TA, among other variables to discover how these impacted on knowledge and skills development processes and the nature of the outcomes. Such a level of conceptualisation enabled the researcher to establish causes of knowledge and skills limitations, identify the story, describe, explain and even draw conclusions. This is analogous to the "research chunk of reality" as the bases for arguing around meanings (Krueger, 2009:121; Henning *et al.*, 2004:107).

To illustrate the above, the segment of the data captured in **TABLE 4.5** illustrates the participant's description of what was being taught. While the data contained in the transcript were relevant to the question, an in-depth analysis of the data shows that the knowledge was concrete, mainly consisting of practical skills pertaining to garment making processes. The data further showed that the mode of learning and learning activities which apprentices engaged in accounted for the emergence of practical skills. These latter parts of analysis highlight how the researcher interacted with the data to bring out a deeper understanding and explanation of the phenomenon to move the reader from the descriptive level to the interpretative and conceptualisation levels which enabled drawing of effective conclusions.

Throughout the study, certain quality measures were implemented to ensure that the quality of data and findings was not compromised. The strategies pertaining to how the researcher tried to combat errors are discussed next.

4.8 QUALITY CRITERIA OF THE STUDY

The qualitative research approach prefers to use the term trustworthiness as opposed to truth and value which are used in quantitative research (Rolfe, 2006). Lincoln, Lynham and Guba (2011) view trustworthiness as a general picture of quality in any qualitative study. Trustworthiness comprises of credibility, transferability, dependability, confirmability, and authenticity of the data (Creswell & Miller, 2000:126). Discussion regarding how trustworthiness was addressed by the current study is presented in the section that follows.

4.8.1 Credibility

Credibility is the measure of the extent to which the study achieves what it set out to study and whether the findings are reflective of reality (Merriam, 2009:210). Guba and Lincoln (1989) as quoted in (Tracy, 2010) add that credibility is concerned with professional integrity, methodological capability, and rigour. Several strategies were implemented in order to make the research process and findings credible and trustworthy.

The researcher employed triangulation of methods and participants as strategies to ensure credibility. Different methods of data collection (participant observation and semi-structured interviews) were employed in exploration of the phenomenon in question. The phenomenon was also explored from varied participant groups (tailors and apprentices) within and across multiple sub-units and settings (Merriam, 2009:210). The themes which were under investigation were therefore, based on convergence of pieces of information which were elicited from multiple and different sources (Cresswell & Miller, 2000:126).

The use of observation as a method of data collection enabled the researcher to prolong stay in the field, spending about two weeks in each sub-unit/setting to gain adequate exposure which was necessary for achievement of data saturation. Prolonged stay was necessary for in-depth learning including establishment of multiple influences from the participants and context (Patton, 2002:553; Babbie & Mouton, 2001:277).

Credibility can also be attained through peer review (Merriam, 2009:217; Nieuwenhuis, 2012c:113). Peer review was performed to render the whole research process including data analysis and interpretation of results credible. The researcher consistently consulted the study leaders throughout all stages of the study to ensure implementation of appropriate research processes. The study leaders also performed consistency checks by reviewing the codes, categories and themes and often suggested how to improve these to ensure credibility. In addition, a doctoral student knowledgeable in certain areas of the study and who also applied a similar methodology in her study consistently reviewed the work, assisted with valuable

insights and contributions during the analysis, interpretations and discussions thereby helping to improve credibility of the data and findings.

Member checking is also a very important aspect of credibility of information (Maxwell, 2005:111; Merriam, 2009:217). Data were collected in Kenya and analysed in South Africa, and technology could not be used to get the participants to do member checking because the participants' work environment is not technology oriented. The apprentices were temporary in their training settings and tracing them after a period of over one year when results were established would not be easy. Although tailors were likely to be in their settings, the researcher's field experience showed that their commitment to reading the lengthy transcripts would not suffice. The researcher noted that the tailors' interest in reading was low and efforts to send transcripts would probably bear no fruits. The option of the researcher presenting the transcripts by herself, reading out to the tailors, was constrained by geographical barrier between the two countries and the expense involved.

Having these constraints in mind, the researcher made efforts to verify data obtained through interviews with some participants while still in the field. Immediately after the interviews, the researcher intensely listened to the taped conversations to familiarise herself with the information, and through informal discussions, sought clarity from the participants regarding certain key issues, to ensure that the researcher and the interviewees had similar understanding. In addition, the researcher tried as much as possible to verify observation data with the participants through informal discussions. Such efforts are acknowledged as instrumental to credibility in qualitative studies (Nieuwenhuis, 2012c:113).

A qualitative researcher performs multiple roles which include data collection, observer, interviewer and interpreter (Miles & Huberman, 1994; Babbie & Mouton, 2006:273; Creswell, 2009:177). While performing these roles, the researcher's background (training, experience, values, beliefs and interests) may influence the study's credibility in one way or the other (Denzin & Lincoln, 2000:371). In relation to this, Kvale (1996:117) emphasises the role of the researcher as follows: "the person of the researcher is critical for the quality of scientific knowledge and for the

soundness of ethical decisions in any research project." Willig (2008:88) views the researcher as a witness and a reporter, and therefore, a very important 'instrument' in the inquiry process. The researcher should observe events carefully and accurately while remaining objective and neutral, yet be able to provide sufficient evidence to support any interpretations, and not report personal opinion. Similarly, Hammersley and Atkinson (1995:18) point out that the researcher has an effect on the people studied, and because this cannot be eliminated completely, it is essential for the researcher to understand and minimise this reactivity, or to consciously monitor it.

Following the above guidelines, the researcher in the current study tried as much as possible to minimise any forms of biases which could arise from the background, including attitudes and beliefs of what quality training should be. The researcher was drawn to this study following previous encounters with graduates of TAs who were hired as employees for the researcher's custom-tailoring enterprise. The tailors were hired to assist with custom-garment design and production, yet their performance in the various aspects of the work turned out to be sub-standard, not only in relation to the researcher's standards, but also to the customers.

The researcher had worked as a high school graduate teacher, a lecturer in a polytechnic institution and an assistant lecturer at a university in Kenya in Fashion design, clothing construction and merchandising, and a custom-clothing designer and entrepreneur. Based on this background, the plight of graduates of TAs with regard to inadequate garment production skills puzzled the researcher. This seemed to trigger empathetic feelings for the apprentices and tended to influence the researcher's judgement of curricular practices within TAs before going to the field. The researcher's background was therefore, likely to influence perception of the data and the way these would be interpreted, a situation which Trowler (2011) calls '*interview bias'*. However, the research ethics, as emphasised above helped to regulate the researcher's behaviour in the field.

As a result, the researcher strived to maintain a neutral relationship with all participant groups throughout field work in addition to trying to remain transparent to

what the participants reported, what was observed and even the way it was interpreted. Based on observation, interviews and continuous reflections of the participants' experiences and contextual factors in general, the researcher was able to understand the phenomenon well and managed to provide detailed descriptions. In describing the phenomenon, attempts were made to represent the participants' multiple perspectives and experiences as holistic as possible and maintain a balance and fairness in representing the participants' varying views about the phenomenon, including both contradicting responses as well as those which were unique to individuals. The researcher also tried to safeguard against reporting from own perspective.

4.8.2 Dependability

Dependability refers to the extent to which research findings can be replicated, or the extent to which the study can yield similar results when repeated. This, is however, not possible with human behaviour which cannot be controlled (Wolcott, 2005:159; Rule & John, 2011:107) and is the reason why the study employed a case study research design. Yin (2009) suggests that a case study is suitable in circumstances where the researcher has no control over human behaviour.

Attempts to ensure dependability entailed provision of detailed accounts of how the study was conducted, the data were generated and even analysed. An account of field work progress included decisions regarding the type of case study to employ, criteria for case selection, how the number of participating sub-units making up the case and study participants were determined, the suitable data gathering techniques, how data were verified, organised, analysed and interpreted, and how contextual information was integrated with the participants' reports to provide in-depth description. The researcher kept reflective journals, posed questions, puzzles, problems encountered and how these were resolved. In other words, the researcher kept an audit trail of the research process (Richard, 2005:143).

4.8.3 Transferability

Transferability can be viewed as the extent to which the results can be transferred to other related situations (Merriam, 2009:224). In-depth description of data entailed the context in which the data were collected to render the data transferable to similar situations. Details about the case and its sub-units were recorded and documented and frequently referred to throughout the discussions. In addition, use of varied settings, varied participant groups, and presentation of participants' varied perspectives which were illustrated through quotes further illustrate certain strategies which were employed to make findings transferable (Lincoln & Guba, 1985:298 in Merriam, 2009:223-7; Rule & John, 2011:105). Furthermore, the researcher provided elaborate steps leading to the development of the curriculum model. These highlights can be adapted by researchers who are keen to conduct similar or related research studies.

4.8.4 Confirmability

Confirmability relates to the ability of the participants' shared views, perceptions and experiences to confirm the general findings as opposed to the use of the researcher's ideas (Creswell, & Miller, 2000). A key criterion for confirmability relates to the extent to which the researchers admit their own predispositions (Miles & Huberman, 1994). The researcher acknowledged various ways in which the possibility of own bias and personal values might have influenced data interpretation. However, to guard against this, the researcher made use of reflective commentary in a field journal. The use of the participants' interpretation of occurrences while still in the field also enabled an enhanced understanding. The researcher also made use of quotes from the participants as the main source of supporting evidence.

4.9 LIMITATIONS OF THE STUDY

The study explored current curriculum practices in TAs in tailoring in Kenya with regard to the development of knowledge of clothing products and processes and any associated challenges. The study's overarching aim was to develop a curriculum

model to be proposed as an intervention in technical skills training of graduates of TAs. The testing of the model was therefore beyond the study's scope.

This was an instrumental case study, limited to four sub-units drawn from three city council markets situated on the periphery of the CBD of Nairobi city. Being a case study, the study's findings cannot be generalised statistically (Merriam, 2009:77, 104; Rule & John, 2011:105). However, the close examination of the case and the possibilities of viewing reality through multiple perspectives make the insights gained analytically and theoretically generalisable. The study findings as a result, make important comprehensive contributions that other researchers can learn from.

The researcher noted that the participants were not very articulate with regard to communication about the subject matter. They lacked the relevant terminologies to express themselves. This was despite the researcher's attempt to adapt local language to enhance their understanding and participation in conversations. This made the meaning making process by the researcher extremely difficult and time-consuming.

While in the field, the researcher noted that the tailors had different expectations from the study. They constantly perceived the study as a vetting strategy for some aid in the near future. This was despite the repetitive disclosure by the researcher that the study was purely aimed at fulfilling academic requirements. This expectation caused them to extensively dwell on their general low economic status, lack of materials and resources. Because this was recurring spontaneously in between the discussions, it made the conversation data very long and difficult to transcribe. All except one tailor was able to acknowledge that lack of knowledge of the trade was a major challenge to training quality.

4.10 ETHICAL CONSIDERATIONS

Conducting research in an ethically sound manner enhances the quality of research and contributes to its trustworthiness (Rule & John, 2011:112). The following attempts were made by the researcher to ensure that research was conducted ethically.

The researcher initially developed a research proposal which was submitted to the ethics committee of the Faculty of Natural and Agricultural Sciences at the University of Pretoria for evaluation. The proposal and documentation pertaining to the ethical conduct proposed for the study were approved before the field work commenced.

Another aspect of ethical consideration involved obtaining the participants' consent to take part in the study (Welman *et al.*, 2012:201). Permission to conduct research was granted by the tailors who were the enterprise owners. This was based on request for assistance following the researcher's prior explanation of the objective of the research study. On accepting to participate in the study, each tailor was informed of the need to sign a consent form to confirm that they voluntarily and willingly participated in the study. The content of the consent form was read to them prior to signing. See **ADDENDUM 1A.**

While within the study setting, each of the tailors introduced the researcher to the apprentices and granted the researcher permission to explain the reason for being around. All apprentices within each sub-unit, including those who did not take part in the interview were willing to participate in the study. They contributed to the observable aspects of the data and informal conversations and therefore signed the consent forms prior to participation. See **ADDENDUM 1B**.

The researcher's identity and affiliation with the University of Pretoria were made known to the participants to further assure them that the study was simply aimed at fulfilling academic obligations. In addition, the university logo and the study leader's email-address as well as telephone contact were clearly indicated on the consent letters for the participants to use in case of any queries.

The participants were assured of privacy, confidentiality and anonymity as stated in the consent letters. The consent letters clearly indicated the participants' right of privacy, that their identities would not be disclosed. They were assured that their details and information shared with the researcher would be treated with confidentiality, and used only for research purposes. The right to participate and/or

withdraw from the study whenever one felt like was also made clear to the participants (Rule & John, 2011:112; Welman *et al.*, 2012:201). The information was initially emphasised verbally by reading the letters with them before fieldwork commenced (Kvale & Brinkmann, 2009). In addition, issues regarding recording of observations and conversations were also discussed in advance and agreed upon as Stake (2008:140) suggests.

The participants were treated with respect throughout the field work session. The researcher remained cognisant of the fact that no harm whatsoever (embarrassment or seeking of information irrelevant to the study) was caused to any of the participants.

As a way of appreciation, the researcher occasionally bought and shared fruits which were readily available within the markets with the participants while observations were on-going. The researcher also observed ethical issues pertaining to data analysis and reporting as addressed within various sections within this chapter.

4.11 SUMMARY

This chapter covered a detailed description of the research process. This commenced by highlighting the methodological framework of the study and discussed the philosophical and paradigmatic assumptions which underpinned it. An extensive discussion of the research design used including the data collection and analysis techniques employed followed. The processes which were implemented to obtain trustworthy findings and limitations were also discussed. The study's strengths and challenges as experienced in the field as well as the various ways in which these were resolved were elaborated upon. The researcher's roles and the tasks executed during the entire research process were explained in-depth. The chapter also elaborated on the steps taken to ensure ethical research processes. The next chapter (Chapter 5) addresses the study's findings which are backed by supporting evidences in form of verbatim quotes from the participants and corroborated with field observations where necessary.

CHAPTER 5: THE STUDY FINDINGS

5.1 INTRODUCTION

The previous Chapter (4) describes the empirical research process which took place in Nairobi, Kenya. The chapter justifies among other things the selected methodological approach and the research design which aligned with the research question, aim and-or the study purpose. The chapter also discusses techniques of data analysis, trustworthiness of findings and ethical considerations.

The current Chapter (5) presents the empirical findings on the situational analysis of curriculum practices in TAs in custom-tailoring in Kenya. Before presenting the comprehensive findings, the contextual information pertaining to the studied sub-cases is first presented. **ADDENDA 2** (**A** and **B**) provide the questions which helped to establish the participants' biographical data.

Coding of the participants across the sub-units was as follows: tailors: T1, T2, T3 and T4. The numerical digits signify the sub-units that made up the instrumental case. Likewise the apprentices were coded as: **'A1/1 & A2/1', 'A3/2 & A4/2', A5/3, A6/3, A7/3 & A8/3** and **A9/4 & A10/4,** according to how they were distributed across the sub-units (1, 2, 3 & 4) making up the case. **TABLES 5.1** to **5.4** illustrate the how the participants were coded and distributed across the sub-units. In addition, the tables provide the contextual overview of the studied sub-units as well as the biographical data of the participants.

TABLE 5.1: CONTEXTUAL INFORMATION FOR SUB-UNIT 1

SUB-UNIT 1				
Business location	Kenyatta Market			
Duration of training	Since 2005			
Product and service type	Women's wear custom-clothing of all types: casual two piece skirt and pant suits and dresses for every day wear, from all fabrics types including African cotton print fabrics, school uniforms, alterations and repair work			
Total number of apprentices	5 (1 *M and 4 *F)			
Number interviewed	2 (A1/1 & A2/1)			
Particulars of interviewed participants	**Gender F/M**	**Age (years)**	**Education *PS/*SS**	**Training type / duration months)**
Tailor (T1)	M	40	PS	TA
Apprentice (A1/1)	F	18	SS dropout	17
Apprentice (A2/1)	F	27	SS dropout	9

*M: Male; *F: Female; *PS: Primary School and *SS: Secondary School

TABLE 5.2: CONTEXTUAL INFORMATION FOR SUB-UNIT 2

SU-UNIT 2				
Business location	Uhuru Market (Eastlands Stalls)			
Duration of training	Since 2008			
Product and service type	Women's wear custom-clothing of all types: casual two piece skirt and pant suits and dresses for every day wear, from all fabrics types including African cotton print fabrics, school uniforms, alterations and repair work			
Total number of apprentices	2 (all F)			
Number interviewed	2 (A3/2 & A4/2)			
Particulars of interviewed participants	**Gender F/M**	**Age (years)**	**Education PS/SS**	**Training type / duration months)**
Tailor (T2)	F	27	SS	TA
Apprentice (A3/2)	F	23	SS + *FVT	9
Apprentice (A4/2)	F	22	PS	3

*FVT: Formal Vocational Training

TABLE 5.3: CONTEXTUAL INFORMATION FOR SUB-UNIT 3

SUB-UNIT 3				
Business location	Kariobangi Market			
Duration of training	Since 2002			
Product and service type	Women's wear custom-clothing of all types: casual two piece skirt and pant suits and dresses for every day wear, from all fabrics types including African cotton print fabrics, school uniforms, alterations and repair work, corporate uniforms, bulk orders of any kind			
Total number of apprentices	10 (all F)			
Number interviewed	4 (A5/3, A6/3, A7/3 & A8/3)			
Particulars of interviewed participants	**Gender F/M**	**Age (years)**	**Education PS/SS**	**Training type / duration (months)**
Tailor (T3)	M	55	SS	FVT
Apprentice (A5/3)	F	25	SS	10
Apprentice (A6/3)	F	28	SS dropout	7
Apprentice (A7/3)	F	20	SS	3
Apprentice (A8/3)	F	24	PS	3

TABLE 5.4: CONTEXTUAL INFORMATION FOR SUB-UNIT 4

SUB-UNIT 4				
Business location	Kariobangi Market			
Duration of training	Since 1993			
Product and service type	Women's wear custom-clothing of all types: casual two piece skirt and pant suits and dresses for every day wear, from all fabrics types including African cotton print fabrics, school uniforms, alterations and repair work,, mini mass production (own ready-to-wear & retail orders)			
Total number of apprentices	10 (2 M & 8 F)			
Number interviewed	2 (A9/4 & A10/4)			
Particulars of interviewed participants	**Gender F/M**	**Age (years)**	**Education PS/SS**	**Training type / duration (months)**
Tailor (T4)	F	48	SS	TA
Apprentice (A9/4)	F	18	PS	14
Apprentice (A10/4)	F	21	PS	12

The contextual data (**TABLES: 5.1-5.4**) show that tailors across the sub-units engaged in almost similar tailoring activities. However, sub-units 3 and 4 had additional activities namely, production of corporate uniforms and mini-mass production respectively. The additional tailoring activities can be attributed to the tailors' long term experience of the trade, which translated to more business contacts. Evidence from informal discussions with the tailors showed that the tailor in sub-unit 3 had previously been employed by formal tailoring firms, which exposed him to more formal business contacts, particularly from the corporate organisations.

The FVT background seemed to put him at a notch higher than the other tailors in terms of recognition through formal certificate which is viewed as a mark of professional qualification. It is for this reason that Walther and Filipiak (2007) and Steenekamp and Singh (2012) argue for the need for formal recognition of informally acquired skills which enable individuals to earn a living.

The data displayed in (**TABLES 5.1-5.4**) further show that three out of the four tailors had attained Secondary School Education (SSE) while only one had Primary school Education (PSE). Similarly, three of the tailors were graduates of TAs while only one had FVT. However, there were more apprentices with PSE compared to those with SSE. The tailors reported that the majority of apprentices are graduates of PSE. Apprentices with SSE were reported to prefer other vocations to tailoring. Likewise, most of the apprentices who had SSE viewed TAs as sources of low skills and only landed there due to economic constraints. It can however be deduced that the technical nature of tailoring trade which requires literacy and numeracy skills accounts for the lack of illiterate participants in the study. The level of literacy, however, suggests that tailoring apprentices have the capacity to comprehend theoretical knowledge pertaining to clothing products and processes should such an opportunity arise.

The data further show that one of the apprentices (**A3/2**) had also been to FVT. However, her coming to a TA was necessitated by the need to enhance practical skills within the trade setting in preparation for self-employment as a custom-tailor. This further shows the importance of TAs to tailoring and garment manufacturing MSEs as well as to Kenyan youths who wish to work as tailors. The section that follows focuses on the main study findings.

5.2 THE MAIN FINDINGS OF THE COLLECTIVE SUB-CASES

Stake (2008:134) emphasises that case study researchers can assist readers in construction of knowledge through their experiential and contextual accounts of the studied phenomenon. Case study researchers rely on subjective data-testimony of the participants and judgement of the witnesses. Many critical observations and

interview data are subjective with major questions based on sensory experience. Answers come in the form of descriptions and interpretation, opinion and feeling, all mixed together. To make the empirical data objective and less subjective, the researcher used replication, falsification and triangulation of methods. In addition, good case study research follows disciplined practices of analysis and triangulation to tease out what deserves to be called experiential knowledge from what is opinion and preference. The researcher in the current study corroborated reported data from varied participant groups and settings with observation data where necessary to make sense of them before using these to back findings.

Following the provided guidelines, the main findings of the study are presented according to the themes derived from the sub-research questions and the study's conceptual framework. The participants' views, feelings and perceptions regarding the developed and undeveloped aspects of knowledge of clothing product quality and skills pertaining to the processes, the sources of knowledge and knowledge organisation strategies, teaching and learning techniques as well as any associated challenges are reported comprehensively in the order in which the themes are outlined as follows:

- Knowledge of clothing products and processes;
- Sources of knowledge and knowledge organisation techniques;
- Learning and guidance practices; and
- Challenges associated with TA in tailoring training;

5.2.1 Knowledge of clothing products and processes

Knowledge of clothing product quality and skills pertaining to garment making processes were explored and analysed based on the categories derived from the conceptual framework and related literature. Brown and Rice's (2001, 2014:69-70) clothing product quality theory and the literature on garment making processes formed the basis of classification and analysis of knowledge of clothing products and processes. Knowledge of the physical components of clothing products were explored and analysed based on the following categories:

- Design;

- Fabrics;
- Construction; and
- Finishing.

Similarly, knowledge of the performance features of clothing products were explored and analysed based on the categories of:

- Aesthetic performance features of garments; and
- Functional performance features of garments.

Finally, knowledge and skills pertaining to garment making processes were explored and analysed based on the categories of:

- Techniques of taking body measurements;
- Pattern-making and cutting techniques;
- Fabric selection, preparation and layout techniques; and
- Garment assembly and finishing processes.

5.2.1.1 Knowledge relating to design

Knowledge of design was explored and analysed based on evidence of:

- Engagement of tailors and their apprentices in design activities including creation of new/original designs;
- Participation of tailors and their apprentices in teaching and learning design principles and elements;
- Participation of tailors and their apprentices in the selection and application of elements of design in the creation of aesthetic garment designs;
- Participation of tailors and their apprentices in the analysis of customers' body shapes to guide the creation and selection of attractive garment designs; and
- The tailors and apprentices engaging in selection of design features which flatter their customers' figures.

The tailors and their apprentices across the sub-units were aware that design should contribute to a garment's attractiveness. They were also aware that design knowledge and skills are important in creating attractive garments. For this reason,

most apprentices reported that the main motivation for coming to TAs in tailoring was to be taught how to design beautiful garments to attract customers. The following are part of the evidence regarding apprentices' expectations about acquiring design knowledge and skills:

> *A2/1: ...I wanted to know how to produce various garment designs.*

> *A7/3: ...I love fashion so much. So I decided to pick tailoring so that I can be a bit creative on my own. So that I can learn more about design and come up with my own designs. It was more of a passion.*

However, evidence from participant observation across all sub-units further showed that apprentices lacked the opportunity to acquire design knowledge and skills. The tailors across the sub-cases hardly engaged in creation of original garment designs, and instead relied on copying of designs from photos, fashion charts and magazines. Fashion charts and magazines were cheaply obtained from hawkers who sold these across the markets. It appeared that the lack of design skills which enable creativity encouraged trade in externally created designs for tailors to copy. The researcher observed that whenever customers came along, the tailors would ask them to choose garment designs from the available sources. Alternatively, the tailors remained open to accept design suggestions from customers including copying of designs from existing garments brought along by customers. The following evidence demonstrates how the tailors carried out the design process with their customers:

> *T3: …When a customer comes along, we give them fashion charts and books to find suitable designs for themselves.*

The following information by apprentices from different sub-units further confirms that designs were copied from existing sources:

> *A1/1: We have fashion books which customers select designs from. When we go to the table, the teacher [tailor] shows us the customer's design that we should draft. So we obtain designs directly from the book.*

A5/3: We often look at what others are wearing and what appeals to us. We try to draw and then strategise on how to develop patterns for cutting. If we are lucky to get the garment then we copy it and try to produce patterns that can create a similar one. For designs on charts and design books, we try as much as possible to produce it as it is.

From the participants' voices, it is evident that apprentices were exposed to design copying, but hardly taught about design principles and their application to practise. An in-depth analysis revealed that lack of design creativity across the sub-cases, and failure of apprentices to acquire design knowledge was attributed to the tailors' lack of knowledge of design principles. This occurrence however, emanated from the training background. Most tailors were graduates of TAs and could only perpetuate what they knew, which was void of design knowledge.

The researcher further observed that the main mode of learning, which entailed observation, copying and imitation of on-going activities also constrained design learning. Since design creativity hardly occurred across the studied cases, apprentices had no opportunity to experience how designs are created, and instead learned how to copy and reproduce garment designs which the tailors consistently made. This, to a certain extent, accounts for the prevalence of similar garment and fashion designs across the markets.

The researcher further observed that the tailors' lack of design knowledge and skills contributed to difficulties in accomplishing orders which required creation of original designs. This further constrained tailors from providing effective guidance to apprentices regarding creation of original designs when called upon. The following evidence by an apprentice illustrates the challenges encountered by her and the tailor when tasked by a customer to come up with an original design suiting her aesthetic expectations:

A3/2: ...For the dress I went to buy its fabrics yesterday, I still don't know the design. That's why I am still asking her [trainer], 'what can we do … what we can do here?' The client has not given me any idea, but she has told me, 'I

don't want a garment that is not sleeved [off-shoulder]…and I want something good', so I have been referring to Emily and she is helping me and so far now we have got the design.

The tailors and apprentices were aware that design selection should be guided by the customers' figure types for attractive appearance and fit. The following evidence illustrates one of the tailors' voices on the use of body shape as a criterion for design selection:

T2: The body structure of the customer should relate well with the chosen design.

An apprentice also provided evidence regarding the use of body shape as a basis for design selection which is consistent with the tailor's view:

A2/1: They [customers] may come with a design in mind, but if it is not appropriate for their figure; I can help to replace that, or propose a suitable one.

However, all tailors and apprentices were not able to describe how they analysed customers' figure types and body shapes to inform design selection. Furthermore, they could not substantiate how they ensured that the selected designs suited their customers' figure types. Since there was no theoretical guidance, knowledge of design selection was guided by everyday knowledge, mainly the prevailing fashion or designs and the type of garments which customers desired.

The data showed that customers were mostly responsible for selection of their designs, while the tailors and their apprentices were responsible for transforming the selected designs into patterns for cutting components of the garments to be made. Pattern drafting and cutting therefore turned out to be the main design related activities performed by both tailors and their apprentices. The following response by an apprentice illustrates this:

A8/3: When a customer comes, I have to ask her about the design she wants. Once I know the design, the way to go about it becomes my own initiative.

From the data provided by the participants across the sub-cases as well as the researcher's observations, it is evident that the apprentices were unable to develop knowledge of design. It is, however, apparent from their struggles as well as in their reports that both tailors and apprentices require opportunity to develop design related knowledge and skills.

5.2.1.2 Knowledge relating to fabrics

The development of fabric related knowledge was explored and analysed based on evidence of the tailors' and their apprentices' awareness of fibre sources and fabric structure in terms of:

1. How fabrics are dyed, printed, and finished;
2. Techniques of testing fabrics for their origins and properties such as shrinkage and colour fastness;
3. Knowledge of fabric hand, texture and drape and their influence on design selection;
4. Aesthetic performance properties of fabrics and their effect on garment aesthetics; and
5. Functional performance properties of fabrics and their effect on the functional performance of garments.

The findings show that the apprentices hardly acquired knowledge of fibres, fabric structure, dyeing techniques, printing and finishing. The tailors and their apprentices also lacked knowledge of basic properties of fabrics and their testing procedures. The study further shows that the participants' awareness of fabric aesthetics was concrete and limited to their visual effects, focusing mainly on colour and to a limited extent weight. Similarly, knowledge of functional performance of fabrics also seemed limited to concrete aspects.

The majority of the tailors and their apprentices were aware that fabrics form an important part of the physical composition of garments. However, most participants were unaware of the need to learn about fabrics including what should be learned about fabrics. Instead, fabrics were viewed as a medium for garment making.

When tailors were asked to describe what they taught apprentices, none mentioned the teaching of fabric knowledge. Even when categorically asked whether they taught apprentices anything about fabrics, the responses suggested that fabric knowledge was hardly taught. One of the tailors responded as follows:

> *T4: It is not quite important to teach apprentices about materials, because they [materials] change with seasons; the ones we had last year are not the ones we have now.*

The response was a clear demonstration of lack of knowledge of fabrics and the reason for not teaching about fabrics. For example, ‘kitenge’-singular, ‘vitenge’-plural fabrics which predominate the Kenyan clothing market often change in pattern and colour, yet the fiber sources which underpin their performance properties has often remained consistent thereby qualifying the fabric’s trade mark.

Only one tailor was of the opinion that apprentices should be taught more on fabrics. The tailor argued that fabrics influence designs; therefore, apprentices should be able to ensure that fabrics are appropriate to the designs for which they are intended. The tailor further added that apprentices need to have knowledge of fabric quality to be able to guide their customers, who often have limited knowledge regarding designs which suit their fabrics. Respondent T2 had this to say:

> *Customers often bring their own fabrics and ask for specific designs to be made even when the fabric is not appropriate for the design. This is the tailor’s responsibility to detect and advise customers appropriately. So a tailor [apprentice] must be ready with knowledge that can help them curb such challenges. Even though customers bring their own fabrics, I always want my trainees to know the fabric quality to be able to advise them well.*

Despite the relevance of the response, respondent T2 still had limited fabric knowledge. Tailor T2 acquired knowledge experientially through TA, based on trial and error and lacked a theoretical basis. The tailor reported not having undergone any theoretical training to equip her with the relevant theory of fabrics. Furthermore, evidence of the manner in which the tailor used fabrics suggests that her knowledge of fabric weight, texture, and drape was actually limited. Moreover, the knowledge was not intentionally passed on to apprentices who only picked this up in bits through chance.

The researcher observed that apprentices and the tailors across the cases were mainly concerned with fabric aesthetics, particularly their formal features of colour and pattern. Most of the participants were aware that fabrics should be colourfast for garments to retain their visual aesthetic appeal. However, all tailors and their apprentices lacked knowledge on how to determine colourfastness in fabrics. Based on experience and customer complaints, most tailors and their apprentices were often puzzled about how to ascertain that fabrics used in garments would remain colourfast or not. However, the lack of theoretical instruction constrained the participants' ability to access knowledge of techniques of testing for colour fastness, which remained invisible to them. The following evidence by respondent T2 illustrates the need to ensure that fabrics used in a garment remain colourfast during care and use:

> *T2: With materials, it is good to know precisely how to judge their suitability for use. Sometimes a client may bring materials to be mixed in one design and the tailor should know whether the results will be successful, colourfast and if not then it is the responsibility of the tailor to inform a customer about the consequences and provide options.*

Fabric pattern was also viewed as a source of aesthetics. This can be utilised in a creative manner to enhance garment aesthetics. However, the participants' knowledge of fabric pattern was concrete, only meant to inform garment cutting processes, but pattern could not be used creatively to achieve visual illusion that

could improve aesthetic appeal in garment and of the customers, due to a lack of knowledge of design principles and elements. T3 had the following to share:

> *They [apprentices] must know about designs on 'vitenge'*[1] *fabrics* [fabric pattern] *and how to organise them in clothes to look nice. Some fabric patterns/designs are all over, facing all directions, while in certain fabrics the designs are ordered in some format, facing one direction. They must learn how to handle such differences in a way that the resulting garments can appear beautiful. So it depends a lot on the nature of fabric patterns you are dealing with.*

The elements of colour and pattern are visible and readily convey the fabrics' visual appeal to consumers. An awareness of these elements can easily emanate from complaints or concerns raised by customers. The researcher observed that through constant interaction with customers and the need to address their demands and preferences, the participants' awareness of the formal elements increased. Apart from colour and pattern, the participants seemed to be unaware of other elements which contribute to fabric aesthetics. Further examination of the elements which were not articulated shows that they entail aspects with low visual appeal.

With regards to functional performance characteristics of fabrics, the apprentices and the tailors identified fabric shrinkage as a major concern. Its effect on garment fit and comfort seemed to play a greater role in this regard. The problem of shrinkage was mainly associated with African cotton print that is locally known as 'Kitenge'. The high shrinkage performance characteristic of the fabric often resulted in complaints from customers regarding poor fit after washing the garments. The high rate of garment returns for adjustments caused the participants to develop concern over this property including how to solve the problem. The following evidence by one of the tailors illustrates this finding:

[1] The term 'Vitenge' – plural for 'kitenge' – singular refers to a Kiswahili word for an African cotton print fabric that is commonly used to make custom-made garments. Vitenge garments are rarely found in the ready-to-wear clothing category, which makes them popular among the custom-made garment category.

> *T3: Most 'vitenge' fabrics shrink, so I tell students that they must add one inch when designing which will provide room for fit after shrinkage. The customer in most cases cannot detect one inch allowance that is allowed for shrinkage so it is safe. However, should the customer realise this, then it is up to the tailor to convince them of its essence, and the fact that it is temporary.*

A similar response was provided by one of the apprentices from sub-case number 4 as follows:

> *A9/4: With 'vitenge' fabrics, the teacher simply tells us to make them bigger, and then we can tend to them later on. When customers come back to complain, we can reduce them.*

Despite being aware of the potential of fabric shrinkage, none of the participants knew the techniques for testing fabrics for shrinkage. Moreover, other than 'vitenge' fabrics, the participants lacked awareness of alternative fabrics with shrinkage potential. This means that any unfamiliar fabrics with potential shrinkage were hardly accorded treatment similar to that reserved for familiar fabrics. This further demonstrates the participants' limited fabric knowledge.

The participants' concern with shrinkage and colour fastness could be taken to demonstrate their concern for garment performance, especially during care. However, the researcher observed that the participants usually lined garments made of 'vitenge' fabrics with polyester lining, but without prior pre-shrinkage treatment. This showed the participants' limited knowledge on basic principles which underpin successful use of fabrics. The following observation by the researcher illustrates this:

> *Observation: In all cases, the tailors lined garments made of 'vitenge' fabrics with polyester lining and were unaware of the differences in shrinkage capacities of the fabrics. This affected the appearance of the finished garments, especially the set/smoothness after washing. In certain cases, the differences in shrinkage caused the lining to roll outwards along the garments' hemlines and neck lines and sleeve hems.*

The study, furthermore, revealed that the tailors and their apprentices were hardly concerned with fabric durability. This seemed to stem from the fact that most customers brought own fabrics for custom-made garments. Therefore, the tailors could not take blame for garment failure that is due to lack of fabric strength. The lack of customer complaints on this characteristic also tended to constrain the tailors and their apprentices from access to this aspect of knowledge. The lack of theoretical learning and dependence on locally available knowledge, therefore, seemed to play a role in fabric knowledge limitation.

In general, knowledge of fiber sources and their properties were completely inaccessible to apprentices. Moreover, the tailors' and apprentices' knowledge of fabrics was not only limited, but also incoherent, mainly informed by problems encountered during work and complaints raised by customers. These limitations emerged due to the work setting which tended to pay greater attention to practical and easily observable aspects of the work, as opposed to the invisible aspects of knowledge which requires theoretical instruction to be developed. The lack of knowledge of fabrics by the tailors as well as the weakness in the curriculum to emphasise the aspects of fabric knowledge, which needs to be learned also seemed to play a significant role in the apprentices' failure to develop knowledge of fabrics.

5.2.1.3 Knowledge relating to construction quality

Knowledge relating to construction was explored and analysed based on the testimony of the tailors and apprentices:

- Awareness of physical features of construction and their quality;
- Awareness of aesthetic performance features of construction;
- Awareness of functional performance features of construction;
- Ways to engineer and enhance performance quality features of construction;
- Participation in learning and producing quality features of construction; and
- Selection and use of appropriate construction features that enhance garment performance (thread strength and selection; stitch selection in terms of length and strength, stitch formation and evenness; seam evenness, width, neatening, elasticity, flexibility and edge finishing).

Evidence from the participant observation and interviews across the sub-cases revealed that tailors and apprentices were knowledgeable about construction quality features that impact on performance quality of garments. For example, participants knew that threads used in constructing garments impact on aesthetic and functional performance quality of construction and garments. The participants even made deliberate efforts to ensure that threads matched the colour of fabrics used, and only used different colours when specific aesthetic effects were desirable. The researcher additionally noted that none of the participants mentioned thread strength as an important aspect of construction quality. Instead, they focused more on the visual effects of thread in garment production. The following evidence by a tailor is consistent with the researcher's observation in this regard:

> *T2: All threads and related stuff including overlock thread must match the colour of the fabric.*

The participants also knew that accurately worked stitches, systematic pressing as construction processes progressed, provision of adequate seam allowance and overlocking of seams and edges result in neat and attractive construction, and in turn enhance the garment's attractiveness. The tailors and apprentices strived to cut any loose threads to enhance seam neatness and paid attention to stitch quality. They were aware that looped stitches from loose tension and puckered seams are unattractive and can easily result in grin or broken seams. The tailors examined construction processes as apprentices worked to help them improve on construction quality. The following reports by apprentices provide support:

> *A4/2: When stitching, observe that you work accurately, leaving correct allowances. The work must also be pressed as you work, step by step.*

> *A7/3: Observe how to put the material on the machine for stitching, like to get a straight stitch, use the guide. Know where there are mistakes like loops to adjust the tension.*

> *A9/4: As you stitch, press every stage before joining the next piece so that it turns out to be smart, or to look good. This is unlike those initial days when we*

would join it [garment] completely and when you take it to the teacher, you are told to undo and redo almost everything. And in certain cases, we were probably made to undo simply because we never pressed the work. So we have learned that pressing is good. It improves the work.

Quality construction/workmanship was viewed as important in attracting customers. Teaching apprentices how to produce quality workmanship such as neatening of seams and quality pressing to make the work attractive was therefore important. One of the tailors highlights this as follows:

T3: Workmanship is the pulling factor that helps to attract customers. Every garment made must be neatly overlocked and they (apprentices) must know this. Moreover, they must also learn the art of pressing to make the work attractive to the customer. It is only when the workmanship is good that you can have a constant flow of customers.

Knowledge of functional quality features of construction such as stitch length was reported as crucial to ease construction, durability of seams and quality of the garments. Both apprentices and tailors emphasised that stitch length should be determined by fabric weight and the type of work to ensure durability and suitability of the garment to use. The participants were aware of the customers' low regard for long stitches as they are less durable. The following reports by participants provide evidence of how to achieve functional and quality construction:

A5/3: We must observe that stitches are straight; they should be of reasonable length that even if you should unpick or reap, then there isn't so much strain that can cause a tear.

A8/3: There are stitches that should be used to join various fabrics. You have to choose according to the work that you are handling. You must be careful as you work stitches to avoid reaping them off. The work can tear and the customer may disapprove of the garment.

> *A9/4*: *With stitch selection, you have to know that some fabrics need fine ones and others medium. Customers get upset when you use long stitches; when they see such stitches on the work, they immediately hate it. So it is good to balance stitch selection.*

The researcher observed that knowledge of stitch selection was limited to length as the tailors only had basic straight stitch sewing machines. The participants also focused on basic open and-or lapped seams even when the fabrics in use required different seam types. This was not due to the type of sewing machines in use, but the tailors' limited knowledge of different seam types. Work approach as dictated by what customers wanted and/or affordability also played a role. These conditions constrained the apprentices' opportunity to practise various ways of using seams to fulfil aesthetic and functional performance requirements.

The use of basic straight stitch machines constrained attainment of seam elasticity, especially in stretch fabrics, and instead suffered seam puckering, skipped stitching and thread breaking in comparison to woven fabrics. It was apparent that the machines, needles, stitches and threads used were not suitable for stretch fabrics. Most participants seemed unaware of causes of the outlined construction problems, thereby confirmed limitation in knowledge of construction quality.

Participants only acquired observable aspects of knowledge of construction quality which can easily be developed to enhance practice. Customer complaints and everyday experiences through work and use of clothing products were responsible for the outcomes. It was also evident that what was not encountered during everyday work and living experiences was not learned. Furthermore, discussion on construction quality was limited to thread, stitching and pressing quality and hardly progressed to fastenings, trimmings, facings and hems despite the use of some of these elements. This further exposed limitation in knowledge of construction quality.

5.2.1.4 Knowledge of finishing quality

For this category, the tailors and their apprentices were expected to demonstrate:

- An awareness of the forms of garment finishing techniques ;
- An awareness of the performance characteristics of finishing features and their effect on garment performance; and
- Participation in production of quality finishing processes.

The findings across the sub-cases show that tailors' and apprentices' knowledge of finishing features was limited to inspecting the garments for any loose threads, snipping and final pressing of garments for smooth and neat appearance. Like construction, finishing was viewed as important to the garments' overall performance quality. The majority of participants were aware that poor finishing, for example, poor pressing translated into poor garment quality. Evidence by participant T2 reinforces the need for finishing and attributes of finishing quality follows:

> *T2: You may produce a very good piece of work, but if the finishing is poor, then that garment is automatically poor. … Ironing is also important and you need to have a good iron box. They must know how to do it well.*

Pressing was regarded as an important aspect of finishing for its contribution to attractive appearance in the finished garments. An apprentice provided the following evidence regarding pressing:

> *A2/1: Pressing makes the garment appear good, and if you do not do it, the garment cannot look good whatsoever. Pressing has to be done every time a seam is made and before joining the next piece. Some fabrics need to be pressed with water [steam], but not all.*

Evidence across sub-cases shows that the tailors pressed upon their apprentices to learn how to finish the garments which they made well. A tailor had this to say regarding finishing while assessing the quality of one of the apprentices' completed work:

> *T1: I was able to point out to her [apprentice] that she is not yet good at pressing; most parts of the trouser are creased. I also made her see that her finishing is not yet of good standard. The garment is complete but not neat at all.*

The development of knowledge of finishing quality (pressing) was partly facilitated by demands from customers. Customers examined the garment to see whether they were well-finished and neatly pressed or not. The following evidence by one of the apprentices illustrates this:

> *A5/3*: *Some fabrics can be difficult to press. They develop shiny marks while some tend to scotch. Some customers are difficult; the appearance of any of such marks alone is enough to make them reject the garment. This calls for being overly cautious when pressing. We have to use damp pressing cloths to protect the fabric and to make the outcome really neat.*

Like construction, learning about quality features of finishing was facilitated by their practical nature, ease of observation and perfection through enhanced practice. A careful examination of the aspects of finishing features that participants were aware of shows that these were limited to three elements (snipping of loose threads, pressing and overlocking). This further illustrates the level of knowledge limitation in this regard.

5.2.1.5 Knowledge of aesthetic performance of garments

For this category, the tailors and apprentices were expected to demonstrate understanding of garment aesthetics by:

- Describing ways in which design (fashion, style and fit), fabrics, construction and finishing contribute to the garment's aesthetic appeal;
- Making use of elements from physical features to design and produce aesthetically appealing garments;
- Application of knowledge of design principles in the organisation of elements of design to create aesthetically appealing clothing products; and

- Illustrating the various ways in which knowledge of physical features are used to create aesthetic garments. Much of this latter part has been extensively explored in sections 5.2.1.1-5.2.1.4.

Both tailors and apprentices were aware that garments should be aesthetically appealing. They were equally aware that physical features which form the garment should contribute to the visual and tactile appeal. The need to produce fashionable designs for example, was a concern to all. Evidences within the settings show that almost every tailor bought fashion charts and magazines featuring prevailing fashion designs, to ease the process of design selection among customers. Similarly, they retained samples of trending fabrics to show and suggest to customers who needed to update their wardrobes. Since the tailors could not produce own designs, they used these measures to entice and win customers over to the business. The following evidence by a tailor illustrates this:

> *T2: Always know the new fabrics in the market. It is good to let customers know what is new in the market as this may prompt them to want to place new orders. Try to keep samples for them to see.*

Participants were aware that garment aesthetics is a subjective issue. For example, they reported that the customers' fashion preferences should be respected for the garments to appeal to them. Most participants felt that pattern making skills would enable them to produce designs selected by customers instead of reverting to familiar options due to skills inadequacy. The participants were also aware of their limitations in pattern making skills. The following evidences illustrate these views:

> *A3/2: If a customer comes to you with a garment, don't tell her 'I wish this garment was done this way.' If she wants her garment to be like this, don't explain to her another design she doesn't want; do what she has asked you to do.*

> *A9/4: On my part, designs keep coming all the times, and even when I am out of this training in future they will keep coming, so my fear is whether I will stick with the ones I already know or how will I handle the situation?*

The participants also demonstrated the various ways in which fabrics, construction and finishing contributed to garment aesthetics. These including associated knowledge limitations have been described in-depth in sections 5.2.1.2 to 5.2.1.4.

5.2.1.6 Knowledge of functional performance of garments

For this category, the participants were expected to demonstrate awareness of how physical features interact to bring about garments which can fulfil utility and durability expectations. Evidence relating to the development of knowledge of functional performance of garments was explored and analysed based on the tailors' and apprentices' awareness thereof:

- Utility factors such as fit, comfort, ease of care, ability to function appropriately for the intended use and how these can be attained; and
- Durability factors such as ensuring that materials and fabrics which are used in garments have equal serviceability and should resist shrinkage; integrity/reliability of construction (seams and buttons remain intact). And features such as zippers or openings should remain reliable. Fabric colour, fit, style, and fashion must remain durable and usable.

Fit: Tailors and apprentices were aware that garments should fit customers well for comfort and effective use. Their knowledge of fit seemed relevant as they associated well fitting garments with ease of movement, for example, bending and moving freely without any restriction. The participants were also keen in providing the customers' preferred garment fit (loose/fitted; long/short). The need to produce garments that fit caused tailors to ensure that apprentices made own garments and evaluated these together with them to enhance understanding of the concept. Likewise, customers also fitted their garments during collection and only took them if they fitted well. The following evidence by one of the tailors illustrates how he taught apprentices the concept of fit:

> *T1: …they [apprentices] must fit them [garments], I always ask them to make items based on their sizes. That is what I did to Mary when she made the trouser and I asked her to try fitting it. She was able to identify areas that had*

issues like the length which was rather short. It did not come out as she wanted it to be. That is a learning session to her.

Tailors and apprentices were also aware of certain factors which may cause poor fit in garments, and tried to address these accordingly to ensure good fit. For example, it was reported that poor fit may result from inaccurate body measurements, inadequate pattern drafting skills, problems emanating from fabric characteristics of shrinkage, stretch and slipperiness. Stretch and slipperiness were reported as having the potential to present problems during layout, cutting and sewing. Mistakes due to cutting such as inadequate and/or irregular seam allowances, and construction related problems such as irregular stitching were identified as possible sources of poor fit. The researcher also observed that apprentices consistently fitted their garments as construction progressed to ensure that the garments fitted them well. They reported that consistent fitting and evaluation of garments during construction helped to inform about any necessary adjustments and ensured good fit. The following responses illustrate some of the aspects of knowledge of fit that apprentices seemingly learned:

A2/1: *Some fabrics are very slippery and difficult to handle; they can easily result in wrong measurements as you try to cut them. So in handling such fabrics you need to be very careful. I have also learned that stretch materials must be cut a little smaller than the actual body measurements.*

A3/2: …I have tried it [pattern drafting] several times, but it ends in the garment not fitting this person well, sometimes the garment is too tight for that person or it's too baggy.

Fit is practical, can easily be evaluated and predetermined based on design, customer preference and fabric characteristics. Continuous interaction with participants over their fit needs as well as through use of varied fabrics and their behaviour during use and care provided opportunity to learn about fit. The need to ensure that customers were able to use the garments contributed to the development of knowledge regarding fit. However, use of objective measures such as testing of fabrics for shrinkage and preshrinking remained obscure to all.

Similarly, issues relating to grain and making of toile to pre-evaluate fit before cutting the main garment fabric were not done. Fit was mostly based on trial and error including re-adjustment of the assembled work.

End use: The participants' knowledge of a garment's end use seemed rather limited. The researcher observed that tailors and apprentices strived to produce designs which the customers asked for, irrespective of inappropriateness of some designs to the wearers. Little girls' dresses, for example, tended to be inappropriate for their age, constraining ease of movement and ability to play. The following observation noted by the researcher illustrates this:

> *Researcher: Tailors made long, straight fitted skirts, fitted and none-elasticised waist bands in none-stretch fabrics for little girls (5-10 years) in accordance with the mothers' requests despite their inappropriateness to the users. This suggests that needs of little girls as end users, for example, play, mobility and comfort were not understood by the participants involved.*

This evidence suggests that knowledge of garment end-use and of the end users' performance was not integrated properly. The lack of knowledge of principles underlying design selection was quite obvious.

Ease of care: The need for garments to remain colourfast during use and care and to resist shrinkage was recurrent in the participants' conversations. However, they lacked knowledge of techniques of testing fabrics for these properties. These demonstrated the lack of knowledge regarding ease of care. See section (5.2.1.2) for evidences relating to knowledge of fabrics and their influence on functional performance of garments.

Durability: Concerns for durability were mainly reported in terms of construction. Stitch quality, mainly length, formation of loops, broken stitches and over reaping of seams due to mistakes made during sewing (i.e., crooked stitching) were reported as threats to garment durability. Thread and fabric quality were however not associated with durability. Other than construction related factors, no other features were

associated with garment durability. It was evident that all aspects of knowledge that apprentices acquired linked directly to what they experienced practically and-or gathered from customers. These sources were however limited as the scope of activities was rather small and not all customers raised complaints mostly due to lack of knowledge.

5.2.1.7 Knowledge and skills pertaining to garment making processes

Knowledge and skills pertaining to garment making processes were explored and analysed based on the following sub-categories:

- Techniques on how to take body measurements;
- Techniques of pattern-making;
- Techniques of fabric preparation, layout and cutting; and
- Garment assembly and finishing processes.

Techniques on how to take body measurements

The development of knowledge and skills relating to taking of body measurements were explored and analysed based on:

- Tailors teaching apprentices how to take body measurements;
- Apprentices participating in learning how to take body measurements; and
- Tailors and apprentices awareness of the need to obtain accurate body measurements.

Apprentices across the sub-cases learned how to take body measurements. All tailors took body measurements from customers and used the same to create patterns for cutting the ordered garments. Apprentices not only had a chance to observe how the tailors took body measurements, but also practised the same among themselves. The tailors showed apprentices how to read the tape measure, identify the body parts to measure depending on the garment types being made, and practically demonstrated how to take and record body measurements. Tailors made it clear to apprentices that body measurements should be accurate. This helped to

ensure good fit in garments and attractive appearance on customers. The following report by an apprentice illustrates how they learned to take body measurements:

> *A5/3: He would ask me to take measurements when one of us wants to make something. As I take the measurements, he is looking, telling me how to place the tape measure, where to place it and so on. He also showed me the half, quarter and full inch marks on the tape measure.*

The following reports by a tailor and an apprentice emphasise the importance of obtaining accurate body measurements from customers:

> *T2: Body measurements should be accurate. It's for you not to repeat the same job, because for sure you will repeat it if you obtain wrong measurements.*

> *A2/1: We learn how to take measurements correctly to be able to apply them well in pattern drafting so that the designs can come out well.*

Taking of body measurements is a practical and observable activity. The practical nature of activities fostered learning of these skills. Extensive practice within the work setting also helped apprentices to perfect skills regarding accuracy of taking body measurements. The following evidence by an apprentice illustrates the effectiveness of extensive practice in perfecting the skills:

> *A6/3: Well I am ok with it now but earlier on I had issues with taking the bodice [shoulder to waist measurement] and shoulder measurements. The bodice, I could not just manage correctly as it was at times too short and at times too long, you know. Moreover, the shoulder could also be too short or drooping. However with practice, this is now sorted out.*

Knowledge and skills pertaining to pattern making

Knowledge and skills pertaining to pattern making was explored and analysed based on evidence of tailors and apprentices engaging in:

- Teaching and learning various pattern making approaches to produce patterns for cutting varied garment designs; and
- Interpretation of garment design concepts and transforming them into patterns that reflect the customers' preferred design/style and fit.

Apprentices across the sub-cases were not taught theoretical principles which underpin pattern making. Learning pattern making skills was purely practical, with apprentices observing and practising what the tailors did. This occurred whenever the tailors or any of the apprentices had any work to cut. Customers' orders and the apprentices' own clothing or clothing of family members, which consisted of different garment types (skirts, blouses, dresses, pants and casual coats) and designs, provided apprentices with the opportunity to learn drafting skills.

The tailors used body measurements from customers and apprentices, to teach apprentices how to draft patterns for individual fit. Pattern drafting was very important to both tailors and apprentices as the only aspect of designing that the participants learned. Teaching, learning and practising pattern drafting were therefore, allocated more time than other aspects of knowledge and skills. The following response by one of the tailors illustrates how pattern drafting skills were taught:

> *T4: When I go to the table, I brief them [apprentices] about the measurements, take them through the calculations, do the draft, and show them how to create allowances and darts. When drafting eight piece skirts, I show them [apprentices] how to divide and create the patterns and cut. I let them know how each one of them is going to carry out the same procedures on drafting paper.*

Similarly, an apprentice from another sub-case confirmed participating in learning pattern drafting as per the following evidence:

> *A1/1: Whenever a customer brings any work, I watch as he [tailor] takes measurements, then I go with him to the table, to learn how he 'draws' [drafts] the work for cutting. After that he asks me to buy brown paper and draw what he had drawn.*

Although tailors taught apprentices how to draft patterns for cutting various garment designs, patterns were drafted directly on the main garment fabric. This approach tended to restrict learning to basic designs. Tailors had limited knowledge of pattern drafting skills and communicating the same to apprentices tended to be a challenge too. For example, the researcher observed that most tailors did not know that princess lines are style lines with darts for shaping the waist line and the bust. As such, they simply copied the design feature by cutting and sewing through a straight line, but without darts. This resulted in garments with poor fit due to lack of incorporation of darts. Similarly, graining techniques and issues relating to precision and balance were hardly observed. Estimates, imitation and trial and error dominated the drafting and cutting practice.

Fabric preparation and layout techniques

Evidence was sought regarding tailors engaging apprentices in learning various techniques of fabric preparation (graining of fabrics, testing for shrinkage and colour fastness, preshrinking where necessary, examining fabrics for any flaws, pressing, examining fabric pattern to inform lay planning and cutting processes).

Evidence across the sub-cases confirmed that apprentices learned techniques of fabric preparation which inform layout and cutting. The majority of participants referred to these skills as fabric knowledge. Fabric preparation and layout techniques which were reported and observed as learned by apprentices include: ascertaining that the quantity of fabric which customers brought along was sufficient for producing the ordered work, examining the fabrics for any flaws and ensuring that none is included in the cut work, observing fabric pattern to ensure proper layout, possible fabric saving strategies, and pressing of creases/folds on fabrics before layout. The reason for taking part in all these activities was to provide flawless and quality work

in the long run. The following information shared by a tailor confirms part of the researcher's observations as reported:

> *T3: When making eight and six piece skirts respectively, they [apprentices] learn that certain fabrics, especially the ones with one way design cannot be used as the amount of fabric to be used would be too much, yet customers bring limited amounts of fabrics. Students must know this to be able to advise customers accordingly. Six and eight piece skirts would be suitably cut on all over design fabrics which allow for pattern rotation in layout planning so that fabric is not wasted.*

An apprentice also provided evidence relating to the researcher's observation as follows:

> *A3/2: When preparing to cut, the first thing you should do, is see if the fabric has any faults. If it doesn't have any fault, you iron before you apply the marker. After you have ironed, apply the marker and then you cut.*

The researcher observed that no tailor engaged in testing fabrics for shrinkage and colour fastness, yet these were their main concerns. Graining of fabrics was also not done. It was evident that none of the tailors were aware of these techniques and therefore could not teach apprentices.

Garment assembly and finishing processes

The development of knowledge and skills relating to garment assembly and finishing processes was explored and analysed based on evidence of the following:

- Apprentices engaged in learning garment assembly and finishing processes such as sewing by hand and machine, assembly of various garment parts and types, in-pressing of seams, selection of threads, stitches and trims to use, neatening/finishing of garment edges and seams, attaching zips, buttons and other notions); and

- Demonstration of knowledge of quality attributes of garment assembly and finishing processes by tailors and apprentices through quality of work.

The researcher observed that garment assembly and finishing processes were part of core learning activities across the sub-cases. The garment assembly and finishing processes which apprentices learned include: selection of threads and stitch length for the fabrics used, checking and setting of tension accordingly, joining various components into complete garments, finishing edges such as hems, necklines, openings and seams; inserting zips and fastenings (mainly buttons); controlling fullness; and application of stiffening materials; use of limited trims (mainly bias binding, lace and piping cords); in-pressing of seams during construction, and final finishing of complete garments.

Apprentices learned how to use sewing machines by practising on scraps of fabrics from cut work, performed repair work and assembled whole garments specifically cut to enable them undergo full garment assembly processes. Through progressive guidance by tailors and among themselves, apprentices enhanced practising of routine practical activities and paying attention to customers' demands, apprentices also improved on garment assembly and finishing skills. This further helped to improve upon knowledge of construction and finishing quality. The following report confirms how apprentices learned garment assembly processes:

> *A1/1: When I was through with brown paper [pattern making], he [tailor] began to show me how to join the pieces to complete the garment. He then asked me to buy some cheap fabric to cut and try to put together the garment parts while he corrects me whenever I go wrong.*

Apprentices from different sub-cases further confirmed participation in learning garment assembly processes as follows:

> *A7/3: I've learned to make a skirt, I can sew a dress, I can also make a blouse. It's just your speed and interest in learning that determine how much*

you learn. The first thing I learned was to make a simple straight skirt. Next was a school uniform shirt.

A10/4: We make suits, 'vitenge' and uniforms, all of which are women's wear. We first began with children's dresses, for about 3-4-year-olds. This came after we had been taught how to use the sewing machine. We mainly learned how to treadle the machine, so that we could join the dresses. We learned to clean and oiling it, to check its settings, and to test it before you begin working with it.

While learning how to sew, apprentices realised that knit fabrics were difficult to work on, often resulting in skipped stitches which appeared weak and untidy. The following comment illustrates a participants' view on skipped stitches:

A3/2: The fabric of the garment that I'm wearing right now, was kind of hard to stitch using one of the machines, so it skipped, so you find that after you have completed the garment the seams are not good… thread skipped.

All participants shared the view that overlocking improves the quality of the finished work. However, one of the apprentices reported that overlocking helped to improve the appearance of irregular and/or crookedly worked seams, thereby demonstrating a limitation in knowledge of sewing and finishing skills to the visual aspects of the work. The report further confirmed the lack of knowledge of the effects of irregular seam construction on the fit and appearance of the garment when worn. A number of apprentices attributed the value of overlocking to aesthetic aspects, as clear from the following evidence:

A8/3: If you happened to have created irregular seam widths; you can make them even by overlocking thereby improving the appearance from inside.

Work setting could facilitate the development of practical skills relating to garment assembly and finishing processes. These processes constitute part of routine tailoring activities performed by tailors, and can easily be learned through

observation, enhanced practice and minimal guidance. It was however, evident from participant reports and their way of working that knowledge of principles which underpin garment assembly and finishing processes were hardly developed.

5.2.2 Sources of knowledge and knowledge organisation

Curriculum theory formed the basis for exploration and analysis of curriculum practices in TAs in tailoring. Tyler's (1949) approach to curriculum is instrumental in exploring and analysing the curriculum for TAs in tailoring, particularly understanding how learning activities in TAs in tailoring come about. This theme was explored and analysed based on the following categories:

- The tailors' motives behind engaging in TAs in tailoring (objectives);
- The sources of knowledge and-or learning activities; and
- Selection and organisation of learning activities.

5.2.2.1 Tailors' and apprentices' motives for engaging in TAs in tailoring

It was important to establish why the tailors chose to engage in TAs in tailoring. The tailors were asked why they chose to engage in training instead of simply focusing on custom-tailoring and other trade related activities to earn a living. All tailors concurred that the need to enhance low income earned from custom-tailoring businesses caused them to engage in TAs in tailoring. The tailors and apprentices confirmed that apprentices paid fees to be trained. Training fees were an important source of income for tailors, especially during seasons when customers' orders were limited. This was confirmed by a tailor who responded as follows:

> *T1: The reason is poverty. We handle both tailoring and training as a way of supplementing our incomes, especially during those times when customers are scarce.*

Apart from the goal which apparently had no educational interest, TAs in tailoring lacked support from government policy and/or any developmental agency as is always the case in formal education and training. The curriculum for TAs in tailoring

was therefore not based on research and lacked educational objectives. This apparently impacted on knowledge, which was limited to customers' orders and tailors' experiences and work orientation. On the contrary, apprentices viewed TAs in tailoring as an opportunity to acquire skills for employment within tailoring and garment manufacturing sub-sector. They had high expectations of the training in terms of knowledge and skills, some of which turned out to be unfulfilled.

5.2.2.2 Sources of knowledge/learning activities

Tailors stated that their main concern was to teach apprentices what the customers asked for, and therefore, what is saleable. Trade activities therefore formed the basis of learning activities. One of the tailors said:

> *T4: Our main focus is to teach them about the things that customers ask for and not anything outside that. We focus on teaching about what is saleable.*

Although the curriculum decision could have been influenced by TAs which the majority of the tailors attended, this was not the sole determining factor, since a tailor from a FVT background also adopted a similar approach. This further confirmed that enhancement of income was the overriding goal for participation in TAs in tailoring. A formally trained tailor posited:

> *T3: As we teach, we inform them [apprentices] that what the market wants is what we provide. So we relate our designs with what is prevalent in the market as that is what the customer will always ask for. So in most cases we tend to provide [teach] the customer's choice.*

The researcher observed that depending on customers' orders as a source of knowledge was insufficient and restrictive to a certain extent as highlighted in the next category.

5.2.2.3 Selection and organisation of knowledge/learning activities

The tailors were asked to provide a plan showing the set of learning activities and/or describe how they selected and organised what they taught apprentices. The findings across the cases revealed that there was no pre-planned set of learning activities for apprentices. Instead, what to teach apprentices was derived directly from any available orders which the tailors worked on. Evidence by one of the tailors regarding this is as follows:

> *T2: You know what I am doing now is just my own opinion; I don't have any planned curriculum.*

The findings further revealed that there were no prior preparations regarding what was taught and learned. Instead, the orders to be accomplished per day defined what the tailors taught apprentices. One of the tailors said:

> *T1: At the table where teaching [drafting and cutting] occurs, the subject [activity] under discussion is often the customer's work, meaning that I still work for the customer even when I am teaching. The two run concurrently.*

The following report by one of the apprentices is consistent with the tailor's response in this regard:

> *A1/1: Whenever a customer brings any work, I watch as the trainer takes measurements, then I go with him to the table, to learn how he draws [draft] the work for cutting. After that he asks me to buy brown paper and to draw what he has been drawing.*

Relying on customers' orders as a source of knowledge, a basis for teaching and learning posed the challenge of limited knowledge. Apprentices could only acquire skills pertaining to practical processes performed by tailors and specifically what customers asked for. This implies that apprentices could hardly learn anything outside this scope regardless of how important the knowledge may be. This partly explains the limited scope of knowledge of clothing products as reported in section 5.2.1.

The curriculum in use may also explain why apprentices developed skills pertaining to garment making processes in terms of techniques of taking body measurements, pattern making, fabric preparation for layout and cutting as well as garment assembly and finishing processes which are easily observable and practical in nature. It is also for the same reason that apprentices were unable to practice and/or learn design skills as these were not part of routine tailoring activities. This further explains why the tailors could not teach apprentices about fabrics and invisible aspects of knowledge of clothing product quality which tend to remain hidden.

Some participants were of the view that apprentices not only developed limited, but also basic knowledge. A tailor from a FVT background perceived what he taught apprentices as basic and summarised the same as follows:

> *T3: Well, what we teach here is basic knowledge, it is third grade. I teach them about garment cutting, or in short, the cutting formula. It includes drafting of patterns, measurements and how to maintain and operate the sewing machine. At the end of it all, they [apprentices] can make skirts, blouses and dresses.*

5.2.3 Techniques of teaching/learning and guidance

The theme on techniques of teaching/learning and guidance was explored and analysed based on the following categories:

- Learning through observation, imitation and trial and error; and
- Learning through instruction (theoretical learning).

The study established that no theoretical learning occurred within any of the sub-cases. The general mode of learning entailed observation, imitation and trial and error with minimal guidance. By observing and practising activities performed by tailors, apprentices acquired practical skills pertaining to garment making processes and limited aspects of knowledge of construction and finishing quality (see 5.2.1). The tailors based guidance on skills and knowledge derived from experiences accumulated overtime. Guidance entailed instructions on how to perform practical

tasks, which some participants referred to as theory. One of the tailors described techniques of teaching, guidance and learning as follows:

> *T3: Here we are more practical knowledge oriented than theoretically inclined. We cover theory [steps] at the table just when we are teaching them the practical aspects of drafting and cutting. Just during drafting and cutting, that's when we cover any theory as we move along. What you tell them theoretically they do practically.*

Similarly, one of the apprentices described learning techniques as follows:

> *A1/1: This work I do practically, I do it today, tomorrow and so on and on. Yes, I watch him doing what he asks me to observe, and when he is done with it, I do the same, and he is there to correct me whenever I do it incorrectly.*

The researcher observed that these techniques of teaching and learning were characterised by certain limitations, which led to limited knowledge and skills. Some apprentices also perceived the mode of teaching and learning as ineffective in learning certain aspects of knowledge. Likewise some tailors were also concerned about behavioural outcomes of apprentices which seemed to relate to teaching and learning techniques. Some of the limitations are discussed in the section that follows.

5.2.3.1 Limitations of learning through observation and practice

Limited scope

Evidence from the study revealed that teaching and learning only focused on practical activities. This caused apprentices to miss opportunity to learn theoretical aspects of knowledge which are basically conceptual and invisible. Findings show that a great proportion of knowledge of clothing product quality and principles which underpin clothing production processes were not learned. According to apprentices with secondary school education, the limited scope of the acquired knowledge and skills was attributed to the teaching and learning techniques. One of the apprentices

reported that knowledge acquired from TAs in tailoring is not necessarily the best due to lack of theory that underpins practical skills and knowledge of design and fabrics as these are crucial to success in tailoring trade. The need for the curriculum to go beyond routine practical skills was evident in several reports from apprentices. The following report illustrates the apprentice's in-depth analysis of the limitations of the scope of the curriculum:

> *A7/3: I think the learning is good, but I won't say it's the biggest quality you can get. The trainer is giving me his skills based on much of what he has done. He is giving me experience, yeah? But if I compare myself with someone in college, they are given too much theory. We have two girls who are in college; they are doing fashion design. They had been taught theory work, fabric, how to accessorise and how to design. As we talk, they tell me, 'There we do so much of sketching work'. You find them complaining that they did a lot of paper work and so they wanted to do things using the material…the real thing. So, as I compared them and me, they must have something extra that I don't have.*

Inability to understand

Learning through observation and practice hardly enabled apprentices to understand why things were done in a certain manner. The majority of apprentices particularly expressed the need to understand pattern drafting and not simply instruction on the steps to follow. The following evidence by an apprentice highlights the challenge of lack of understanding, which was viewed as a major obstacle in learning pattern drafting:

> *A1/1: At times it turns out to be really difficult, for example, he can add half an inch [measurement], yet you don't even understand why the half is added. Since you don't understand, you just have to put it down as this is the only way to remind yourself of what was done. Yes, this learning can be a challenge.*

Unfortunately, tailors lacked knowledge of principles of pattern drafting which is necessary for explaining why specific actions should be taken. Instruction apprentices on the steps to follow remained the only option for tailors to guide apprentices. This led to rampant forgetfulness among apprentices.

Forgetfulness

Tailors and apprentices cited forgetfulness as a major challenge, particularly in learning pattern drafting. The researcher noted that forgetfulness mainly occurred when activities did not receive sufficient experience to warrant reproduction of procedures. The lack of written instructions also reinforced rampant forgetfulness. Some apprentices reported that procedures in pattern drafting are too numerous to be remembered off head. To foster effective practice, some apprentices resorted to jotting down points to enable them to remember the steps to follow. These occurrences suggest that acquisition of adequate knowledge of clothing products and processes based on observation and practice alone may not be possible. One of the tailors had this to say regarding recurring forgetfulness among apprentices:

> *T1: One funny thing is that I can teach them and have them draft and cut a garment successfully, even on two occasions, but after a week or so, when you ask some of them to perform the same task, you are shocked to discover that it is completely forgotten. That is the main problem here.*

One of the apprentices had this to say regarding the need to have written instructions:

> *A7/3: Notes are important because when he shows you the first time that's when most of the times you take the notes. You need to remember because you can't cram all the things, you need to remember sometimes yeah! Like for example, if I have to put in a dart, I am unsure of how many inches wide and long to take into account. Those are the things I try to build on. I note them down so when I am doing it on my own I can take my notes and do that on my own.*

The above-mentioned responses suggest that teaching and learning techniques hardly caused apprentices to acquire understanding, yet this is crucial in development of transferable knowledge. This may explain why tailors and apprentices were hardly enthusiastic at attempting to draft patterns for garment designs which seemed completely new. The limited knowledge of pattern drafting may also explain the prevalence of similar clothing designs across the different markets and sub-cases which participated in the study.

The study established that all tailors except one had a TA training background. The training background and learning setting (tailoring environment) seemed to influence teaching and learning techniques, which in turn impacted on the outcomes (practical skills). The training background also seemed responsible for the tailors' lack of theory that underpins the trade. This further reinforced a focus on practical and observation-based learning techniques and the associated outcomes.

5.2.4 Other challenges associated with curriculum practices for TAs in tailoring

Apart from challenges stemming from the curriculum in use (sources of knowledge) and techniques of teaching, guidance and learning, certain contextual factors were also noted to impact on the outcomes. Some of these factors include:

- Limited knowledge and skills of the trade and lack of pedagogical skills among tailors;
- The apprentices' education; and
- Limited and inappropriate learning resources.

5.2.4.1 Limited knowledge and skills of the trade and lack of pedagogical skills among tailors

It was evident throughout the analysis of the main themes namely: knowledge and skills, sources of knowledge and techniques of teaching and learning that limited knowledge and skills of the trade among tailors and lack of skills on how to train played a significant role in the development of basic and limited knowledge and skills

among apprentices. The findings show that tailors from TAs and the one from FVT were deficient in knowledge relating to design and fabrics as well as in functional and performance qualities of clothing products. Likewise, none of the tailors had attended any pedagogical skills training and therefore solely depended on their trade skills to train. Evidences on this sub-category are distributed in the above sections of the analysed work.

5.2.4.2 Apprentices' education and tailors' lack of training skills

The data show that most of the apprentices had primary school education (see **Tables 5.1 - 5.4)**. This to a certain extent impacted on the apprentices' ability to learn pattern drafting skills. Difficulties in computing basic mathematical problems applicable to pattern drafting as well as understanding of the processes were evident among apprentices with primary school education. Some tailors advanced the following comments in relation to this:

> T2: *Now there are small calculations to be done, and it is not easy for some. If I realise that your education is poor, I simplify the teaching even further.*
>
> *T4: They [apprentices] find maths difficult, but they have to do it. It is a big problem but there is no choice. For measurements we use the metre and the inch.*

The study also established that none of the tailors had any formal training in pedagogical skills. This to a certain extent may explain the tailors' lack of attempting to organise the available tailoring activities effective, to foster acquisition of optimum knowledge and skills from on-going activities. Tailoring context could have been the ideal place to develop adequate practical skills if the tailors had skills to identify relevant learning opportunities and implement effective learning strategies. It is also most likely that the lack of skills on how to train contributed to the lack of effective teaching techniques needed to foster effective learning and understanding among the apprentices.

5.2.4.3 Limited and inappropriate learning resources

The study revealed that the tailors and their apprentices were economically disadvantaged. As such, they lacked the capacity to afford appropriate and adequate learning resources. Resources needed to facilitate learning of practical skills such as fabrics, varied types of sewing machines, tools and sewing notions were not only scarce, but some important ones unavailable, of poor quality and-or in poor working condition. Similarly, the learning setting, including working space was too small and highly congested in all the sub-units. These factors collectively tended to affect the quality of learning and outcomes.

It was also evident that each sub-unit had more apprentices than the resources including space could support. The fact that all tailors complained about scarcity of important equipment such as machines and work space, yet enrolled large numbers of apprentices further confirmed the concern for enhanced income and not quality of skills training. More apprentices would translate into more income from training fees. The following evidence on resources in general confirms the researcher's observations. A tailor had this to say regarding scarcity of fabric:

> T3: *The biggest challenge concerns acquisition of fabrics for practical work. Most of these trainees are poor and it is hard to raise money to buy fabrics. In most cases, the practical aspect of learning is what works for them and when they do not have fabric to use then it simply means no learning.*

An apprentice provided a similar response to that of the tailor regarding scarcity of fabrics:

> *A5/3: I would say that fabric has been a big issue. The lack of fabric sometimes dictates that you can only sit and watch others do as you look to the day when you are able to buy. The teacher is always ready to teach you how to cut (draft & cut) as soon as you avail the fabric.*

The researcher also observed that fabrics used in practising tailoring were also inappropriate, mainly bed sheets obtained from the second-hand 'open–air' markets.

The use of bed sheets could not provide apprentices with the opportunity to learn effective fabric selection for the garment types and designs, techniques of fabric preparation and lay planning. An apprentice had this to say regarding challenges of fabric acquisition:

> *A7/3: So far my biggest challenge is just access to fabrics, because the prices are really high plus I'm not financially able. Actually, the first fabrics we bought we went to this slum over here, Korogocho, they sell the sheets. Those are the things we used to sew first time. They are quite cheap and we can afford them. Plus the piece is quite big, you find in a piece I removed more than four skirts and even shared with somebody who did not have. So fabric is my biggest challenge.*

Scarcity of sewing machines was also reported by all tailors and apprentices. One of the apprentices had this to say regarding scarcity of sewing machines:

> *A8/3: Well, they* [machines] *are not enough. Because we are many, we have to work in turns, so in certain cases some have to wait as others sew. With many machines, one per person, it becomes easy to know this work. You are able to put the cut work together very fast and then move to the next*

Another apprentice laid emphasis on the crisis of space as a result of large numbers of apprentices as follows:

> *A9/4: You see out there in the veranda, some learn there right on the ground without tables or chairs, then those who seem to be knowledgeable have a newcomer who observes what they are doing even if it is stitching. So we just have to learn to manage ourselves.*

The following observations by the researcher are consistent with the reports provided by the participants. Ten apprentices using two sewing machines in a space of (2m by 3m) in sub-cases 3 and 4 were observable. While some apprentices use the sewing machines, others just sit and wait for their turn to sew when the work is

done (sub-cases 1, 3 & 4). The situation was, however, different in sub-case 2 where there were only two apprentices. Although they shared a sewing machine, they organised the work in such a way that no clash of interest or idling occurred. This suggests that TA could be better managed with few apprentices compared to many.

The researcher noted that informality and lack of support from government and or development agencies were partly responsible for the prevalence of poor learning conditions within TAs in tailoring. It was evident from the study that tailors alone cannot provide adequate skills training given their lack of knowledge and skills of the trade, pedagogical skills and teaching and learning resources. TAs in tailoring could probably provide enhanced skills training if given support.

5.3 SUMMARY

This chapter analysed the aspects of knowledge of clothing products and processes which tailoring apprentices in Nairobi, Kenya develop. The findings show that apprentices developed limited and basic knowledge of clothing products and processes. Knowledge relating to construction and finishing quality were acquired mainly because of their close association with practical skills that are applicable to garment assembly and finishing processes. The findings, however, show that knowledge of design and fabrics were hardly developed. The absence of activities relating to design creativity and lack of knowledge of design and of fabrics among tailors accounted for these limitations. Findings further reveal that apprentices hardly acquired knowledge relating to performance quality of clothing. Any associated knowledge such as fit and fabric performance tended to be incomplete and incoherent due to lack of theoretical knowledge. Likewise, apprentices developed limited skills relating to garment making processes.

The study reveals that factors such as the curriculum in use (customers' orders), techniques of teaching, guidance and learning and contextual factors such as the tailors' lack of knowledge and skills of the trade and expertise to train, apprentices' education, as well as limited and inappropriate learning resources were noted to play

a role in the development of basic and limited knowledge and skills. The next chapter (Chapter 6) discusses the comprehensive findings of the case study.

CHAPTER 6: DISCUSSION OF THE MAIN RESEARCH FINDINGS

6.1 INTRODUCTION

The previous chapter (Chapter 5) presents the empirical findings on the situational analysis of curriculum practices in TAs in tailoring in Kenya. The chapter highlights the aspects of knowledge of clothing products and processes which apprentices develop. The chapter also identifies factors which impact on the curriculum outcomes.

This chapter presents the discussion of the comprehensive case study findings which emerged in the previous chapter (Chapter 5). Discussion of the findings is done in accordance with the sub-research questions and the conceptual framework of the study. The findings are verified based on the theoretical perspectives, the literature and previously established empirical findings as discussed in Chapters 2 and 3. The validated findings are subsequently used to draw the necessary conclusions and to address the overarching aim of the study.

6.2 KNOWLEDGE OF CLOTHING PRODUCTS AND PROCESSES ACQUIRED BY CUSTOM-TAILORING APPRENTICES IN NAIROBI, KENYA

The study explored knowledge pertaining to clothing products and processes in order to describe the aspects that apprentices attending TAs in custom-tailoring in Nairobi, Kenya develop. Brown and Rice (2014:69) point out that clothing manufacturers in general should develop knowledge of physical (design, fabrics, construction and finishing) and performance (aesthetic and functional) dimensions of clothing products. Taking cognisance of these requirements, the findings show that apprentices only develop limited aspects of knowledge relating to construction and finishing. The findings, however, show that apprentices hardly acquire knowledge of

design and fabrics. Furthermore, the study shows that apprentices to a limited extent acquire knowledge relating to functional and aesthetic aspects of clothing product quality. However, the knowledge seems haphazard, incoherent and hardly made sense to the apprentices in most cases. Evidence from the study further shows that both tailors and apprentices could hardly apply the knowledge to design and develop functionally and aesthetically appealing garment designs which the consumers desired in most cases.

Taking into consideration Brown and Rice's (2014:69) knowledge of clothing product quality, the outcomes of curriculum practices in TAs in tailoring are not only limited in scope, but also lack knowledge relating to the most crucial aspects of clothing product quality, namely: design, fabric and functional and aesthetic dimensions. These findings therefore, confirm previous study findings regarding Kenyan tailors' lack of knowledge of clothing product quality (Edwinsson & Nilson, 2009). These findings also confirm the difficulty in finding tailors who can produce quality clothing products in Kenya (ibid.).

The literature also suggests that clothing manufacturers, especially those engaged in custom-clothing production and traditional tailoring should acquire knowledge and skills pertaining to taking of body measurements, pattern making and cutting skills (Tate, 2004:80; Aldrich, 2008:178; Koskennurmi-Sivonen & Pietarila, 2009). Techniques of fabric preparation such as graining, preshrinking and pressing are also crucial in determining the success of the finished products (Knowles, 2005; Di Lorenzo, 2010:15-16). In addition, garment assembly and finishing processes are needed to put the cut work together to form a wearable shape (Shields, 2011; Shaeffer, 2014). In the same vein of these requirements, the current study confirmed that apprentices developed skills relating to the outlined garment making processes.

It was however, apparent that apprentices had problems understanding knowledge areas which need theoretical backing such as pattern drafting. It was also evident that knowledge and skills relating to garment making processes was limited in scope. Furthermore, some participants perceived these skills as basic, thereby supporting Chase and Quinn's (2003:8) and Burke's (2011:14) views that the skills constitute

basic technical skills. Although important, these skills alone cannot be relied upon to solve problems pertaining to emerging challenges that may require creativity and innovation. These findings furthermore, confirm previous reports that Kenyan tailoring and garment manufacturing MSEs that acquire knowledge through TA are semi skilled (McCormick *et al.,* 1997).

The deficit in knowledge of clothing product quality as well as basic skills pertaining to garment making processes that are evident in this study may partly explain the reported poor performance and lack of growth among tailoring and garment manufacturing MSEs in Nairobi, Kenya (McCormick & Ongile, 1993; McCormick *et al.,* 1997). If garments are not enticing enough to arouse the customers' interest, and cannot meet functional performance expectations, then there is no way they can compete favourably with those regarded as of better quality.

An in-depth discussion on the specific categories of knowledge of clothing products and processes which the apprentices developed or hardly developed as well as what the tailors and their apprentices viewed as important for TA curriculum is presented in the sections that follow.

6.2.1 Design

Kimle (1994:58-61) argues that although design is an aspect of experience, deliberate teaching of design principles and concepts can facilitate conversion of design experiences into cognitive knowledge. Effective design learning can be accomplished through reflection upon and discussion of elements of design. This enables individuals to develop a general understanding of the basic concepts which are applicable across multiple design problems and products. A more enhanced understanding of design requires development of theoretical knowledge of the elements and principles of design (ibid.). Keiser and Garner (2012:248) support the view that knowledge of design principles and elements can be developed through deliberate teaching.

The lack of experiences in design creativity and theoretical teaching of principles and elements of design within TAs in tailoring as observed in this study explains the apprentices' failure to develop knowledge of design. The tailors' lack of knowledge of design was noted as one of the major causes of the prevailing challenges in the economic sub-sector. These findings are however, reflective of the true context of TAs in general. Haan (2006) and the ILO (2012) point out that master-trainers in TAs often lack theoretical knowledge of their trades, and as such cannot transfer theoretical knowledge to their apprentices.

Despite the lack of design learning, both tailors and their apprentices acknowledged the fundamental role that design knowledge plays in the creation of aesthetically appealing garments, which tailoring enterprises require to attract customers. The participants further reported that attractive designs are necessary for delighting customers and enticing them to place more orders. Attractive designs were also viewed as having the potential to attract other individuals who admire garments worn by customers to the business. These views thus endorse the essence of design knowledge to tailoring enterprises' creativity and success and are consistent with the literature.

Burke (2011:14, 89), for instance, observes that design skills enable creativity, which is necessary for fashion innovation and creation of marketable and saleable designs. Similarly, Suh *et al.* (2010:10) point out that creation of aesthetically appealing designs is increasingly becoming an integral part of the fashion industry's success. Correspondingly, Aspelund (2010:72) believes that creative skills can aid individuals and enterprises to solve problems, create new products and generate innovative ideas.

Based on the perceived benefits of design knowledge, the majority of the apprentices regarded the lack of engagement in design learning as a major limitation of curriculum for TAs in tailoring. The findings therefore, confirm the views expressed in the literature (Tate, 2004:80; Koskennurmi-Sivonen & Pietarila, 2009; Burke, 2011) that design is a critical aspect of knowledge for garment manufacturing firms

including those that undertake custom-design. The findings additionally confirm a need for design learning to form an essential part of curriculum for TAs in tailoring.

6.2.2 Fabrics

The need for clothing professional to understand fabrics has been emphasised in research and literature (Gersak, 2002; Chase & Quinn, 2003:91; Glock & Kunz, 2005:145, 278; Brown & Rice, 2014:240). It is argued that fabrics constitute a major component of a garment's physical features, provides the foundation for a garment's quality, and is one of the best estimators of a garment's overall quality (Fiore & Damhorst, 1992:176; Gersak, 2002:169). Kemp-Gatterson and Stewart (2009:179) further emphasise that any aspiring fashion professional should understand fabrics, especially their origins and how they are made. Gersak (2002:169) particularly argues that although knowledge of subjective and formal properties of fabrics are important to clothing manufacturers, knowledge of objective measures of fabric quality is even more critical in the delivery of clothing products with assured performance quality.

Despite the strong recommendations for clothing professionals to acquire knowledge of fabrics, the tailors and their apprentices in the current study hardly acquired knowledge of fibres and yarns, how fabrics are dyed, printed, and finished. Furthermore, the participants' knowledge of fabric aesthetics, utility and durability was also limited, mainly due to inadequate and incoherent knowledge of physical features of fabrics. It was evident from the study that participants in most cases used fabrics without regard of how their inherent properties would influence performance of the ultimate garments.

The findings reveal that apprentices failed to develop adequate and coherent knowledge of fabrics due to lack of deliberate teaching across the sub-cases. The tailors' lack of fabric knowledge played a major role in this regard. Just like design, fabric knowledge is not necessarily concrete and visible, but instead conceptual and theoretical. The majority of tailors being graduates of TAs had no access to such knowledge, as the general focus was on practical and visible aspects of knowledge.

TAs in tailoring therefore, displayed the general characteristic of TAs in this regard (Collins, 2006:48).

Brown and Rice (2001:192; 2014:270) assert that fabrics play an important role in aesthetic performance of garments. The aesthetic elements of fabric colour, pattern, colour consistency, luster, opacity, and hand influence the garment's design as well as its aesthetic appearance. Of these elements, the tailors and their apprentices could only relate with colour, pattern, and the need for colour fastness or consistency. This was not surprising considering that these elements readily appeal to consumers visually (Kadolph, 1998:295; Marshall *et al.,* 2004:341; Beer, 2010:8). This may also explain why elements such as luster, opacity, and hand which are not readily visible, and therefore do not easily attract consumers' attention, were hardly recognised as salient aspects pertaining to fabric aesthetics. This finding supports the fact that development of fabric knowledge may be beyond incidental learning and requires deliberate instruction.

Colour is the main attraction feature in fabrics as well as in garments (Brown & Rice, 2001:192; Tate, 2004:164; Beer, 2010:84). Loss or change in a garment's original colour is a major source of consumer dissatisfaction and may cause consumers to discontinue the use of garments, even if they are structurally sound (Brown & Rice, 2001:197). It is not strange that participants were able to associate fabric and garment aesthetics with colour and were concerned over colour fastness in fabrics and garments. Despite the concern for colour fastness, the participants lacked knowledge of techniques for testing fabrics for colour fastness. These techniques are however, essential basic skills that clothing professionals should have (Kadolph, 1998; Aldrich, 2008:8; Di Lorenzo, 2010:15-16). The lack of these basic techniques of fabric preparation demonstrates the extent to which the tailors and their apprentices were limited in essential skills which can help in predicting the performance of fabrics and garments during use and care. This further underscores the need for apprentices to acquire fabric knowledge.

Marshall *et al.* (2004:301) point out that an understanding of the effects of fabric pattern/design in garment construction is important to clothing manufacturers in the

delivery of attractive garments. For example, distinctly patterned fabrics, such as plaids, checks, one way designs and fabrics with surface interest, particularly require special attention during pattern layout, cutting and sewing to ensure that the designs are not distorted (Marshall *et al.,* 2004:301; Tate, 2004:168; Di Lorenzo, 2010:53-4). With respect to these aesthetic concerns, the participants reported that fabrics with motifs facing one direction should have patterns for cutting the garment components laid facing the same direction. They also reported that large motifs should be used on garment designs with very few seam lines for the motifs to remain complete and aesthetically appealing.

Again, these findings are not surprising given that the knowledge relates to the visible and concrete aspects of fabric aesthetics, which can be learned through observation and imitation efforts. Furthermore, the desire to deliver attractive garments seemed to compel the participants to make use of every viable opportunity that could aid them to meet this goal. Practical and observable skills such as the ones identified in this study proved to be the most accessible to the participants.

Fabric pattern/design has effects on the body and therefore, needs to be understood well. For example, the scale or size of motif, its arrangement, and colours often influence the effect of fabric pattern/design on the body (Marshall *et al.,* 2004:303; Tate, 2004:168). Effective use of fabric pattern requires application of knowledge of principles of design in analysing the effects of fabric pattern/design on the body (Chase & Quinn, 2003:13). This aspect of designing was not reported in the current study. This occurrence confirms the participants' lack of knowledge of principles that underpin this aspect of design. The finding further confirms the need for tailoring apprentices to acquire these aspects of knowledge, to foster effective use of fabric pattern in designing aesthetically appealing garments to afford customers an aesthetic visual illusion and attractive appearance.

Knowledge of functional performance of fabrics, mainly their utility and durability, is also important in ensuring that garments will perform as expected (Brown & Rice, 2001:194; 2014:273). Utility of a fabric encompasses its influence on the garment's

functional performance characteristics of shape retention, appearance retention, comfort, ease of care and safety.

A common problem that is linked to shape and appearance retention is shrinkage. Fabric shrinkage is a major cause of consumer dissatisfaction as it affects the garment's appearance, makes it uncomfortable due to change in size and may render a garment unwearable (Kadolph, 1998; Brown & Rice, 2001:195-6, 2014:273; Chase & Quinn, 2003:92). Other shape and appearance retention problems which are linked to fabrication include torque (in knit) and skewness in (woven) fabrics (Brown & Rice, 2001:197).

The current study findings reveal that fabric shrinkage was a major concern among participants across the sub-cases. Shrinkage was a major source of dissatisfaction in 'kitenge' fabrics as it interferes with garment fit, comfort and often causes customers to return the garments for adjustments soon after washing. The remedy for this problem entailed provision of large seam allowances and/or making the garments slightly bigger to provide room for adjustment and/or better fit upon laundering. The literature (Brown & Rice, 2001:195; Knowles, 2005) acknowledges these remedies as essential in providing garments with better fit.

Other than the highlighted remedies, the participants lacked knowledge and techniques for testing fabrics for shrinkage. As such, the fit and comfort of garments made from unfamiliar fabrics, which were prone to shrinkage were often compromised. Participants were also unaware of the use of pre-shrinking technique as a precaution on unfamiliar fabrics. Di Lorenzo (2010:17) particularly notes that fabrics made of natural fibers often shrink, and therefore, need to be pre-shrunk before being cut. Moreover, the participants hardly mentioned torque and skewness as other problems relating to shape and appearance retention (Brown & Rice, 2001:195). Since customers were unaware of problems emanating from toque and skewness, they raised no complaints relating to the same. The participants were furthermore, unable to relate with these properties. This occurrence further demonstrates the extent to which relying on incidental learning or everyday

knowledge as a source of knowledge and skills development, as is the case in TAs, can be limiting.

Likewise, problems relating to appearance retention such as crease retention, resistance to wrinkling, snagging and pilling (Kadolph, 1998:31-2; Brown & Rice, 2001:197) did not feature in conversations with participants. Again, this was because their customers hardly raised complaints in relation to these problems.

The study also established that comfort was not associated with fabric related factors such as weight, hand, extensibility, insulation, and absorbency/wicking ability, yet these influence the way the garment interacts with the body (Kadolph, 1998:30-1; Brown & Rice, 2001:198-9, 2014, 277; Chase & Quinn, 2003:93). Again, the tailors' lack of responsibility over selection of customers' fabrics seemed to play a role. It occurred that customers were responsible for selection of fabrics and therefore could hardly raise any issues regarding any failures due to these properties. Likewise, tailors were only concerned with fabric properties which the customers could easily identify with and complain about, that is, those which caused visible and concrete effects on garment fit, construction, and aesthetics.

Ease of care is another important fabric characteristic which affects a garment's serviceability (Kadolph, 1998:31). Easy care fabrics include those that are soil resistant, resilient, absorbent, strong and resistant to abrasion, dimensionally stable, colour fast, resistant to heat and chemicals as well as washable (Brown & Rice, 2001:199; 2014:278). Of the outlined qualities, the participants were only concerned with colour fastness and resistance to shrinkage. While this may imply that they were concerned with ease of fabric and garment care to a certain extent, the fact that they lined shrinking 'vitenge' fabrics with non-shrinking polyester lining made it clear that the participants hardly developed knowledge of ease of fabric care. Moreover, the participants did not seem knowledgeable about fabric durability and safety as these did not feature in their conversations. Again, the fact that customers were responsible for fabric selection implies that they shouldered responsibility for performance related failure. These occurrences further account for the tailors' lack of

concern for ease of fabric care, durability, and safety. This therefore explains the lack of transfer of the knowledge to apprentices.

In general, the participants' knowledge of fabrics was limited to problems encountered during garment production and complaints raised by customers in relation to problems encountered during garment use and care. In relation to the range of knowledge attributes that the literature recommends for clothing manufacturers, it is reasonable to say that the scope of fabric related knowledge which the apprentices develop from TAs in tailoring is extremely limited. However, the challenges which the participants' encountered while using fabrics, the participants' views regarding the need to develop certain aspects of fabric related knowledge, as well as the bits and pieces of fabric related forms of knowledge acquired incidentally, all suggest the importance for apprentices to develop in-depth knowledge of fabrics. The findings therefore, further suggest the need to incorporate fabric knowledge into the curriculum model to be proposed for intervention in skills training for apprentices.

6.2.3 Construction and finishing

Brown and Rice (2014:396) argue that good design and fine-quality raw materials alone do not constitute a quality product. Instead, they should be supported and enhanced through appropriately and properly executed production techniques. Participants knew that construction features such as stitches and seams are needed to put garment components together. They also knew that quality of construction features such as threads, stitches, seam allowances and neatening techniques influence garment aesthetics and durability. For example, both tailors and apprentices reported that evenly worked stitches and seams contribute to seam and garment aesthetics. They also knew that long, broken, puckered and stitches with loops render garments less attractive and durable due to high probability of premature seam failure. These reports are consistent with those reported in the literature and research (Di Lornzo, 2010:69; Shields, 2011:37; Brown & Rice, 2014:362).

It was apparent that knowledge and skills pertaining to construction quality were limited. The participants focused on very few stitch and seam types. Evidence of construction related problems encountered when working with stretch and sheer fabrics, including the type of seams and stitches used showed that their knowledge of stitch and seam selection were underdeveloped. Moreover, very few attempts were made to use construction features as design features in the finished garments. A focus on customers' orders as a source of knowledge and limited knowledge of principles of construction quality tended to contribute to these limitations. Furthermore, the customers' ability to afford elaborate construction details also constrained the need for tailors to focus heavily on this aspect of quality.

Likewise, knowledge of finishing was also limited to physical aspects, specifically those linked to enhancing seam and garment appearance, such as neatening of seams, mainly through overlocking and removal of loosely hanging threads and finish pressing. While these aspects of construction features are acknowledged in the literature (Beer, 2010:225; Brown & Rice, 2014:149-50), the researcher noted that discussion with participants hardly paid attention to features such as buttons and buttonholes, and application of fastenings in general. Moreover, finishing features such as overlocking were not in any way associated with durability other than aesthetics. It was also apparent that other than overlocking, the participants had no knowledge of alternative ways of seam neatening. Even in cases where they used some aspects such as bias binding to neaten seams, they could not relate these to neatening techniques. Instead, they simply imitated what existed in the designs which they reproduced, but without making sense of their actions. This corresponds to what Winch (2015) refers to as mastery of a skill as opposed to acquisition of a skill. The occurrence makes it clear that learning through imitation and trial and error does not provide sufficient grounds for acquisition of adequate skills. An opportunity to learn the accompanying knowledge is equally important in the development of adequate skills.

It was not surprising that apprentices and tailors were conversant with certain aspects of construction quality, especially the practical skills that are readily observed and can easily be acquired through enhanced practice. The participants

even reported that customers were instrumental in shaping the development of knowledge of construction and finishing quality. The fact that apprentices could identify with certain aspects of knowledge and skills pertaining to construction and finishing quality, suggests that these physical features should constitute part of curriculum for TAs in tailoring.

6.2.4 Aesthetic performance of clothing products

The aesthetic performance of a garment refers to its attractiveness, appeal and beauty to a consumer (Brown & Rice, 2014:70). Chase and Quinn (2003:8) maintain that beauty is a basic need that is emotionally necessary for human survival. Based on these views, it was not strange that tailors and apprentices knew the importance of clothing manufacturers to know features which contribute to garment aesthetics and what constitutes an attractive garment.

Brown and Rice (2001:47-8, 2014:70) point out that the aesthetic appearance of each of the physical features of a garment should appeal to a particular customer's taste while complementing each other at the same time. These should result in a garment that is attractive in appearance to provide aesthetic appeal that is desirable to the garment wearer. Although the participants seemed knowledgeable in this regard, the study revealed that apprentices and tailors mainly focused on physical and visible aesthetic aspects of garments which easily convey their visual appeal to consumers (Kadolph, 1998). However, the participants were unable to relate with more technical aspects of knowledge of garment aesthetics that required theoretical explication.

Kadolph (1998:27) points out that aesthetics of garments relate to how a garment satisfies the customer's needs in terms of appearance, fashion, fit and styling preferences. The participants knew that latest fashion (fabric and garment design/style) constitute part of garment aesthetics that consumers always wish to identify with. Being aware of the latest fabrics and garment designs that can attract customers to the business was therefore, reported as important. The participants were also aware that a garment's appearance, style and fit should meet the

customers' specific aesthetic preferences. Although customers bought own fabrics and selected designs for the garments to be made, the fact that tailors and apprentices could not verify whether fabrics were relevant to the selected designs, or that styles were appropriate to the customers' body sizes and shapes constrained efforts to produce garments that could meet customers' aesthetic expectations.

Garment aesthetics can also be achieved when design elements reflect good design principles (Brown & Rice, 2001:47; Suh, *et al.,* 2010; Burke, 2011; Keiser & Graner, 2012). The participants were aware of some of the elements of design which contribute to garment aesthetics, especially the formal features of fabrics such as pattern and colour. It was however regrettable that they did not know how to organise the elements into aesthetically appealing garments due to lack of knowledge of design principles.

Evidence from the study shows that the participants focused more on aesthetics of construction and finishing rather than on aesthetics of workmanship. For example, they strived to produce evenly worked stitches and seams which they knew contribute to the aesthetics of garments (Shields (2011:xxxiv). However, their knowledge of quality workmanship as a source of garment aesthetics seemed low. They were not keen on matching details such as plaids at the seams, did not observe balance of features such as dart length on skirts or on bodices and even placement of buttons and buttonholes among much more (Kadolph, 1998:28). These examples illustrate how limited the participants' knowledge of technical details was. The lack of knowledge of principles of construction contributed to limited knowledge of workmanship. It was also evident that the tailors' approach to pattern drafting and cutting also caused the apprentices to miss out on how to obtain precision and balance in the cut and constructed work, thereby further constraining attainment of quality workmanship.

Kadolph (1998:27) points out that a garment that is attractive in appearance may be achieved when the components work together to enhance the overall appearance. For example, the interlining should enhance the way the collar rolls, patterns for the garment should fit together to create an overall structure with integrity for an

attractive appearance to the customer, and the physical components should work together to create an aesthetic appeal appropriate for the intended use, i.e., the facing should extend far enough into the jacket front to support the collar and buttons (ibid.). In view of these examples, it was noted that the tailors were not keen on the quality of interfacings used. Instead, they focused more on the cheapest quality to maximise profit. The researcher observed that the stiff yet cheap interfacings impacted on the appearance of interfaced garment parts and compromised on the garment's aesthetic appeal. Although this was a common practice across the sub-cases and other tailoring enterprises across the study settings, tailors, apprentices and customers seemed unaware of the technical anomaly. It is in this regard that Brown and Rice (2001, 2014) and Chase and Quinn (2003:8) caution clothing manufacturers to be cognisant of technical aspects of quality, which may sometimes be invisible to consumers, yet may impact negatively on the aesthetic appearance of garments as well as on the business' success. Mistakes arising from technical details such as the ones reported in this study are consistent with those reported in previous studies (Nyang'or, 1994; Apunda, 2002) as responsible for low preference of locally made clothing products in Kenya.

6.2.5 Functional performance of clothing products

The functional performance of garments relate to their utility and durability (Lamb & Kallal, 1992:43; Brown & Rice, 2001:47-8, 2014:70). A consumer may evaluate a garment's functional quality on the basis of how well it fits, how durable it is, and how well it performs the function for which it was purchased (Shields, 2011:xix). A garment's utility refers to its usefulness in terms of fit, comfort, ease of care, and ability to function appropriately for the intended use (Brown & Rice, 2001:47-8, 2014:70). Of the utility factors, the participants were mainly keen on fit and comfort of a garment to the customers. They were however, less concerned about ease of care and end use mainly due to limited and incoherent knowledge.

Fit: Workman and Lentz (2000:252), Alexander *et al*. (2005:52) and Brown and Rice (2014:212) define fit as the closeness or looseness of a garment on the body or how well the garment conforms to the 3-D human body. The participants' view of fit was

consistent with the description of fit in the literature. The participants reported that a garment that is too tight or too baggy and too short does not fit the customer well. Tight fit was reported to inhibit garment wearers from effective movement, i.e., they cannot bend and/or sit and therefore, are uncomfortable to use. These reports support findings in previous studies and related literature. Huck *et al.* (1997:45), Kadolph (1998:31, 441-5), Brown and Rice (2001:138, 2014:188-9) point out that a garment that fits too closely or loosely inhibits mobility and does not provide the desired protection and any associated performance benefits including comfort.

To produce garments that meet the customers' fit preferences, clothing manufacturers should successfully interpret body measurements (Marshall *et al*., 2004:312; Alexander *et al*., 2005:53). The tailors and apprentices shared this view in reporting that good fit can be attained through the use of accurate body measurements obtained from customers. Efforts to establish the customers' fit preferences were also reported as crucial towards producing garments with the potential to meet fit specifications. Apprentices performed fit evaluations by trying on their garments during construction and making adjustments to ascertain good fit in the ultimate garment. The tailors' customers also fitted their garments to ascertain that they fitted well before taking them home. Other than these measures, the tailors had no means of ensuring that cut garment components would definitely fit customers. They simply relied on trial and error efforts.

Fit problems may be due to construction related problems (Brown & Rice, 2014:212). Problems may emerge during layout, cutting, and garment assembly (Rasband & Liechty, 2006:55). Unskilful use of fabric grain can also result in lack of balance in the garment, thereby leading to poor fit (Brown & Rice, 2001:158-161). In view of the above, the participants reported that sheer and stretch fabrics tended to cause poor fit as they posed problems during fabric layout, cutting and construction. The participants further noted that great care should be taken when using such fabrics to eliminate possible errors which may cause poor fit.

Comfort: Comfort relates to ease in wear of a garment (Chase & Quinn, 2003:93) or the way in which an item of clothing interacts with the wearer's body (Kadolph,

1998:30; Brown & Rice, 2001:198). Factors such as fabric, fit, and style can influence the garment's comfort. These may cause garment wearers to lack or experience both psychological and physical comfort when wearing the garment. The participants in the current study mainly associated garment comfort with fit related factors. It was much easier for participants to detect fit problems which linked directly with garment production processes. They however, failed to relate comfort to fabrics and/or garment style due to limited knowledge of fabrics and a lack of knowledge of suitable design/styles for varied body shapes and sizes as well as suitable fabrics for varied designs. The fact that participants were unable to identify all factors relating to comfort demonstrates the extent to which they are limited in knowledge of functional performance of garments.

End use: Brown and Rice (2014:188) and Shields (2011:xxx) assert that garments should function according to the intended uses. A garment's end use is the intended purpose for which it is being made (Kadolph 1998:335; Brown & Rice, 2001:54). Knowledge of end use is helpful to clothing manufacturers in determining appropriate functional and aesthetic performance standards for the garments to be made. The findings show that the participants' knowledge of end use was not well developed. They did not link the garments which they made with the intended functions in most cases. Instead, they were absorbed with producing garments based on designs selected by customers without much regard for the intended uses. Given the need to deliver products which can meet the intended end uses, this aspect of knowledge may enhance the apprentices' performance and productivity.

Durability: A garment's durability encompasses its ability to resist shrinking, the integrity/reliability of construction and features such as zippers or openings as well as fabric strength (Kadolph, 1998:29; Brown & Rice, 2001:48, 2014:70; Shields, 2011:xxxi). Colour fastness and appearance of materials such as fashion fabric, threads, buttons, lining, support fabrics as well as padding among other features contribute to the overall durability of garments (Beer, 2010:88). Although concerns for fabric shrinkage and colour fastness kept recurring in conversations with participants, the participants hardly associated these with garment durability, but with fit and appearance retention. However, durability of construction featured as a major

concern. The participants reported that customers often complained whenever stitches and seams seemed not to be strong enough. For example, long and broken stitches and those with loops were perceived as less durable. Similarly, repeatedly unpicked and redone seams were viewed as a possible cause for seam weakness. The fact that participants hardly associated garment durability with fabric durability suggests that their knowledge of garment durability is limited. In general, limitation in knowledge of utility and durability related factors suggest that it is important for tailoring apprentices to learn more about functional performance of garments. From the challenges relating to limited knowledge of functional and aesthetic performance of garments, it is apparent that there is need for these to form part of the knowledge content of the curriculum model for intervention in skills training for graduates of TAs in tailoring.

6.2.6 Knowledge and skills pertaining to garment making processes

The findings under this category show that apprentices acquired certain aspects of knowledge and skills relating to taking of body measurements, pattern making, fabric layout and cutting, and garment assembly and finishing techniques. These sub-categories are discussed next.

6.2.6.1 Techniques for taking body measurements

Knowles (2005:19) holds that the ability to take accurate body measurements from customers is an important skill for pattern making that all pattern makers should learn. Accurate body measurements are crucial in developing patterns needed to achieve good fit in garments (Burke, 2011:144). Findings concerning this sub-category are consistent with the literature in that the tailors and their apprentices knew that skills for taking body measurements from customers are important in custom-tailoring. The participants also knew that body measurements should be accurate to ensure good fit. It was evident that apprentices across the sub-cases practiced how to take body measurements and used the measurements to create patterns for cutting the garment components.

6.2.6.2 Knowledge and skills relating to pattern making

Tate (2004:80) points out that pattern drafting skills are a strategy to create attractive garment designs and are essential to custom-designers' survival. Similarly, Aldrich (2008:5) asserts that the quality of pattern making and cutting skills is integral to the design success. Koskennurmi-Sivonen and Pietarila (2009:256) further point out that the quality of patterns and cutting processes are critical to the ultimate fit of custom-made garments. Findings in the current study reveal that pattern drafting was the main aspect of design knowledge which the apprentices learned. The participants across the sub-cases used customers' measurements to draft patterns for cutting components of garment designs to be made. The tailors and their apprentices were aware that successful cutting of the garment components depends on the ability to draft patterns to produce the desired design features of the garments to be made.

Findings, however, show that the tailors' approach to pattern drafting was rather unique in that they drafted patterns directly on the main garment fabrics as opposed to the common approach of creating patterns on paper. Pattern drafting and cutting processes were therefore, accomplished in one go. The limitation associated with this approach, nevertheless, was the lack of opportunity to fine tune patterns through fit trials before cutting the work. It was also noted that the approach did not provide room for further development of basic patterns into more elaborate styles. There was equally no chance of rearranging patterns on fabric to match plaids or motifs. The approach was also wasteful and prone to too many mistakes which in most cases only manifested when the completed garments were being fitted.

Knowles (2005:xv) argues that pattern drafting skills can be effectively learned if the students not only undergo the required steps, but also understand the processes, including how all the pieces work together in the finished garments. These conditions are best accomplished through integration of practical learning with theory. It was evident that tailors lacked theoretical knowledge that underpins pattern drafting. This may explain the use of the reported unique pattern drafting approach and why tailors could not transfer knowledge of principles that underpin pattern drafting skills to apprentices. Instead, apprentices learned pattern drafting through observation and

imitation, which were reported to constrain understanding. Complaints raised by apprentices in this regard are therefore in agreement with theory.

6.2.6.3 Techniques of fabric preparation and layout

Techniques of fabric preparation for layout are also important aspects of technical skills for fashion designers (Reader's Digest, 2002; Keiser & Garner, 2003:181; Aldrich, 2008:7; Burke, 2011:16). Di Lorenzo (2010:15-16) notes that fabric preparation techniques such as straightening, preshrinking, and pressing are important procedures as they determine the success of the cut work and the finished product. Of the outlined techniques, apprentices could only relate with pressing. They also reported that fabrics should be examined for any flaws to exclude it from the cut work. In addition, they were aware that the manner in which the fabric pattern runs should be checked to inform pattern layout and cutting.

These aspects of fabric preparation techniques are basically practical and observable processes which can easily be identified and questioned by customers. However, the more objective measures such as testing for colour fastness and fabric shrinkage were not known to the tailors and their apprentices. The findings show the extent to which relying on everyday knowledge as a basis of learning can be limited. The findings therefore suggest a need for a more focused approach to teaching and learning that is informed by a curriculum that identifies important aspects of knowledge to be taught.

6.2.6.4 Garment assembly and finishing processes

Garment assembly is a very critical facet of clothing production process as it is the stage where a product is created (Brown & Rice, 2014:396). Shaeffer (2014:11) specifically points out that successful execution of whole-garment assembly requires individuals involved to develop extensive knowledge of the methods involved and to be highly skilled.

The findings reveal that tailors and apprentices were aware of the need to be skilled in garment assembly and finishing processes. Tailors guided apprentices in developing sewing and finishing skills needed to produce garments with aesthetic and functional performance quality. The researcher noted that stitch selection was observed, but limited to length, straightness, evenness and neatness. Apprentices were also aware that broken stitches and those with loops and/or puckered not only result in unappealing seams, but are also likely to cause premature seam failure. It is apparent from the findings that apprentices to a certain extent acquired knowledge and skills needed for successful garment assembly. Glock and Kunz (2005:428), Keiser and Garner (2012:428) and Brown and Rice (2014:334) assert that skilled sewing professionals produce stitches that enhance garment quality.

From the findings, it is apparent that the participants' knowledge of stitch was limited since other factors such as needle size, thread type and size which influence stitch quality, garment performance and longevity were not taken into consideration. Keiser and Garner (2012:426) assert that understanding the above may be of considerable benefit to those responsible for garment quality.

The findings further reveal that apart from factors responsible for seam strength, seam flexibility, elasticity and varied types of seams that can be used to assemble garments (Shields, 2011:39; Brown & Rice, 2014:362) were not learned. It also turned out that threads and needles used in sewing were not varied according to fabric characteristics. Consequences of use of inappropriate thread and needles were evident in the assembly of stretch and sheer fabrics such as organza and chiffon which ended up in defective seams and an unappealing appearance. It was also evident that finishing processes such as construction of buttonholes and attaching of buttons and other closures in general were done, yet participants hardly mentioned these in their conversations. These omissions, to a certain extent, suggest that a great deal of knowledge of garment assembly and finishing were not acquired despite participation in practical aspects of the tasks. This finding is therefore consistent with Winch's (2015) assertion that having practical abilities alone without the underpinning knowledge is hopeless. The finding thus makes a

strong case for the need to support practical skills acquired through TAs with the underpinning theoretical knowledge.

6.3 REASONS FOR THE CURRICULUM OUTCOMES IN TA IN TAILORING

The study sought to identify factors which may account for the outcomes of curricular practises in TA in tailoring. It was assumed that the knowledge would be important in informing how to improve upon knowledge of clothing products and processes. The study reveals that curriculum in use (customers' orders), techniques of teaching and learning and contextual factors such as the tailors' lack of knowledge and skills of the trade and expertise to train, apprentices' education, as well as limited and inappropriate learning resources influenced the outcomes. The following section presents the discussion on how these factors influence the curriculum outcomes.

6.3.1 The curriculum in use

Tyler (1949) in (Ornstein & Hunkins, 2009:214; Marsh & Willis, 2003:72; Deng & Luke, 2008:74; Hoadley & Jansen, 2012:62, 244-5) views an effective curriculum as one that is grounded in well-researched educational objectives. This condition is met when the objectives are developed by specialists based on views from learners, contemporary society as well as subject-matter specialists regarding behavioural outcomes and the most worthwhile subject matter needed to attain them.

The findings show that curriculum for TAs in tailoring were not based on educational objectives. Instead, the motivation behind the tailors' engagement in TAs was personal, a means to earn extra income. This caused tailors to limit what they taught apprentices to what they knew and any available work to be accomplished. This explains why the curriculum focused on everyday tailoring activities performed by tailors. Hoadley and Jansen (2012:106), however, argue that everyday knowledge tends to be random, unplanned, practical and concrete and can easily be learned through observation and practice. However, the knowledge can hardly be adapted to more challenging situations as it tends to be basic, and cannot aid performance of specialised kinds of tasks or work (Hoadley & Jansen, 2012:109). The findings in the

current study confirm these views in that tailors and their apprentices focused on development of skills relating to taking of body measurements, pattern drafting and cutting, construction and finishing. Chase and Quinn (2003) and Burke (2011) regard these skills as basic technical skills. A careful analysis of these activities reveal that the skills are basic, mainly applicable to routine practical tasks leading to production of basic and common garment designs. It was also evident from the study that tailors and apprentices lacked the ability to adapt pattern drafting skills to the more challenging designs due to limited-knowledge.

Deng and Luke (2008:71) argue that curriculum planning essentially aims at ensuring that the selected subject matter is more intrinsically worthwhile than others. Marsh and Willis (2003:23-24) share similar sentiments by adding that curriculum decisions entail ascertaining that the selected subject matter accurately and broadly represents the reality of the world beyond the student's immediate experience. In addition, the selected subject matter should ensure applicability and utility of the derived knowledge and skills to a wider work context within the society. The lack of clear educational objectives and subject matter specialists (professionally skilled tailors) to undertake appropriate curriculum decisions may explain why the most intrinsically and worthwhile aspects of knowledge such as design, fabric and knowledge of functional and aesthetic performance of clothing products and processes remained hidden to tailors and could not be taught. This may further explain why tailors and apprentices were not creative, lacked innovative abilities and could not readily solve problems relating to creation of unique and creative designs (Aspelund, 2010; Burke, 2011) as occasionally demanded by customers. From the findings, it is reasonable to say that custom-tailoring apprentices may benefit greatly from a curriculum which provides knowledge relating to design, fabrics and functional performance quality of clothing products. The outlined range of knowledge should therefore form part of the curriculum content to be used in complementing TAs in tailoring.

6.3.2 Techniques of teaching and learning

Marsh and Willis (2003:73) assert that it is not only the subject matter content, but also the methods for teaching and learning that foster achievement of some of the wider curriculum goals or aims. Guile and Young (1999:114), nevertheless, argue that cultural anthropologists such as Lave and Wenger (1990) do not discuss theories of instruction, and instead present apprenticeship as 'not dependent upon any formal teaching'. Consequently, TAs engage purely practical-oriented learning (Haan, 2006:160; Eichhorst *et al.,* 2012:28), where apprentices learn from observing craftsmen at work and doing what they observe through repetition and trial and error. Such techniques, therefore, restrict learning only to production of a specific type of output. For example, '*knowing how to reproduce, copy and/or improve an object'* (Walther & Filipiak, 2007:75). These outcomes often limit the graduates' ability to adapt to any challenges that are likely to arise from work, especially those which require application of complex knowledge that relates to theoretical aspects. Based on the learning techniques involved, acquisition of theoretical knowledge through TAs can be difficult.

In line with the advanced theories and literature, the current study confirms that the main mode of learning entailed the use of observation and trial and error. The mode of learning however only fosters development of practical skills applicable to on-going tailoring tasks. It was also evident that use of these techniques of learning could not foster acquisition of a great deal of knowledge of clothing products and processes, especially those which require theoretical explication. Considering the importance of these aspects of knowledge to tailoring trade, opportunities to employ learning techniques that foster their development is crucial. Overcoming the challenge of development of basic and limited knowledge and skills may require complementing skills acquired through TAs with learning techniques that provide theoretical explication of the knowledge involved. Haan (2006) and the ILO (2012) recommend such learning approaches as essential in upgrading skills acquired through TAs. Previous studies (ILO, 1998-99) in Kenya, the case of Strengthening Informal Training and Enterprise (SITE) and Vocational Education and Training Authority (VETA) in Tanzania (German Technical Cooperation (GTZ), 1999-2002),

and the Vocational Skills and Informal Sector Support Project in Ghana (VSP) (Haan 2006; Palmer 2009; ILO 2012), demonstrate that provision of tailor-made short-duration theoretical and practical courses by vocational training institutions (VTIs) proved useful in enhancing trade specific knowledge and skills. This however, can be facilitated through a curriculum that highlights the aspects of knowledge that should be taught/learned. This underscores the need to develop a curriculum which outlines the aspects of knowledge and skills needed to foster the development of adequate knowledge of clothing products and processes.

6.3.3 Environmental constraints and-or contextual factors

Booyes and Du Plessis (2008:4) as well as Hoadley and Jansen (2012:32-37) concur that environmental constraints or contextual factors may influence the way the planned curriculum is enacted and-or experienced. The following factors can influence any planned curriculum:

- The teacher's lack of awareness on how to teach the subject matter may cause a drift from the plan;
- The teacher's lack of knowledge of the subject matter may also cause failure to implement the curriculum as planned;
- The teacher's lack of preparedness towards implementation of the curriculum may also cause deviation from the plan;
- The learners' prior experience of what is being taught may also influence the nature of the outcomes that they make from the enacted curriculum;
- The learners' interests in what is being taught may also cause them to perceive the learning differently thereby ending up with different meanings; and
- Factors such as resource constraints (e.g. laboratories and libraries) and materials which support the learning process (e.g. access to text books) may affect the way in which the planned curriculum can be implemented and even experienced in reality.

Although curriculum for tailoring was unplanned and unorganised, it was still evident that some of the outlined factors impacted on the curriculum and outcomes. Of the

activities which the tailors and their apprentices engaged in, teaching and learning of pattern drafting was, for example, reported as the most challenging. The tailors had limited knowledge of pattern drafting, which impacted on how it was taught and quality the acquired knowledge. For example, the apprentices complained of constrained understanding of pattern drafting. The tailors' lack of pedagogical skills also constrained planning and organising of pattern drafting and other tailoring activities to foster effective teaching and learning. It also turned out that lack of knowledge of design, fabrics and performance quality of garments resulted in failure to teach these aspects of knowledge. These factors thus contributed to basic and limited knowledge and skills of clothing products and processes. From the findings, it seems prudent to suggest that efforts to enhance the tailors' knowledge and skills of the trade and pedagogical skills may enhance quality of practical skills training. This calls for involvement of policy in ensuring that provision of skills training through TAs be undertaken by knowledgeable tailors who also have relevant training skills. Haan (2006), the ILO (2012) and Adams *et al*. (2013) recommend such approaches as essential in upgrading skills acquired through TAs.

The apprentices' education to a certain extent influenced the way the curriculum was enacted and even experienced. The majority of apprentices had PSE education (see **TABLES 5.1-5.4**). This cohort of apprentices seemed comfortable with the practical mode of learning and the outcomes. However, apprentices with SSE were of the view that the training could be much better, if integrated with theoretical learning to enable development of enhanced knowledge and skills for skilful performance of a wide range of tailoring activities. The concerns raised by apprentices further call for efforts by policy and other interested parties to think of intervention strategies to improve upon practical skills acquired through TAs. Complementing TAs with a curriculum that provides knowledge and skills that cannot be acquired through TAs would be helpful in this regard.

The tailoring environment seemed unfavourable for learning aspects of knowledge which do not relate directly to what the tailors were doing. This means that even with a plan that outlines the knowledge content to be covered, the scope of the enacted curriculum will still be limited. These findings suggest that TAs are in essence limited

in the nature of knowledge of clothing products and process which can be developed. Again, the need for policy and other interested bodies to look into how best to support apprentices to improve upon practical skills acquired through TAs is implied.

The tailors' willingness to let apprentices develop practical skills based on their entrepreneurial activities shows that support by policy may foster development of enhanced practical skills and knowledge of the trade. It was evident that tailors were incapable of providing adequate and updated equipment, technology and resources needed to teach and learn the trade effectively. Resource constraints such as inadequate and poor quality fabrics, obsolete and limited sewing machines, as well as crowded workshops impacted on the quality of practical skills. Apprentices also had limited opportunity to participate in enhanced practice, and even though they dedicated adequate time for training, they ended up wasting much of it idling. This turned out to be expensive as they spent much longer time in paid training. It was reported that some apprentices end up dropping out prematurely due to these limitations. Tapping into the tailors' potential may go a long way to enhance the industry's productivity, incomes and sustainable employment.

It was also evident that pressure to deliver customers' orders as well as the goals for participating in TAs impacted on the quality of guidance that tailors accorded apprentices. In addition to these, large numbers of apprentices per sub-case (see **TABLES 5.1, 5.3** and **5.4**) further constrained the quality of guidance accorded to the apprentices. These occurrences further suggest the need for policy involvement in supporting TAs in tailoring to ensure that apprentices access quality guidance to foster development of enhanced practical skills. Some incentives, in terms of remuneration for tailors may enable them to focus on providing quality guidance. This can further be enhanced by ensuring that tailors have relevant training skills and adequate technical knowledge of clothing products and processes.

6.4 SUMMARY

The study confirms that apprentices only acquired limited aspects of knowledge relating to construction and finishing, but hardly acquired knowledge of design and fabrics. The study further shows that knowledge relating to functional and aesthetic aspects of clothing products which apprentices acquired were haphazard, incoherent and hardly made sense to the majority of apprentices in most cases. In addition to these, apprentices developed knowledge and skills relating to techniques of taking body measurements, pattern drafting, fabric preparation and layout, as well as garment assembly and finishing. It was apparent from the study that TAs mainly enabled apprentices to develop skills relating to practical activities, thereby confirming the generally acknowledged strengths and weaknesses of this model of skills development. A strong case of mastery of skills as opposed to acquisition of skills is therefore evident.

From the findings, it can be gathered that prevalence of poor performance and a lack of growth among tailoring and garment manufacturing MSEs is partly due to basic and limited knowledge and skills pertaining to clothing products and processes. A number of factors were noted to account for these outcomes.

It is evident from the study that curriculum in use (customers' orders), techniques of teaching and learning, and contextual factors such as the tailors' lack of knowledge and skills of trade and expertise to train, apprentices' education, as well as limited and inappropriate learning resources, influenced the outcomes. It was apparent that the difficulties encountered by tailors and their apprentices in relation to productivity were as a result of limited knowledge and skills. Some of the apprentices further perceived TAs as limited in knowledge and skills development.

Based on these findings, it is reasonable to conclude that there is a need to develop a curriculum model as an intervention in skills training for TAs in tailoring. The curriculum model can be used to highlight what needs to be learned to enhance knowledge and skills of clothing products and processes among dressmakers, custom-tailors and tailors working within tailoring and garment manufacturing sub-

sector. In the next chapter (Chapter 7), the researcher undertakes to develop the curriculum model which was the overarching goal of the study.

CHAPTER 7: THE DEVELOPMENT OF A CURRICULUM MODEL

7.1 INTRODUCTION

The previous chapter (Chapter 6) presents the discussion of comprehensive case study findings, in accordance with the sub-research questions and the conceptual framework. The chapter also provides tentative conclusions which highlight the need to develop a curriculum model which occurs in the current chapter.

This chapter sets out to fulfil the overarching aim of the study, which is: to develop a curriculum model for intervention in TAs in tailoring in Kenya (**Phase 2**). This aim was fulfilled by integrating the validated empirical findings in Chapter 6 with the secondary research data from Chapters 2 and 3 to construct the curriculum model.

The need for an intervention in TAs in tailoring in Kenya's IS started from a personal concern to study skills training practices of the less fortunate individuals in the society, who are desperate to earn a living and where possible improve upon their skills. Having worked with tailors from both FVT and TAs as an entrepreneur in custom-tailoring and fashion design, it became apparent that these categories of vocational skills training produce tailors with varied technical knowledge, skills and competencies. The researcher's knowledge of the trade, both formally acquired and experientially developed, facilitated the analysis and understanding of these discrepancies. It emerged that completers of TAs had marginal skills and could hardly construct and finish garments skilfully, let alone participating effectively in pattern drafting and design-related activities. They lamentably had mere basic skills at their disposal. As an educator, the plight of informally trained tailors with regard to skills was a cause for concern about the quality of training.

The researcher's concerns were consistent with findings from recent studies, which indicated that most Kenyan tailors had limited knowledge of clothing product quality

(Edwinsson & Nilson, 2009). The situation was so bad that they were unable to produce quality products needed by consumers without undergoing further training. Likewise, prior studies (McCormick & Ongile, 1993; Buckley, 1998) reported that tailors from a TA background were inadequately skilled and performed poorly compared to graduates of FVT. These factors put together raised a concern about the nature of curricular practices for TAs in tailoring.

The above concerns were further reinforced by the acknowledgement of the significant contributions of development of enhanced skills to improvement of productivity and performance of individuals and enterprises in the IS (Johanson & Adams, 2004; Adams, 2008; ILO, 2012; UNESCO 2012; Adams *et al.,* 2013). Based on these acknowledgements, the need to explore curriculum practices for TAs in tailoring MSEs in Kenya was underscored. The researcher believed that understanding the nature of knowledge of clothing products and processes, which apprentices develop and factors which influence the outcomes, would inform about relevant curriculum-related interventions which seemed apparent and overdue.

Consequently, the findings of the current study have revealed that Kenyan tailoring apprentices only develop limited aspects of knowledge relating to construction and finishing, but hardly acquire knowledge of design and fabrics. Moreover, knowledge relating to functional and aesthetic aspects of clothing products, which apprentices acquire is haphazard, incoherent and hardly makes sense to the apprentices in most cases. The study specifically confirmed that apprentices mainly acquire skills relating to techniques of body measurements, pattern drafting, fabric preparation and layout, as well as garment assembly and finishing, but very minimal associated knowledge. It was apparent from the study that the most crucial aspects of knowledge of clothing products and processes, which foster skilful performance, including creativity, innovation and production of products with enhanced quality (aesthetic and functional performance) are not acquired.

The current study findings consequently make a strong case regarding the need to develop a curriculum model, as a form of intervention in TAs in tailoring in Kenya. **FIGURE 7.1** highlights the features of the proposed curriculum model.

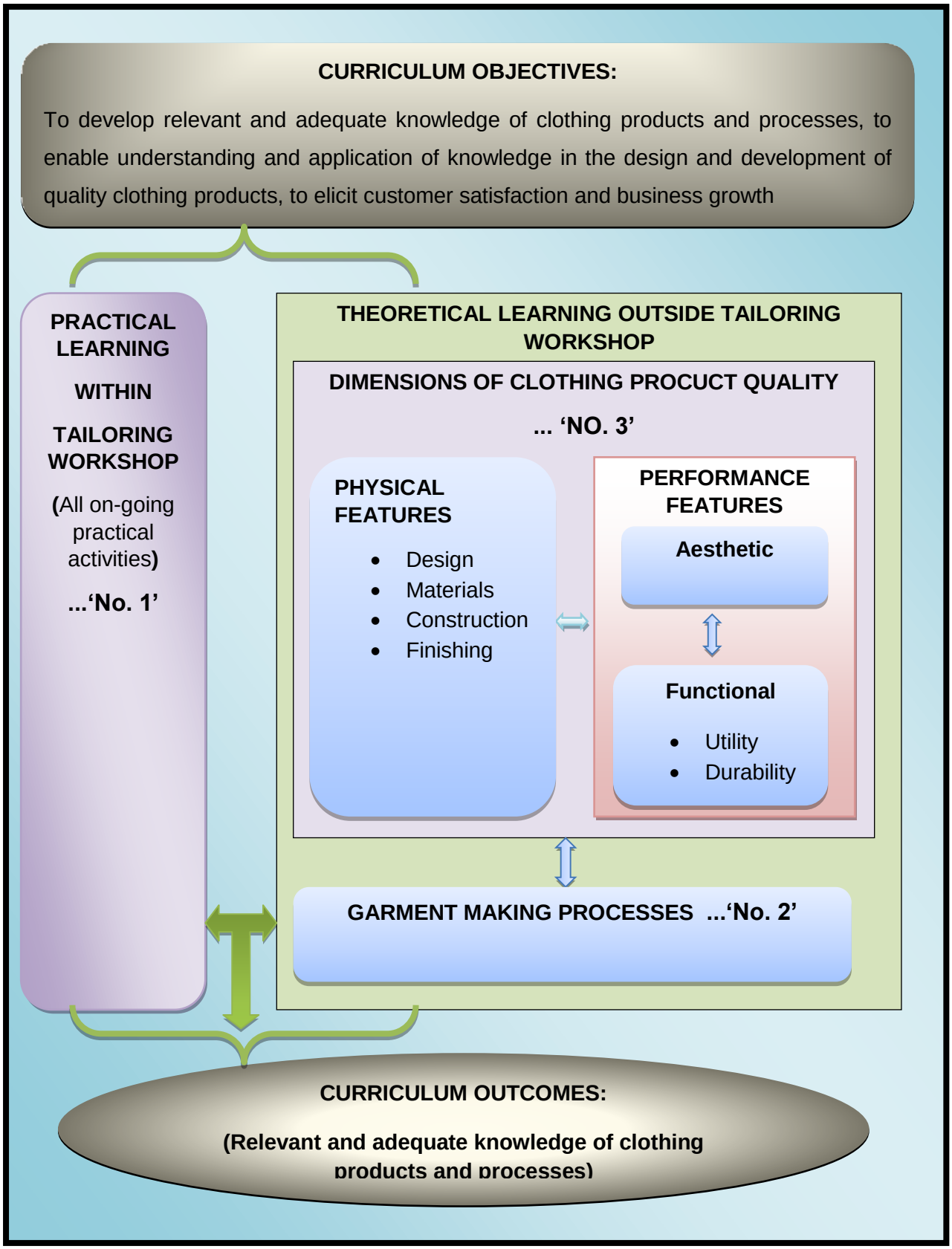

FIGURE 7.1: THE PROPOSED CURRICULUM MODEL FOR INTERVENTION IN SKILLS TRAINING FOR TAS IN TAILORING (See FIGURE 2.1 for detailed knowledge content for No. 2 and 3)

Tyler's (1949) model of curriculum development and other relevant guidelines from curriculum development theory are adapted to guide the process leading to the development of the curriculum model (see **FIGURE 7**) to be proposed as an intervention in skills training. The discussion leading to the development of the model is provided in the section that follows.

7.2 STEPS IN DEVELOPING THE CURRICULUM MODEL (PHASE 2)

Tyler (1949) advises curriculum makers to raise and answer the following four basic questions systematically:

1. What educational purposes should the curriculum seek to achieve?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be organized for effective instruction?
4. How can the effectiveness of the learning experiences be determined?

7.2.1 Determine the purposes or aims and objectives

Tyler as quoted in Hoadley and Jansen (2012:244-5) maintains that objectives are the ends towards which any learning strives, and that no curriculum can be effective without clear objectives. Likewise, Johanson and Adams (2004:37) argue that skills development is a goal-oriented process, which should focus on acquisition of knowledge and skills of a specific trade as the main outcome. UNESCO (2005) also argues that the outcomes of any educational undertaking should be assessed in the context of the desired objectives.

Tyler, in Hoadley and Jansen (2012:244-5) further suggests that comprehensive educational objectives should be set based on views gathered from learners, contemporary life within the society, and subject specialists. Based on Tyler's rationale, an empirical inquiry into curriculum practices for TAs in custom-tailoring in Kenya was conducted (**Phase 1**). The aim of the empirical inquiry was to explore, understand and provide an in-depth description of the aspects of knowledge of clothing products and processes which apprentices develop. The inquiry not only

explored the curriculum content (developed against undeveloped knowledge), but also sought to establish how custom-tailors' curriculum comes about. The participants' views of the curriculum with regard to quality of outcomes were also analysed. Tailors and apprentices shared their views regarding the desired knowledge and skills, which were mainly shaped by customers' demands and the prevailing fashion trends in the market. This implies that the tailors', apprentices' and the society's views regarding knowledge and skills which custom-tailors in Kenya should have are represented.

The researcher also conducted an extensive literature review on knowledge of clothing products and processes which clothing manufacturers in general are expected to have. The literature derived from a good number of secondary sources and empirical studies represent views from subject matter specialists and the industry. The researcher also observed what custom-tailors and their apprentices in the current study were able to do, work-related challenges which were due to technical knowledge and skills limitations, the quality of clothing products produced, and the type of clothing products available and worn by consumers within the study context. These sources contributed to knowledge of the comprehensive objectives that should underpin TAs in tailoring. The researchers' professional and academic backgrounds also count as important knowledge towards setting of comprehensive objectives. In relation to Tyler's view, these sources are, therefore, relevant in informing the setting of a comprehensive objective to base the development of an effective curriculum for Kenya's TAs in tailoring.

An inquiry into the study revealed that tailoring curriculum lacked relevant educational objectives. The curriculum was instead limited to routine tailoring activities which tailors do to earn a living. The curriculum was, therefore, based on limited information sources (tailors and customers), but lacking representation of views from apprentices and subject specialists. Tyler in Hoadley and Jansen (2012) argues that inherent biases which reside in stakeholders' values on what to teach tends to increase with lack of representation of views from the three categories of stakeholders.

Likewise, the current study further revealed that some tailors and apprentices viewed the curriculum for TAs in tailoring as limited, focusing on basic and narrow scope of activities. Furthermore, the curriculum lacked some of the most important aspects of knowledge of clothing products and processes, which if acquired by apprentices can help fulfil vocational goals of skilful performance and delivery of aesthetically appealing and quality clothing products. These findings were validated by the literature and research relating to knowledge of clothing products and processes as presented in Chapter 2. In general, these findings highlight the need for curriculum objectives which specifically seek:

> *To develop relevant and adequate knowledge and skills of clothing products and processes, to foster understanding and application of knowledge in the design and development of quality clothing products, to elicit customer satisfaction and business growth.*

The broad objective occupies the focal point of the curriculum model in **FIGURE 7.1**, the grey box spread over the set of subject matter that is needed to achieve the objectives. Tyler (1949:46-47) in Deng and Luke (2008:74) outlines the features of a good objective as:

- One stated in behavioural form, defining the kinds of behaviours that learners should develop;
- One that defines the content to be used for its attainment; and
- One that describes the area of life to which the behaviour is applicable.

The researcher observed these guidelines when formulating the main objective needed to form the basis for the development of the curriculum model to be proposed as an intervention in further training of graduates of TAs in tailoring. The anticipated behavioural outcomes which apprentices are expected to demonstrate to be regarded as skilled and knowledgeable are well stated in the set objective. For example, design and development of quality clothing products are observable and measurable behavioural outcomes, that can only manifest through application of a range of knowledge and skills which must be understood. The objective has

elements of learning fields broadly captured within the phrase, 'design and development of quality clothing products'.

The objective also defines the limits within which the subject matter should be drawn i.e. 'knowledge of clothing products and processes'. These aforementioned aspects also serve as a guide to subject matter selection. In addition, the objective describes the manner in which the knowledge derived from the subject matter can be applied within the society and how graduates of TAs (tailors) can benefit from them. In general, the set objective reflects comprehensive views of the case findings with regard to knowledge and skills requirements. These features show that the set objective is central to the selection of subject matter needed to develop the forms of knowledge, skills and competencies that individuals require to function effectively (Tyler, 1949:46-47 in Deng and Luke, 2008:74) within tailoring vocation.

7.2.2 Select the subject matter or learning experiences

Subject matter forms the curriculum content that provides students with opportunities to realise the specified objectives. For example, an objective which specifies the development of reading skills will require learners to engage in reading certain books or articles as learning experiences (Marsh & Willis, 2003:75). As an informal model of learning, TAs are founded on the basis of work-related activities (Lave, 1982; Collins, 2006; ILO, 2012). The formulated objectives can thus partly be attained by initially providing apprentices with opportunity to participate in all forms of practical tailoring activities which tailors perform. The current study findings revealed that apprentices only had access to practical skills training. The following list illustrates tailoring tasks which were noted as being performed within the tailors' workshops across the studied sub-cases:

- Selection of designs, fabrics, accessories, and notions to match garment quality;
- Taking of body measurements;
- Drafting patterns for cutting the various garment designs for customers;
- Preparation of fabrics for layout;
- Pattern layout and cutting; and

- Construction and finishing of cut garment components to produce complete garments.

The order of subject matter arrangement follows the general pattern in contemporary custom-tailoring, not the pattern of what was observed taking place in the study setting. Although the study shows that practical tailoring activities which apprentices learned across the sub-cases were similar, this may not be the case in other settings. There are possibilities that organisation of work may vary from enterprise to enterprise. The researcher therefore suggests that all possible practical activities which can be performed within the tailors' workshops, including the ones outlined be regarded as a sub-set of the curriculum content. This set of learning activities occupies the '**purple box'** bearing numerical label, **'No. 1'**.

According to Marsh and Willis (2003:23-24), a curriculum should aim at selecting subject matter that is more intrinsically worthwhile than others. This is subject matter that represents reality of the world accurately and broadly beyond the student's immediate experience. This ensures application of knowledge derived from the subject matter to a wider work context within the society. A careful analysis of the findings showed that the most intrinsically worthwhile aspects of the subject matter were hardly learned. Findings showed that TAs focused only on practical aspects of the on-going work. This constrained the development of the most crucial aspects of knowledge, such as design, fabrics, and performance dimensions of clothing products as well as principles which underpin all practical skills, which are conceptual and theoretical in nature.

Marsh and Willis (2003:73) further assert that it is not only the subject matter content, but also the methods for teaching that foster achievement of some of the wider curriculum goals or aims. Considering that practical activities were basically learned through observation, imitation and trial and error, the skills gained from performing these activities can be insufficient in attaining the set curriculum objectives. Clarke and Winch (2004), however, are of the view that skilful performance in vocational activities results from integration of practice with theory to develop technical knowledge that is necessary for understanding. Likewise, the

current study findings demonstrated that a lack of theoretical learning impacted on the quality of technical knowledge and skills as well as the range of practical activities that tailors and apprentices can participate in. This suggests that the formulated objectives can only be fully attained through integration of the practical skills component of the curriculum with theory.

However, care needs to be taken when proposing theoretical learning in the context of TAs. TAs do not support theoretical learning; as such practical skills acquired informally can only be complemented through formal or non-formal vocational training, which provide structured leaning (Haan, 2006; ILO, 2012). The following definition of formal, non-formal and informal learning/training by the European Commission (2000) and UNESCO (UIL, 2012) may help to clarify this:

> *Formal learning/training* occurs within education and training institutions; it is structured and leads to recognised diplomas and qualifications. Formal learning is intentional from the learner's perspective.
>
> *Non-formal learning/training* takes place alongside the mainstream systems of education and training and although structured, does not typically lead to formalised certificates. Non-formal learning may be provided in the workplace and through the activities of civil society organisations and groups (such as youth organisations, trade unions and political parties). It can also be provided through organisations or services which have been set up to complement formal systems (such as arts, music and sports classes or private tutoring to prepare for examinations). Non-formal learning is intentional from the learner's point of view.
>
> *Informal learning/training* is a natural accompaniment to everyday life. Unlike formal and non-formal learning, informal learning is not necessarily intentional learning, and so may well not be recognised even by individuals themselves as contributing to their knowledge and skills.

Considering the foregoing conditions, it is prudent to suggest that the second set of subject matter be comprised of structured practical activities pertaining to garment making processes. This is because; provision of structured complementary training will ensure that areas of weakness noted in the study are addressed. For example, techniques of pattern drafting and fabric preparation were rather limited and require upgrading. Likewise, design and fabric selection were hardly understood as these were mainly dictated by customers. Evidence from the study showed that theoretical training is needed in all areas pertaining to garment making processes to foster understanding of the principles which underpin their application in practice. The literature in Chapter 2 highlights the essence of theoretical learning strategies in the development of enhanced technical skills.

Activities pertaining to garment making processes which require complementary training include:

- Selection of designs, fabrics, accessories, and notions to match garment quality;
- Preparation of fabrics for layout;
- Taking of body measurements;
- Drafting patterns for cutting the various garment designs for customers;
- Pattern layout and cutting; and
- Construction and finishing of cut garment components to produce complete garments.

This set of learning activities occupies the '**blue box'** bearing numerical label, **'No. 2'** in **FIGURE 7.1**.

The third set of subject matter entails knowledge relating to the physical and performance features of clothing products. These aspects of knowledge foster understanding of clothing product quality, and are therefore, very crucial to clothing manufacturers in the delivery of quality products (Brown & Rice, 2014:78). Furthermore, knowledge of design is crucial in design creativity and innovation, which is necessary for creation of aesthetically appealing, marketable and saleable designs (Burke, 2011). Gersak (2002:169) equally advocates for the need for clothing manufacturers to understand fabrics, particularly, their properties which can

be measured objectively as these help to predict quality of garment appearance in advance and therefore, helpful in engineering high quality garments. The development of this set of knowledge also requires a theoretical approach, to foster effective learning and understanding. The study established that these aspects of knowledge cannot be learned effectively within the tailors' workshops. The apprentices, however, felt that they should have adequate understanding of how these features influence each other within garments, to foster understanding of clothing product quality, and to design and develop quality products. From research and theory, it is evident that these aspects of knowledge are of critical importance to tailors and apprentices who are willing to up their performance a notch in their trade. These aspects of knowledge are also crucial in the attainment of the set curriculum objectives.

Dimensions of the third set of the content of the curriculum model therefore include:

1. Physical (design, fabrics, construction and finishing) features; and
2. Performance (aesthetics and functional) features of clothing products.

The third set of knowledge content in **FIGURE 7.1** is located under **dimensions of clothing product quality,** within the **'purple square background'** which bears numerical label, **'No. 3'**.

Ornstein and Hunkins (2009:212) highlight the need for a curriculum that provides teachers and learners with experiences which foster development of deep understanding, sophisticated skills, appropriate attitudes, and socially constructed values. The need for a curriculum to engage learners in experiences which empower them, to construct their own meanings and comprehension of wisdom of scholars is also highlighted. The proposed model is suited to meet these requirements. It not only advocates for development of concrete skills, but also strongly emphasises integration of practice with theory based on purposeful learning to foster development of deep understanding of technical knowledge (Clarke & Winch, 2004) pertaining to clothing products and processes. The proposed model, if implemented successfully may accord the tailors and the industry opportunity to develop adequate

and relevant knowledge of clothing products and processes thereby fulfilling the set objective.

7.2.3 Organise the subject matter or learning experiences

Once the knowledge content to be learned is in place, there is need to organise the knowledge in ways that can foster effective learning (Tyler, in Marsh & Willis, 2003:75; Hoadley & Jansen, 2012). Marsh and Willis (2003:75) point out that effective sequencing of learning activities entails building of the current activities upon earlier ones (vertical organisation). This fosters the learners' understanding of the relationship among the learning activities. Similarly, holistic understanding can be attained when learning activities are integrated horizontally.

The proposed curriculum model (**FIGURE 7.1**) illustrates how knowledge content relates to the set objectives. In recognizing that TAs occur within the workplace; apprentices can only proceed to structured complementary training after participating in practical activities. From the current research study, it is apparent that an experiential approach to learning plays the role of initially exposing apprentices to the conceptual model of the physical and practical processes involved in completing the garments, and challenges encountered during construction. Lave (1982) acknowledged this approach as a powerful way to a situated learning. Furthermore, Lave (1982) emphasizes that tailors in Liberia organised tailoring activities in a way that learning progressed from basic to complex aspects of the tasks involved. This enabled apprentices to systematically develop technical skills needed to produce garments of various categories and complexity. It can therefore be argued that adapting Lave's (1982) approach in organising the curriculum and teaching the practical tasks that form part of the proposed curriculum model can foster effective development of technical skills among graduates of TAs n tailoring in Kenya.

The researcher is also of the view that the highlighted approach has the potential to prepare apprentices for theoretical learning and acquisition of knowledge needed to solve practical work related-problems. In this regard, it is reasonable to suggest that apprentices should acquire theoretical knowledge applicable to garment making processes as highlighted in (**No. 2**) component of the model, before proceeding to

learn about knowledge relating to dimensions of clothing product quality (**No. 3**). This approach to knowledge and skills development is likely to ensure that apprentices are systematically led from simple to complex and known to unknown aspects of the knowledge. The arrangement of subject matter in the curriculum model shows that the subject matter needed to attain the set objectives are horizontally integrated (see the systematic arrangement of subject matter categories numbered **1, 2** and **3**). The double-pointed green and blue arrows illustrate how knowledge components in the curriculum content relate with each other.

Tyler, in Booyse and Du Plessis (2008:8) and Hoadley and Jansen 2012:245) further suggest that decisions regarding instructional methods be reserved to people with technical expertise. Although the current study proposes the need to complement practical skills training in TAs with theoretical learning outside the context of TAs, the discussion regarding the process of implementation may be a tall order for the researcher to contemplate at present. The current study therefore, proposes that research and policy should look into how theoretical learning can be implemented.

7.2.4 Evaluate the effectiveness of the curriculum

Tyler emphasises that it is important to ensure that learning experiences that have been developed and organised actually produce the desired results (Marsh & Willis, 2003:76; Booyse & Du Plessis, 2008:8). Once the curriculum has been implemented based on relevant instructional methods, the outcomes should be evaluated for evidence of behaviours which reflect the set objectives. Techniques such as observations, interviews, questionnaires, as well as samples of students' work can be used to meet this goal. However, evaluation does not need to be pegged on outcomes alone, but should be on-going.

The current study findings revealed that there were no formal evaluation measures for curricular activities. This made it difficult to determine exit measures. It was also difficult for completers of TAs to convince any prospective employer about what they learned and could do. While this finding was not unique to TAs in tailoring, the fact that tailors and apprentices were concerned about the need to measure and prove

skills which they acquire suggests the desperation to have skills evaluated and be formally recognised. One of the tailors reported that this can enable them opportunity to access formal employment. Likewise Steenkamp and Singh (2012:16) regret the lack of validation and accreditation of informal learning, which they believe is a neglect that creates a loss in terms of underestimation of human resources. Moreover, it also stigmatises and marginalises knowledgeable people who cannot formally prove their competences.

Furthermore, the need to recognise informally acquired knowledge is increasingly becoming an international concern. This follows the recognition of the predominant role that TAs play in skills development among developing and countries in transition (Walther & Filipiak, 2007; ILO 2012, Walther 2011, UNESCO, 2012). In respect to this, the researcher suggests that measures to evaluate the effectiveness of the proposed curriculum model in achieving the set objectives be put in place as part of the curriculum implementation strategies. The researcher therefore, recommends that practical skills outcomes of TAs in tailoring as evident in this study be considered as the starting point for validation and recognition. This should be used to devise measures to accredit and formally recognise skills acquired informally through TAs.

With respect to the model, the triple-pointed, green arrow that connects practical and theoretical aspects of knowledge to the outcomes demonstrates the continuous and cyclic nature of evaluation and curriculum processes in general. Likewise the green curly brackets which connect the objectives to the sets of subject matter and the outcomes further illustrate the cyclic nature of curriculum as a process and the role that evaluation plays in providing feedback regarding how to improve curriculum processes. Evaluation of curriculum outcomes should not be reserved to teachers or trainers, but can also be undertaken by research, as demonstrated by the current study. The researcher thus proposes both formative and summative evaluation of the outcomes of the curriculum model developed in this study. Although it is important to formally evaluate the proposed curriculum model, this is out of the current study's scope. It can therefore be suggested that further research relating to evaluation be

considered as such efforts may go a long way to encourage its adoption by practice and policy.

7.5 SUMMARY

The proposed curriculum model in **FIGURE 7.1** is drawn based on a previously applied model (**Tyler's model**), but is ultimately grounded in comprehensive empirical findings presented in Chapter 5. These findings were later validated in Chapter 6 based on principles of curriculum development and theories of knowledge of clothing products and processes.

The curriculum model presents elaborate objectives based on the aspects of knowledge and skills that apprentices should develop and how the knowledge can be acquired and used. The model also shows how varied sets of subject matter relate to each other as well as the anticipated behavioural outcomes. These are important requirements in curriculum development. Curriculum theory upholds the need to have a curriculum plan, to ensure that learners and teachers have access to essential aspects of knowledge (Marsh & Willis, 2003; Hoadley & Jansen, 2012).

The curriculum model developed in this study can be considered as a tool that suggests the essential aspects of knowledge of clothing products and processes, which tailoring apprentices should learn. The model may be helpful to TAs in tailoring considering the difficulty that tailors had in identifying what to teach. It is however, likely to be more useful to formal and non-formal complementary skills training providers in identifying the areas of knowledge that graduates of TAs (prospective tailors) should learn to upgrade their skills and acquire the forms of knowledge that is beyond the scope of TAs. Likewise, it may also be useful in planning and providing skills upgrading for master-tailors, who may in turn improve the quality of skills training in TAs as well as their productivity.

The model suggests the circumstances under which the knowledge and skills needed for skilful performance within Kenya's IS tailoring MSEs can be acquired. The model can hence, be used as a tool by researchers and scholars as a basis for

development of further curriculum related interventions, i.e., the design of learning environments and relevant instructional strategies to foster effective learning of the outlined knowledge and skills. Balwanz (2013:73) points out that the purposes of education should inform the design of learning environments and experiences, the content to present to learners as well as the skills to develop.

Finally, the procedures followed in developing this curriculum model may be helpful to researchers in other fields in development of similar models, but specific to the economic sub-sectors in question. Chapter 8 follows next and covers the conclusions, evaluations, contributions and recommendations of the study.

CHAPTER 8: CONCLUSIONS, RECOMMEDATIONS, STUDY CONTRIBUTIONS, SUGGESTIONS FOR FURTHER RESEARCH AND CONCLUDING REMARKS

8.1 INTRODUCTION

The previous chapter addresses the overarching aim of the study, which was stated in Chapter 1 and recaptured in the methodology section of Chapter 4 as to develop a curriculum model for intervention in TAs in tailoring in Kenya. An exploration of the aspects of knowledge and skills of clothing products and processes, which TAs in custom-tailoring enable apprentices to develop, and identification of factors which influence the outcomes, led to the fulfilment of the study's overarching aim. The researcher argues that it is not possible to comprehensively address the problems of poor performance, lack of growth and poverty which are prevalent among the tailoring and garment manufacturing MSEs in Kenya's IS, without understanding the aspects of technical knowledge and skills, which they have as well as the curricular practices responsible for these.

This chapter sets out to provide conclusions of the study, make recommendations regarding strategies for improvement of skills acquired through TAs in tailoring, and the development of knowledge of clothing products and processes, which cannot be acquired through TAs. The chapter also presents suggestions for future research. The following main research question which guided the study forms the basis for the conclusions and recommendations to be drawn:

- How do TAs in tailoring in Kenya describe curriculum practices which lead to the development of knowledge of clothing product quality and processes needed for optimum participation in the trade?

Answers to the above research question provided the means to design the curriculum model that the study proposes as a tool for intervention in further training

of graduates of TAS in tailoring. The study was designed with the intention to highlight the aspects of technical knowledge and skills which apprentices develop, and emphasises the fact that tailoring and garment manufacturing MSEs in the IS require complex technical knowledge and skills, which cannot be left entirely to TAS in tailoring to develop. A more organised approach to curriculum practice is, therefore, needed to foster development of adequate knowledge and skills for the industry's sustainability. The study provided the researcher with opportunities to learn from the participants about the industry's knowledge and skills needs. Communicating these to interested readers may prompt further research regarding how to improve technical knowledge and skills in the economic sub-sector.

8.2 CONCLUSIONS

It is apparent from the findings of this study that apprentices developed practical skills applicable to garment making processes: mainly techniques on how to take body measurements, draft patterns, prepare fabrics for layout and cutting, construct and finish garments. It is also evident that apprentices acquired minimal knowledge of construction and finishing quality, but hardly acquired knowledge applicable to pattern drafting, design, fabrics, and performance quality of garments. Based on the findings, it can be concluded that the quality of TAs in custom-tailoring is not of the desired standard. TAs in custom-tailoring can, therefore, be relied upon to develop practical skills applicable to immediate and on-going tailoring activities. However, the model of skills training lacks capacity to develop knowledge relating to clothing product quality and processes. The findings, therefore, confirm the generally acknowledged limitation of TAs which entails the inability to develop knowledge of theoretical principles of the trades in the IS (Liimatainen, 2002; McGrath, 2002; Johanson & Adams, 2004; Haan, 2006; Adams, 2008; ILO 2012).

It can further be concluded that graduates of TAs in custom-tailoring are capable of performing practical processes, though only to a limited extent, due to mastery of skills and a lack of knowledge of the applicable theory. Likewise, graduates of TAs in custom-tailoring are unlikely to design and develop aesthetically appealing and quality clothing products, due to a lack of knowledge of design, fabrics and

performance features. These components constitute important facets of clothing product quality. The findings as a result confirm previous reports (Edwinsson & Nilson, 2009) regarding the lack of knowledge of clothing product quality among most tailors in Kenya. The study findings further confirm previous findings (McCormick *et al*., 1997) that most graduates of TAs in tailoring in Kenya's IS are semi-skilled, and as such cannot perform unspecialised tailoring activities optimally as expected. The current findings are therefore conducive to explaining the prevalence of poor product quality, poor performance, poverty and lack of growth within tailoring economic sub-sector in Nairobi (McCormick & Ongile, 1993, McCormick *et al*., 1997).

Mbugua *et al*. (2013:290) attribute high failure rate and lack of growth among dressmaking, tailoring and garment manufacturing MSEs in Eldoret in Kenya, to poor marketing and entrepreneurial skills. While marketing and entrepreneurial skills are important in attracting customers to the business and should be taught to tailoring and garment manufacturing MSEs, to foster survival and growth as Mbugua *et al*. (2013:290) suggest, Chase and Quinn (2003), Kadolph (2010) and Brown and Rice (2014) caution that only clothing manufacturers who are cognisant of clothing product quality and consistently strive to provide quality and marketable products, will retain patronising customers who can make repeat purchases and recruit new ones. This is essential for business sustainability and growth. In this regard, marketing and entrepreneurial skills are only important in as far as quality of clothing products can meet consumers' quality expectations and satisfy functions for which they are intended.

Likewise, studies (Gadzala, 2009:211; Kamau & Munandi, 2009; Imo *et al*., 2010:76; Hoogerbrugge, 2012:20) further attribute the high failure rate among Kenya's IS dressmaking, tailoring and garment manufacturing MSEs to stiff competition, mainly from imported second-hand or used clothing products and new ready-to-wear clothing categories. However, from the current findings, it can be concluded that limited knowledge and skills of clothing product quality and crucial processes such as design creativity and pattern drafting may be the main factors contributing to poor performance and lack of growth within tailoring economic sub-sector. It is rather

obvious that a lack of knowledge of clothing product quality and processes will lead to poor product quality, which in turn will not appeal to the varied consumers' quality needs and expectations. This will certainly lead to low demand and income as most consumers will not be enticed enough to make a purchase. They will, therefore, seek other available alternatives in the market to satisfy unmet needs, hence the stiff competition from imports (both second-hand and new ready-to-wear clothing categories). From the findings, it is plausible to conclude that tailoring apprentices require an intervention in skills training that is specifically aimed at improving upon technical skills acquired through TAs, and at the same time be provided with opportunity to complement these skills with knowledge and skills not accessible through TAs.

The study discovered that the legitimate concerns regarding the quality of skills training that occurs through TAs in general were inherent in TAs in custom-tailoring. The core challenge to the development of adequate technical knowledge and skills related to the quality of informal training is the fact that it is embedded in the workplace. Renowned researchers (Singh, 1998; Liimatainen, 2002; McGrath, 2002; Collins, 2006; Haan, 2006), argue that TAs emerged to teach practical skills that are applicable to the tasks relating to a particular job or trade. However, the tasks do not necessarily arise from pedagogical concerns and are often limited. This usually leads to a narrow scope of skills, depending on the nature of activities and work availability.

Furthermore, TAs employ observation and the trial and error mode of learning to develop practical skills applicable to the job at hand (Haan, 2006; Walther & Filipiak, 2007; Adams, 2008). However, the learning/training model is non-responsive to the development of non-practical aspects of technical knowledge. The lack of teaching skills and technical knowledge among business owners (master-trainers) further hampers the development of adequate trade-specific knowledge and skills (Haan, 2006; ILO, 2012). The findings of the current study confirmed all these factors, as contributing to the development of basic and limited knowledge of clothing products and processes.

All tailors focused on basic and limited practical skills, which apprentices developed through observation and repeated practice. The tailors also lacked the core aspects of technical knowledge and skills, and thus could not transfer relevant technical knowledge and skills to apprentices. Moreover, all tailors lacked the necessary skills to train and consequently failed to organise tailoring curriculum in ways that could foster development of adequate knowledge and skills. Instead, activities of the day defined what apprentices learned irrespective of their limitations. The findings further show that business resources such as sewing machines were extremely limited in quantity in relation to the large numbers of apprentices, thereby constraining practice. Likewise, materials and fabrics used to learn were inappropriate and often caused apprentices to miss out, on opportunities to acquire relevant skills regarding fabric selection and proper layout techniques.

Bearing in mind the established challenges, it can be concluded that TAs can provide access to practical training leading to the development of technical skills which include design copying and garment production. However, it can be difficult to develop core aspects of knowledge of clothing products and processes including the selection of appropriate materials and the design and creation of attractive garments within the context of TAs in custom-tailoring. Some tailors and apprentices were aware of the inherent limitations in TAs, particularly the focus on limited and basic skills. Furthermore, the data from multiple sub-cases also generated a comprehensive set of technical knowledge and skills that participants needed to perform tailoring tasks skilfully. The need to access theoretical learning was also highlighted as necessary in fostering development of enhanced technical knowledge of the trade. These findings are thus consistent with the views expressed by Haan (2006), Walther (2011), ILO (2012) and UNESCO (2012) regarding the need to improve skills acquired through TAs, to enhance productivity of economic activities which have the potential to improve economic growth within the IS.

Due to the recognition of the predominant role that TAs plays in the development of skills among the marginalised youths and adults in the IS, Haan (2006), ILO (2012:46) and UNESCO (2012) advocate for research, policy and developmental agencies to come up with interventions to help improve technical skills acquired

through TAs, and the need to complement these with theoretical training to enable completers of TAs to acquire theoretical knowledge. This is necessary for improving productivity and employability within varied economic sub-sectors in the IS. This study should consequently be taken as timely and relevant in the context of the tailoring and garment manufacturing economic sub-sector of Kenya.

8.3 RECOMMENDATIONS

The researcher recommends that the curriculum model developed in this study should be taken as a tool for intervention in skills training for graduates of TAs in custom-tailoring. It is, however, important to emphasise that the model is meant to complement TAs, and therefore, can only be effectively implemented by incorporating the FVT and Non-Formal Vocational Training (NFVT) in conjunction with TAs. Considering the difficulty in finding technical experts to undertake research to map informally acquired skills and to establish technical skills needs of those working in the IS (Walther & Filipiak, 2008), the study recommends that the relevant government ministries should avail themselves to take advantage of the developed curriculum model, by supporting its implementation, probably through a tailor-made programme within FVT or NFVT. The participants in this study suggested that such measures would help to improve their skills and knowledge of the trade and would up their performance.

In addition, the researcher recommends that further research be considered to formally evaluate the proposed curriculum model. Worthen and Sanders (1987) define evaluation as the formal determination of the quality, effectiveness, or value of the curriculum. The process of evaluation entails gathering of the data needed to make decisions to modify or accept the curriculum as it were (Ornstein & Hunkins, 1998). While undertaking such measures are beyond the current study's scope, the efforts may go a long way to refine the quality of the model to encourage its adoption by practice and policy.

Likewise, custom-tailors have demonstrated the potential in using their self-acquired skills and enterprises, to help apprentices develop technical skills needed to access

employment, despite the established and reported limitations. The study as of a direct consequence recommends that the government should buckle down in utilising this potential to the full, by supporting master-tailors with the opportunity to upgrade technical skills and knowledge, and access training in pedagogical skills. This may help to improve the quality of TAs in tailoring as well as productivity within the economic sub-sector. Studies (Walther, 2011; ILO, 2012; UNESCO; Adams *et al.*, 2013) acknowledge the significant contributions of such measures in improving master-craft persons' technical knowledge and skills, the quality of skills training in TAs and the workers' and enterprises' productivity.

The study acknowledges that the Kenya government has recently begun to recognise skills development initiatives in the IS (Adams *et. al*., 2013; Kaane, 2014). A recently concluded Kenya Youth Empowerment Project (KYEP), implemented by the Kenya Private Sector Alliance (KEPSA), was sponsored through partnership between the government and donor agencies. One of the programmes sponsored by the government/World Bank partnership was the training of trainers, which focused on mentoring, pedagogy and business skills (Balwanz, 2012). However, the programme excluded the upgrading of master-trainers' technical skills and knowledge. It was also unfortunate that none of the master-tailors who participated in the current study benefitted from pedagogical skills training. The findings in this study, therefore, highlight the urgent need for the government to extend training in both pedagogical and technical skills and knowledge to master-tailors.

Likewise, the just concluded projects by KEPSA, the government/World Bank cooperation awarded financial incentives and contracts to master-trainers in the IS to provide technical skills training to apprentices (Kaane 2014). Some master-tailors in Kariobangi market, including those in **sub-units 3** and **4** received the incentives to provide technical skills training to apprentices, despite the lack of access to pedagogical skills training. The study therefore, recommends that the government considers providing intervention in both areas. Moreover, training incentive extended to tailors was not all inclusive; tailors in **sub-units 1** and **2** were not recipients and were not even aware of such provisions. They nonetheless reported that training provided by TAs is time-consuming, yet attracts low income from fees paid by the

apprentices who are rather too poor to afford high fees. The study therefore recommends that the government should be committed to compensate tailors' efforts in this regard to enhance their commitment which is indispensable in improving quality guidance.

While the role played by donor agencies in improving skills training in the informal sector is acknowledged (Haan, 2006; ILO, 2012), the projects are usually occasional. Likewise, the one being reported in the case of Kenya already wound up, yet did not reach all master-tailors within the study setting. This shows that donor funded projects are rather temporary and cannot be relied upon to solve challenges relating to skills development permanently. The researcher hence, recommends that the government should identify strategies to incorporate TAs into the country's education and training policy to provide a sustainable solution.

The study established that the major root cause of low quality skills training in TAs relates to the country's policy framework. In Kenya, the education and training policy focuses on FVT (Ministry of Higher Education, Science and Technology) (MoHEST, 2014), which excludes informal training such as TAs (Adams *et al*., 2013). The current study identified the urgent need for the government to consider incorporating TAs into the national training policy, to ensure effective planning. This is necessary for provision of quality skills training on a continuous basis in the IS including the tailoring economic sub-sector. The interviewed master-tailors were of the opinion that through continuous government support, they can provide better skills training. These views are therefore consistent with the ILO's (2012) views that governments should recognise informally acquired skills and provide avenues for further training to apprentices to improve upon the acquired skills. This is also vital to the development of the aspects of knowledge that are desired yet cannot be acquired informally through TAs.

Finally, the researcher argues that apart from the government, private manufacturing companies, such as fabric manufacturers and formal training institutions including universities, which offer courses in fashion design, clothing construction and merchandising should be encouraged to create linkages with entrepreneurs

providing TAs in tailoring, to cotton onto the much needed support in technical knowledge and skills training, in the form of short courses to increase the economic sub-sector's knowledge base. The ILO (2012) acknowledges such linkages as instrumental in upgrading skills acquired in the IS.

8.4 CONTRIBUTIONS OF THE STUDY

By bringing the aspects of technical knowledge and skills that tailoring apprentices acquire through TAs to light, this study makes a major contribution in bridging the theoretical knowledge gap, enhancing understanding and explanation of prevalence of poor performance and lack of growth within tailoring and garment-making economic sub-sector, and drawing policy attention to the quality of skills training in the economic sub-sector.

The study findings make a strong case regarding the need to develop both technical knowledge and skills, for tailoring and garment-making in the economic sub-sector. Policy, research and practice as well as general readers can benefit by using the findings to advance technical knowledge and skills development in the economic sub-sector. The curriculum model developed in this study can also be used as a basis for improvement of knowledge of clothing products and processes for the IS tailoring and garment manufacturing MSEs in Kenya. This will have an undeniable impact on productivity and growth in the economic sub-sector.

The study also expands the theory of knowledge of clothing product quality and processes, by highlighting the aspects of technical knowledge and skills which dressmakers and tailors in the IS have, as well as what they need to improve optimally. These were least known prior to this study. By confirming that technical knowledge and skills requirements for tailoring economic sub-sector are expansive, when compared to the formal industry due to lack of specialisation, the findings help to dispel the notion that those destined to work in the IS simply require basic technical skills. Understanding the knowledge and skills needs of this economic sub-sector is key to finding relevant interventions, which can lead to permanent solutions to skills development challenges.

The study revealed a key a key existing gap in TAs in tailoring which is common to the majority of TAs in other fields. There is need to bridge the gap in order to make this mode of skills training an effective and viable one in the education continuum.

The study can also be of great benefit to comparative and international studies, with regard to development of theoretical knowledge, as well as technical and pedagogical tools needed to include the excluded youths and/or dropout or pushed out students. Researchers can learn and borrow from this study, the strategies and measures of analysing sector specific curricular practices, including technical knowledge and skills, and pedagogy needed to foster effective skills development for apprentices. Likewise, the procedures used to map technical skills and knowledge, can be used as a basis for validation and recognition of informally acquired skills in other economic sub-sectors. The procedures can also form the basis for certification of the validated skills and knowledge.

The emergence of the need to assist apprentices to develop theoretical knowledge alongside technical skills in the tailoring and garment-making sub-sector, further advances the theory of the TA model of learning, highlighting its limitations as a training model, and justifying the need to complement TAs in tailoring with theoretical learning through FVT or NFVT providers, as these have the capacity to implement structured skills training.

8.5 SUGGESTIONS FOR FURTHER RESEARCH AND STUDY LIMITATIONS

The following are the suggestions for future research:

First and foremost, the researcher suggests a following comparative study on how governments in countries in Africa and in other parts of the world, work with private industries to help those learning and working in the IS, such as tailoring and garment manufacturing MSEs to develop and enhance technical knowledge and skills.

The researcher is of the view that research and policy should look into how theoretical learning can be implemented to foster development of enhanced knowledge and skills within tailoring and garment manufacturing sub-sector.

This study was limited to TAs in custom-tailoring in women's wear in Nairobi. Considering that the study is rather new, the researcher suggests that further qualitative research based on the case of TAs in: custom-tailoring in men's wear, general tailoring and garment-making MSEs, and tailoring enterprises focusing on mini production in specific products such as uniforms be designed to further understanding of the aspects of technical knowledge and skills that apprentices develop.

In addition, further research should be designed with a focus on TAs in tailoring offered by master-tailors who have more advanced formal training, for example, graduates of certificate, diploma and university training to establish how their curricular practices compare with the findings from the current study.

The study was limited to the urban area. Furthermore, tailoring in the IS in Kenya can be extended to the rural areas as well. Further research is thus needed to establish whether there are any differences in curricular practices and outcomes among urban and rural TAs in tailoring.

There is need to also conduct a study on the perceptions of quality of TAs among dressmakers, custom-tailors, and tailors working for mini-garment manufacturing MSEs in the IS. This may further highlight understanding of the contributions of TAs to technical knowledge and skills development in the economic sub-sector.

8.6 CONCLUDING REMARKS

Proponents of natural science commonly hold that the small sample size in qualitative case study research, is a major limitation in research, as findings from the case cannot be generalised, a view that Flyvbjerg (2006:225, 2011:305) and Starman (2013:39) do not support. Unlike natural science which subscribes to

statistical generalisation, case study and qualitative research in general subscribe to analytical generalisation (ibid.). Furthermore, case studies draw inferences based on the structural or functional connectivity of characteristics within individual units or a particular case. These may include relationships among individual characteristics, processes, or events and how they are connected to each other (Mesec, 1998 in Starman, 2013:39). Additionally, it is accepted that the occurrence of connection, even in just one single case becomes theoretically important (ibid.).

Analytical generalisation can also be drawn from the tacit knowledge on how and why things are, how people feel about them, and how these things are likely to be surfacing later on or in other familiar places (Starman, 2013:39). Generalisation in case study accordingly, rests on the ability to recognise similarities of the objects and issues in different contexts and by understanding changes as they happen. However, this kind of generalisation requires documentation of the salient features of the case to enable new situations to be illuminated by a thorough understanding of a known case (Sturman, 1997:63). Flyvbjerg (2011:305) concludes that generalisation can always be done on the basis of a single case by transferring knowledge.

Following the advanced arguments, the researcher is of the view that the use of qualitative case study research design and small sample of sub-cases in the current study cannot be regarded as limitations. Through case-study research design, and the use of multiple sub-cases making up the case, the researcher established the opportunity for in-depth learning by searching for similarities and differences and factors contributing to these. This led to accumulation of knowledge of the complex and least understood phenomenon. The fact that the findings regarding the nature of technical skills and knowledge that TAs in tailoring develop, and factors leading to the outcomes are reflective of the general characteristics of TAs shows that the findings can be applied or transferred to the wider context of TAs in tailoring. The researcher additionally feels that TAs in tailoring (the unit of analysis) can best be understood based on qualitative methodology due to the informal nature thereof. Application of methodological approaches, which require probability sampling techniques, which support statistical generalisation, may not be appropriate in understanding the variability in TAs in tailoring to the full. Furthermore, access to

some of the salient features of the phenomenon can only become evident through application of methodological approaches that situate the researcher within the natural setting where TAs occur. The researcher is thus convinced that case-study research design was a relevant choice.

The researcher lacked prior experience on qualitative inquiry. This caused extreme delay with regards to analysis and interpretation of the data. This turned out to be the most difficult part of the research process. An initial pilot research could have been helpful in this regard. All in all, through extreme perseverance, determination, further reading and practice, the researcher managed to pull through. In the long run, the researcher came to appreciate the value of qualitative inquiry to this study as it was not possible to conceptualise some of the responses which emerged from the data in advance.

The study used theory of clothing product quality and curriculum theory to describe the participants' perceptions of the nature of knowledge and curricular practices. The study may be used in future as a basis for improvement of knowledge of clothing product quality and processes for IS tailors in Kenya and in other parts of the developing economies and economies in transit where TAs in tailoring is practised.

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ADDENDUM 1 A: CONSENT LETTER

CONSENT FOR PARTICIPATION IN A RESEARCH PROJECT

DEPARTMENT OF CONSUMER SCIENCE

Dear participant (master-tailor),

I am Edwinah Apunda, a PhD student at the University of Pretoria, Consumer Science Department. I am affiliated to Maseno University – Kisumu (Kenya), but currently on study leave to pursue PhD degree in Clothing Management in South Africa.

I am currently conducting a research study that seeks to: ***Explore what and how custom-tailors teach people who wish to become tailors.*** The study also seeks to establish whether there are any challenges associated with the training

You are kindly invited to participate in this research study to support me in fulfilling part of the study requirements. You are requested to participate freely and voluntarily in this study by allowing me into your premises for about two weeks, to observe what you teach people about tailoring and how you teach them. You will also be called upon to tell me your story, about what you teach them to become successful tailors, and any problems which you encounter that you may consider as making the training ineffective. You may also let me know if there are any ways in which you think the training can be improved.

I would like to assure you that information gathered in this exercise will be kept confidential and anonymous, to be used for academic purposes only. Also be aware

that you are at liberty to withdraw from this exercise if and when you feel that you cannot continue.

Kindly sign below to consent to voluntarily participate in this study. Any concerns, questions and comments regarding this study may be directed to Prof. H.M. de Klerk at email: Helena.deklerk@up.ac.za, phone: 012 420 25321.

_____ _____

Participant Date

Researcher: Edwinah A. Apunda

Email:edwinah.Apunda@up.ac.za

Cell: +277 7 9292 6623

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UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Natural and Agricultural Sciences

ADDENDUM 1 B: CONSENT LETTER

CONSENT FOR PARTICIPATION IN A RESEARCH PROJECT

DEPARTMENT OF CONSUMER SCIENCE

Dear Participant (**Apprentice**),

I am Edwinah Apunda, a PhD student at the University of Pretoria, Consumer Science Department. I am affiliated to Maseno University – Kisumu (Kenya), but currently on study leave to pursue PhD degree in South Africa.

I am currently conducting a research study that seeks to: ***Explore what and how custom-tailors teach people who wish to become tailors.*** The study also seeks to establish whether there are any challenges associated with the training.

You are kindly invited to participate in this research study to support me in fulfilling part of the study requirements. You are requested to participate freely and voluntarily in this study by allowing me to observe what you learn about tailoring and how you learn it. You will also be called upon to tell me your story, about what the tailor teaches you to become a successful tailor, and any problems which you encounter that you may consider as making this training ineffective. You may also let me know if there are any ways in which you think the training can be improved.

I would like to assure you that information gathered in this exercise will be kept confidential and anonymous, to be used for academic purposes only. Also be aware that you are at liberty to withdraw from this exercise if and when you feel that you cannot continue.

Kindly sign below to consent to voluntary participate in this study. Any concerns, questions and comments regarding this study may be directed to Prof. H.M. de Klerk at email: Helena.deklerk@up.ac.za, phone: 012 420 25321.

_____ _____

Participant Date

Researcher: Edwinah A. Apunda

Email:edwinah.Apunda@up.ac.za

Cell: +277 7 9292 6623

ADDENDUM 2 A: QUESTIONNAIRE FOR CAPTURING BIOGRAPHICAL DATA

TAILOR/TRAINER

Please fill in the following information in the spaces provided:

1.0 Kindly fill in your names in the space below:

1.1 Indicate your gender by ticking the relevant one:

Male…….	Female……..

1.2 What was your age at your last birthday?

1.3 What is your contact phone number?

1.4 What level of schooling do you have – tick the relevant one

Primary.....	Secondary.....	Tertiary.....

1.5 How did you obtain tailoring skills?

a) Tailoring enterprise	Family enterprise
b) Private tailoring college	Public vocational training centre

c) Public polytechnic Public university d) Other (specify)

1.6 Please indicate the location where your business is situated

1.7 Please indicate your position in this business in terms of:

Owner (trainer)……. Employee (trainer)…….

1.8 Who are your regular customers?

Women	Business Professionals	Private Companies	Church/organizations/ Schools	Other- Specify

1.9 What type of clothes do you usually make?

1.10 For how long have you been a custom-tailor/trainer?

1.11 How many students do you have at the moment?

1.12 Indicate the levels of schooling that most of your students usually have

Primary……. Secondary…….. Tertiary…….

1.13 How many students (apprentices) have ever completed the training since you started training?

ADDENDUM 2 B: QUESTIONNAIRE FOR CAPTURING BIOGRAPHICAL DATA

APPRENTICES

Please answer the following questions in the spaces provided:

1.1 Kindly fill in your names in the space below:

1.2 Indicate your gender by ticking the relevant one:

Male…….	Female……..

1.3 What was your age at your last birthday?

1.4 What is your contact phone number?

1.5 What level of schooling do you have – tick the relevant one

Primary……..	Secondary……..	Tertiary (specify).....

1.6 Indicate the location where your training is situated

1.7 What type of clothes have you learnt (are learning) to make?

1.8. For how long have you been in the training?

19 For how long do you intend to take the training?

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ADDENDUM 3 A: AN INTERVIEW SCHEDULE (TAILOR/TRAINER)

1. May you tell me about circumstances which led you to become a trainer in custom-tailoring? Tell me how it all happened?
   a. How long have you worked as a custom-tailor?
   b. What custom-tailoring experiences do you find very helpful to use in training?

2. How do you get the students (apprentices) that you train?
   a. How long does the training take?
   b. How do you decide that a student (apprentices) is ready or not yet ready to graduate from the training?
   c. Are they any students that ever drop out of the training?
   d. Why did they drop out?

3. Please tell me what subjects you teach your students (apprentices)? This question is framed in different ways and repeated to enable the tailor to enumerate all aspects of skills and knowledge taught (design, fabrics, construction, finishing; aesthetic and functional features; techniques of garment making (taking of body measurements, pattern drafting, fabric selection for design, preparation and layout, pattern cutting, sewing and finishing).
      a. How did you learn all these things that you teach your students?
      b. What are the initial activities that you teach new students who know nothing about tailoring?
      c. Why is it important that apprentices should learn these activities first?
      d. What then do you teach them next and why is the order important?

e. How do you decide in general what students (apprentices) should learn from the beginning of the training to the end?
f. Why is it important to use that order of activities to teach them?

4 What equipment and machines do you use to teach apprentices?
a. Do you think that the sewing machines available for use are appropriate for the kind of tailoring activities that apprentices should develop?
b. Are the machines enough for the apprentices to practice sewing and finishing skills as required?
c. How do you teach apprentices to know how to use sewing machines and other equipment needed for tailoring?

5 What materials and fabrics do you use to teach your students about tailoring activities?
a. What do you teach apprentices about materials and fabrics?
b. How do you use materials and fabrics to teach apprentices to learn tailoring?
c. Why do you think it is important for them to learn about fabrics?
d. Which textile materials do apprentices find difficult or easy to use in making clothes?
e. Do apprentices use customers' fabrics to learn about garment making?
f. How else do apprentices obtain fabrics which they use to learn garment making?

6 Tell me how you teach your students all these things that you have just described (design garments, select suitable fabrics for the designs, take body measurements, draft patterns for cutting the designs, and use them to cut garment components)?
a. At what stage of the training do they start learning each of these activities?
b. Why is it necessary to observe that order?

c. What do you tell students (apprentices) about different clothing designs?
d. How do you teach your students regarding to design and cut complex and difficult designs?
e. As you teach, what activities do you find that your students find to be too difficult to learn? Why should this be?
f. What are the initial clothing items that your students usually make?
g. As you teach, do you provide any examinations?

7 Do you use any text books or notes to teach your students?
a. Do you think that text books and notes could be helpful in teaching and learning tailoring?
b. Why do you use or not use the methods?
c. How do you tell when they have known how to do a particular task or activity well?
d. What tasks require that you actually teach them or show them what to do? Why is it so?
e. What can you say about their attitudes toward learning by doing the activities, by taking notes, answering questions and drawing?
f. Are there any activities that students find difficult to learn?
g. How do you make them learn difficult things?

8 In your own opinion, do you think that what you teach your students is enough to make them become professional tailors who can produce any garment design?

9 How do you identify what you always teach your apprentices?

10 Do your students sometimes suggest to you specific things that they wish to be taught?

11 Is there a particular order in which you organise what you usually teach your students (apprentices)?

12 Do you think that you have enough knowledge and skills to teach your students to become professional tailors?

13 Could there be any challenges that you encounter with this type of training that you think interferes with the quality of the knowledge that you provide to apprentices?

14 Given a chance, would you recommend that your students and yourself be given further opportunity to train?

15 What kind of training would you propose to add to the one that you provide?

I wish to thank you very much for your time and for sharing with me your valuable experiences. I will listen to the tape, and should I encounter anything unclear, please allow me to come back to you for further clarity. I further wish to reassure you that this information is going to be used to write a report about my research study, and if you wish then I can always avail to you the information you provided to see how it has been written for this use.

ADDENDUM 3 B: AN INTERVIEW SCHEDULE (APPRENTICES)

1. Could you please tell me about what led you to decide to join training in tailoring?

2. May you also let me know how you decided that this particular workshop would be the right place for you to obtain tailoring skills?

3. Tell me about what you are taught to become a custom-tailor?

a. What did you learn first in the early days of your training if you can remember?
b. How helpful is this initial learning to you right now?
c. Do you sometimes suggest to the tailor what you wish to learn?
d. In your own opinion, do you think that what you are taught in is enough to make you become a professional tailor?

4 How does the tailor identify the things that you are taught?

    a. Is there any curriculum that outlines to you in advance what you are expected to learn?

5 Tell me how you are taught about the things that you learn?

a. How do you learn these things that the tailor teaches you?
b. Are there certain things that you always learn alone?
c. Are there any activities that you find to be difficult to learn?
d. Why do you think is the reason for this?
e. How do you finally get to learn them?

6 In your own opinion, do you think that there are certain ways in which the techniques of teaching and learning could be improved to enable you acquire enhanced knowledge and skills?

7 Tell me what you learn about the fabrics and materials that you use to learn tailoring activities?

a. In your opinion, do you think it is important to learn about materials and fabrics used to make garments?
b. Specifically, what do you think should be learned about fabrics and materials used to make garments?
c. Are there any materials and fabrics that you find to be difficult to use in learning to make garments?
d. Do you think that the fabrics and materials you use to learn garment making are appropriate to the designs that you make?

8 What equipment and machines do you use in learning to make clothes?

a. In your opinion, do you think that sewing machines and equipment you use in learning construction and finishing are suitable in providing quality clothing products?

9 Are there any challenges that you encounter with this training that may contribute to your inability to develop your skills to the full?

a. What do you suggest as the most relevant remedy to the challenges that influence the quality of training and the skills that you develop from the training?
b. Is there anything else you would like to add to our discussion that can improve skills and knowledge relating tailoring?

I wish to thank you very much for sharing with me your valuable experiences. I will listen to the tape, and should I encounter anything that is unclear, please allow me to come back to you for further clarity. I further wish to reassure you that this information is going to be used to write a report about my research study, and if you wish then I can always avail to you the information you provided to see how it has been written for this use.

ADDENDUM 4: CERTIFICATE OF LANGUAGE EDITING AND TRANSLATION

Dr C.G.A. SMITH

PhD (English)

Language practitioner: editing and proofreading

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This is to certify that the following thesis has been language edited:

A CURRICULUM MODEL FOR INTERVENTION IN THE SKILLS TRAINING OF CUSTOM TAILORING APPRENTICESHIP IN KENYA

Author: APUNDA EDWINAH AMONDI

Date of this statement: December 2016

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