



THE SKILLS GAP BETWEEN THE ORDINARY LEVEL TEXTILE TECHNOLOGY AND DESIGN LEARNERS AND THE TEXTILE CONSTRUCTION INDUSTRY.

BY

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A RESEARCH SUBMITTED TO DEPARTMENT OF APPLIED EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE BACHELOR OF EDUCATION DEGREE IN TEXTILE TECHNOLOGY AND DESIGN.

GWERU

ZIMBABWE

AUGUST 2021

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THE SKILLS GAP BETWEEN THE ORDINARY LEVEL TEXTILE TECHNOLOGY AND DESIGN LEARNERS AND THE TEXTILE CONSTRUCTION INDUSTRY.

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DEDICATION

I dedicate this research to my children and husband for their inspiration, prayers, support, encouragement and understanding.

ACKNOWLEDGEMENTS

Many individuals played an important part for this report to be successful. The researcher, mainly, would like to extend her appreciation to the individuals listed below;

- Her supervisor Mrs A. Mukoko for his tireless and firm supervision and inspiration during the accumulation of the research study.
- To good friends whose advice and assistance influenced the research study's final form.
- Her loving family for their support and encouragement during the research process especially my four daughters.
- To administrators and teachers who provided the relevant information for the study.

Abstract

The purpose of the study is to investigate the skills gap between the Ordinary level Textile Technology and Design learners and the textile construction industry. Determining skills level of TTD students which the textiles industry deems necessary for one to be successful in that industry as well as if the TTD learners possess these skills was another objective of this study. The population of the study consisted of five secondary schools, 5 TTD teachers and 150 learners in Mutegesa cluster in Featherstone. The population also included three managers from textile construction companies in Gweru. In this study the sample was made up of three TTD teachers from three schools, twenty seven learners and two managers from textile manufacturing companies. The purposive sampling technique was used to select the participating teachers and managers. Data were collected through questionnaires, interviews and classroom observations. The thematic approach was used to analyse the data. The findings revealed that employability of TTD learners in the textile industry is dependent not on mastery of problem solving, critical thinking, communication skills, technical skills, collaborative skills, entrepreneurial skills, creativity, innovation and practical skills. It was ascertained that while TTD learners are generally competent, they were not excellently competent in the following skills: critical thinking, problem solving, creativity, innovation and entrepreneurial skills. Closing the skills gap requires education and industry to build meaningful partnerships that expose learners to industry through work based learning programs and the use of active learning methodologies in well-equipped classrooms to ensure that graduates possess the skill sets desired in the current workforce and beyond. It was recommended that schools should foster and enabling learning environments that help learners to acquire and develop skills relevant to the textile industry as well as adopt assessment strategies that are geared towards measuring and tracking the development of employability skills that are now critical in a complex global environment.

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CHAPTER ONE

THE RESEARCH PROBLEM

1.0 Introduction

The purpose of the study is to investigate the skills gap between the Ordinary level Textile Technology and Design learners and the textile construction industry. This chapter sets out the context of the study by highlighting the background to the study. The chapter will also describe the research problem, highlight the research question, and significance of the study. Finally, limitations, delimitations and key terms will be described.

1.1 Background to the study

Zimbabwe requires an efficient and a capable skilled workforce to manage the textiles industry. The importance of the skilled workforce cannot be overemphasized as it contributes immensely to the social and economic development of the country (Olusola, 2019). The continuous growth in and expansion of this industry in Zimbabwe have led to exponential growth in positions that require certain technical skills. It is therefore important for Textile Technology and Design teachers to pay particular attention to the skill attainment of their learners to enable them produce suitable clothing to meet the demanding needs of the Zimbabwean society.

Since Textile Technology and Design (TTD) is a practical subject, students have to apply their hands and minds to acquire lifelong skills (Magagula, Mpofu and Bhebhe, 2019). According to ZIMSEC (2015), in learning TTD, learners are imparted with both practical and theoretical skills. As students engage with this learning area, they are afforded the opportunity to be exposed to industrial production systems and the use of Information and Communication Technologies (ICTs) in designing textiles items. Thus they will be able to acquire theoretical and practical skills in areas such as construction, manufacturing, use,

storage and maintenance of textile items and equipment (ZIMSEC, 2015). Acquiring these skills will make the school graduate to be work place ready.

As explained by Schultz (2008), being workplace ready requires one to have developed skills in two areas the hard (academic and technical) and “soft” (personality traits and habits) areas. Fischer (2013) add on and says that upon leaving high school students are expected by their employers to be “employment ready” , possessing the necessary hard and soft-skills to be effective in the workplace. However, Fischer (2013) has noted that many students are not graduating from school equipped with the essential hard and soft skills to be effective in the workplace. Green (2015), also explains that technological advances have seen rise in demand for a more highly skilled labour force, transforming a high school and secondary education into a minimum requirement for entry into the labour market. This means that students doing TTD at Ordinary or Advanced level upon completion should have acquired skills that make them employable.

The question of how to best equip TTD students with skills required for the rapidly changing textile industry becomes critically important since students are more prone to encounter competition in the job market when they finish school. Because of this TTD educators need to re-think what skills are most important for students to acquire and how to prepare students to meet the emerging roles textile industry (Washor, 2015). Therefore determining skills level of TTD students which the textiles industry deems necessary for one to be successful in that industry as well as if the skills are being taught in secondary schools is the major purpose of this study. The issue of skills gap cannot be over emphasised as it has become key and very important most especially in construction industries in Sub Saharan Africa (Olusola, 2019). This has been observed to have adverse effect on the industry in area of production and its workforce.

The level of skills possessed by vocational education graduates for employment has been a worrisome issue in a number of countries. For instance in Nigeria, Ayonmike and Okeke (2016) have observed that representatives of labour markets tagged graduates from Nigerian universities as half-baked perceiving these graduates as lacking in employable skills, making them unemployable. They further opine that, despite government efforts to revitalize vocational education at all levels, vocational education graduates still lack skills such as occupational and employability skills to survive in the world of work.

In Ghana, Anderson's (2008) study revealed that the skills gap has affected several workers across a range of sectors such as construction, hospitality industry, manufacturing, mining, clothing and textiles to mention a few. The study by Anderson (2008) demonstrated that the construction industries in Ghana, were complaining about how issue of skills gap affected the economy of their country thus acting as a major constraint to their businesses. The study showed that graduates in the textile construction industry do not always possess the necessary skills, abilities, or knowledge when beginning their careers in the industry. The lack of these skills and abilities can limit the productivity of newly hired, recent graduates, or even prevent them from gaining employment.

A study in Zambia by Muya et al., (2006) has shown that skills gap exists among workers in the textile construction industry and other related industries. As a consequence, the workforce of the construction industry and other related industries has been found to be incompetent. Because of this, Olusola, (2019), explains that industries are complaining about the education and training that is being offered to the secondary school graduates. Olusola, (2019), noted, that such education and training is grossly insufficient to meet the demand of today's textile construction industry as neither the secondary education nor the vocational training and technical colleges are equipping the school leavers with the key skills and abilities needed for work.

In another study in South Africa by Coetzee (2014), it was revealed that the clothing industry is faced with a high level of shortage of skills in creating and making patterns. The study also showed that a skills shortage exists in the area of trained computer-aided design (CAD) pattern-makers. In addition the study revealed that skilled pattern-makers in the South African clothing industry are difficult to find and employ, especially those who are able to utilise the CAD pattern-making software. Thus there was need for the clothing industry to invest in technological skills development.

Developed countries also experience the problem of the skills gap among their workforce. A study by Pye (2012) in the United Kingdom showed that the clothing, textiles and footwear industries experience wide skills gaps; mainly in managerial, clerical and plant and machine operative roles. Of great concern to clothing and textiles industries were skills gaps such as: team building skills, computer literacy/software skills, communication skills, and customer handling skills, technical skills and problem solving skills in particular. The lack of these skills was shown to adversely affect business in terms of customer service, new products, sales, and the introduction of new working practices.

In the Zimbabwean context, one known study by Satiya (2017), revealed that the clothing and textile industries in Zimbabwe are complaining that college graduates lack the required skills to work in industries. The study by Satiya (2017), focused on graduates from poly-technical colleges whether they possessed skills needed by the textiles industry. No study in Zimbabwe to the researcher's knowledge has focused on secondary school or high school graduates. At a time when economic conditions require a workforce of lifelong learners who can quickly gain the knowledge and skills needed to work in the clothing industry, completion of secondary and high school is critical for any individual who wishes to compete in the 21st century workforce. It is therefore important to find out if Zimbabwean secondary

schools are providing the necessary entry-level skills that are desired by the clothing industry that lead to successful employment in the 21st century.

The question of how to best prepare students for jobs in the fast-paced and ever-changing clothing and textiles (CT) industry is important because students face an increasingly competitive job market upon graduation from high school and college, hence they need to possess skills and knowledge are critical and marketable for them to succeed in textile construction industry. Therefore, coming up with strategies for ensuring that secondary school graduates gain the requisite skills to meet the needs of employers in the textile industry will go a long way in not only improving performance at the workplace but can also lead to more responsive and sustainable technical education policies that can address individual and national needs.

The study therefore intends to investigate the skills gap between the Ordinary level TTD learners and the textile construction industry and to address this skills gap through improved Textile Technology and Design education. Furthermore, there is limited research on skills gap in Textile Technology and Design education in Zimbabwe; hence this study will help to fill this gap by identifying area of deficiency in the teaching of TTD and to remedy the deficiencies. Overall, preparation of secondary school graduates for the global textiles construction industry has received limited attention. As the workforce challenges in the Zimbabwean textile construction industry intensify, the lack of empirical data in terms of skills and knowledge required for the clothing and textile professionals warrants research in this area.

1.2 Statement of the problem

There have been complaints by textile industries about the quality of secondary and technical college graduates In Zimbabwe who lack adequate practical, technical and soft skills required

for work in the industry. Such lack of skills among the workforce has a negative impact on the productivity of the industry. This lack of skills may be attributed to insufficiency and inadequate of educational training facilities and this contributes to the production of graduates who are not employable. It is, therefore, important that research is carried out not only to provide solution to the issue of skills gap but to equally intimate education professionals with recent knowledge and guidelines for reducing skills gap and to understand areas of weaknesses in the TTD curriculum and be able to train students better.

1.3 Research Questions

The study will be guided by the following research questions:

1. What skills do TTD secondary school graduates possess?
2. What skills are relevant for the Textile industry?
3. What recommendations can be proffered to address the skills gap?

1.4 Significance of the study

The Zimbabwean textile industry has complained graduates who do not possess adequate practical and technical skills necessary for employability in the textile industry. Conducting this study will be beneficial to a number of stakeholders such as the Ministry of Primary and Secondary Education, teachers, students and the textile industry.

1.4.1 Teachers

The study will benefit TTD teachers through equipping them with knowledge so that they can understand the deficiencies in the TTD curriculum and be able to implement the skills component of the TTD curriculum better.

1.4.2 The Ministry of Primary and Secondary Education

The findings of the study will help the Ministry of Primary and Secondary Education, in the considering activities that are necessary to plan, develop and improve the TTD curriculum that will provide learners with the necessary skills required by the textile industry.

1.4.3 The learners

Furthermore, the findings of the study will help secondary school TTD graduates to develop industry-relevant skills thereby making them ready for the job market. The textile industry will benefit in that once learners are equipped with the hard and soft skills required for employability costs for training through internships will be reduced as employees will be in possession of the required skills.

1.4.4 Institutions of higher learning

The research findings are useful for textiles related programs in institutions of higher learning, which can more effectively address the existing skills gaps in the Zimbabwean textile industry. This will contribute to a concerted effort of the government, retailers, and higher education institutions to increase the competitiveness of the domestic textile industries. Investing in well-trained textile professionals could steer Zimbabwean textiles into future success.

1.5 Limitations

Conducting research during the covid-19 pandemic is not easy and presents some limitations. Due to lockdown measures placing restrictions on social distancing, closure of schools the researcher will shelve conducting observations of students doing practical work to ascertain the level of technical skills until social distancing measures are relaxed. Furthermore the study is focusing on one cluster thus limiting the generalizability of the findings to other schools in the country.

1.6 Delimitations

The study will focus on investigating the skills gap between Ordinary level Textile Technology and Design learners and the textile construction industry. The study will be confined to secondary schools in Featherstone. Therefore, data will be collected from key stakeholders, such as, clothing manufacturing companies, and TTD teachers.

1.7 Definition of Key terms

Skill: The ability to do an activity, task or job competently, especially because you have practised it (Olusola, 2019).

Hard skills: Also called technical and academic skills, they refer to the job-related knowledge and abilities learned through education or training that employees need to perform their job duties effectively (DuBrin, 2008).

Soft skills: These are a combination of interpersonal people skills, social skills, communication skills, character traits, attitudes, career attributes and emotional intelligence quotient (EQ) among others. They are the personal qualities that help employees really thrive in the workplace (Robles, 2016).

Skills gap: Refers to the difference between the skills required for a job and the skills employee actually possesses. It is a gap between the skills an employee has and the skills he or she actually needs to perform a job well (Washor, 2015: Olusola., 2019).

Workplace readiness: refers to a new workplace entrant possessing the necessary soft and hard skills to perform the job when hired (Washor, 2015). It means having new employees prepared to enter the workforce with the requisite knowledge, skills, and abilities and attributes in order to make meaningful contributions to industry, required in their respective occupations (Borg, Turner, & Scott-Young, 2017) .

1.8 Summary

This Chapter has set out the background to the study. It commenced with a brief overview of importance of equipping Textile Technology and Design learners with skills that make them workplace ready. The problem of the skills gap between graduates and expectations from industry was also highlighted. The significance of the research was discussed in relation to how it would envisage the possibilities narrowing the prevailing skills gap. The scope, limitations as well as key terms were highlighted. The next chapter will review literature related to the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The chapter will review literature to gain a better understanding of the skills gap between secondary school as well as college graduate and the textiles industry. The chapter will highlight the skills should TTD secondary school graduates should possess to be employable in the textile industry, the role of the TTD teacher in equipping learners with these skills, factors contributing to the skills gap and how the skills gap can be closed. A summary will be given at the end of the chapter.

2.2 Skills relevant for the textile industry.

A skill is defined by Olasula (2019) as the ability to do an activity, perform a task or job competently, especially because you have practised it. Similarly, OECD (2011) explains that a skill is the ability to carry out a task assigned with the level of competence expected and this competence is acquired through quality education and training. Therefore, in the textiles industry, a skill is the ability and expertise related to one's knowledge, practice and aptitude to perform tasks in the textiles workplace. Since a skill is related to a particular task, an individual lacking a skill is not likely to be able to perform the task hence will be less productive than one who possesses the skill (Olasula, 2019).

For an employee to succeed in the textiles industry, one needs to possess specific competencies that comprise of relevant knowledge and skills (Jacobs, 2018). According to Green, Hammer and Star (2009), skills are described as generic, core and transferable. Jacobs (2018) explains that core skills are skills related to a particular discipline, while generic skills are those skills that can be transferred from one working situation to another. Olasula (2019) also explains that generic skills are multifarious in nature consisting of

problem solving skills, communication skills and information skills. Generic skills can be used across all jobs and in different work context (Singh, 2015). Scholars such as Andrews and Higson, (2008) as well as Robles, (2012) have noted that for one to be successful in the textiles industry they need to possess soft and hard skills.

2.2.1 Soft skills

Jacobs (2018), describes soft skills as character traits or desirable qualities that are transferable from one work or industry context to another. Andrews and Higson, (2008) view them as people-related skills (interpersonal) and personal attributes (intrapersonal) essential for one to be successful in their professional career. Contributing to this debate, Washor (2015), defines, soft-skills as consisting of life and career skills, learning and innovation skills, information, media and technology skills, critical thinking, problem solving, communication, and collaboration. There are ten types of soft skills essential for textiles employees in the 21st century that were identified by Robles (2012). These are communication, courtesy, flexibility, integrity, interpersonal skills, positive attitude, professionalism, responsibility, teamwork, and work ethic. In addition to these ten, Jackson (2013), further added four more which leadership, organizational skills, and self-management and self-evaluation.

The soft skills that were identified by Robles (2012) and Jackson (2013) have also been reported in a number of studies to be important for captains of industry and commerce (Jacobs, 2018). Generally it can be said that there is agreement in the literature on soft skills that are important in any workplace and business environment. The soft skills such as Excellent Communication and Interpersonal Skills, collaborate effectively with others are very essential in ensuring customer satisfaction and successful business environment.

Similarly, Clokie and Fourie (2016) have also identified communication and teamwork were as the most important skills across all textile functions.

Muhammad and Ha-Brookshire (2011) also observed that communication and teamwork are important skills in their job analysis responsibilities of personnel in the apparel and merchandising context. For merchandising professional, communication is critical since they work with clients from various cultures and need to have adequate skills in writing reports, conducting meetings, making oral presentations and writing business communications, (Clokie & Fourie, 2016). In the textile industry, communication and teamwork are very important in establishing partnerships across organizational and cultural boundaries and different time-zones (Jacobs, 2018).

2.2.2 Hard skills

Robles (2012) defines hard skills as the technical expertise and knowledge needed for a job. DuBrin (2008) describes hard skills as technical and academic skills: that is job-related knowledge and abilities learned through education or training that employees need to perform their job duties effectively. These skills are related to one's knowledge, practice, aptitude, competence, excellence to do something well as a result of specialized training. Olasula (2019) highlights that academic skills are critical in support students to further their education in institutions of higher learning. Jacobs (2018) sees academic skills as thinking conceptual capabilities related to higher order thinking skills such as critical thinking, problem-solving, and organizing information for decision-making.

Technical skills on the other hand are those skills acquired both at formal and non-formal institution of learning relating to the profession of one's choice as an apprentice, in the replica of the workplace for employment (Olasula,2019). As explained by Medina(2010), technical skills are required for an occupation in which a skilled individual has to

demonstrate his/her competency in using the tools and technologies in that area or discipline. Such skills are learnt in educational training institutions and non-formal settings (Olasula, 2019). In the textiles industry an employee with technical skills will be to translate designs into production, use new technologies and, demonstrate adequate knowledge in the technical aspects of fabrics, garment technology and production.

In the business context, Jackson (2013) identified a number of hard skills such as critical thinking, problem solving, decision-making, and self-awareness as important for business executives. Schlee and Harich (2010), also added that technological aptitude, using industry specific types of databases and software programs to do analysis as well as management of information systems are also important hard skills for business industry while Bridgstock (2009), sees critical thinking and problem solving as desirable hard skills in any business context.

In the textile industry, a survey by Howse, Hines and Swinker (2000) indicated that textile retail buyers valued mathematical skills, finding information to solve problems, and critically interpreting information as important hard skills. Chida and Brown (2011) on the other hand underscored the importance of critical thinking and innovation for individuals in merchandising positions. In studies by Fiorito, Gable and Conseur (2010), technical skills pertaining to technologies that support merchandisers to perform their responsibilities were reported to be very important for merchandisers in the textile industry. The above literature shows that similar hard skills are noted for business and textile apparel merchandising. Both technical and thinking/conceptual skills are important for both areas. Even though technical hard skills might be industry specific, it is possible to transfer the mastery of information and communication technologies between different contexts (Jacobs, 2018).

In summing up this section it important to note that the Textile Technology and Design syllabus covers theoretical and practical aspects in areas such as production, construction, manufacturing, use, storage and maintenance of textile items and equipment. The four year learning phase as noted by ZIMSEC (2015) seeks to develop a number skills among others: critical thinking , problem solving, creativity and innovation, technological, psychomotor, communication, interpersonal, evaluation and analysis, decision making, management, enterprising and multimedia. The above skills fall into the two categories discussed earlier which are hard and soft skills.

From the above discussions, it can also be seen that employees need to have a mix of both hard and soft skills to enhance their employability and to meet the demands of the highly technological textile work environment (Gallagher et al., 2010). Pauw, Oosthuizen and Van der Westhuizen (2008) further highlight the need for employees to have adequate skills as this enhances high productivity within the textiles industry in order to attract investors. Workers need to be highly skilled since most production processes have become technologically advanced.

Clothing industry employees require a variety of attributes and skills to perform their specific tasks optimally. These have been referred to employability skills by Taylor (2005) and are summarised in table 2.1 below.

Summary of Employability skills

Attributes

- Loyalty
- Commitment
- Honesty and integrity
- Enthusiasm
- Reliability
- Personal presentation
- Common sense
- Positive self-esteem
- A sense of humour
- A balanced attitude to work and home life
- An ability to deal with pressure
- Motivation
- Adaptability

Skills

- Communication that contributes to productive and harmonious relations across employees and customers
- Teamwork that contributes to productive working relationships and outcomes
- Problem-solving skills that contribute to productive outcomes
- Self-management skills that contribute to employee satisfaction and growth
- Planning and organising that contribute to long- and short-term strategic planning
- Technology skills that contribute to effective execution of tasks
- Learning skills that contribute to on-going improvement and expansion in employee and

company operations and outcomes

- Initiative and enterprise skills that contribute to innovative outcomes

Table 2.5 Summary of Employability skills

Source: Adapted from Taylor (2005: 206)

Therefore identifying the skills needed for the textile industry is important as it helps curriculum planners to design curricula that prepare students for the workplace.

The NCES (2017), observed that despite having high school graduation rates that are very high, most employer in the USA have found that the graduates are not adequately prepared to succeed in the workplace. The reason being that they lack soft skills. While technical skills are often industry-specific, soft skills such as professional communication, critical thinking, collaboration, and time management are valued by employers across sectors. The US chamber of commerce foundation says that soft skills are important, yet they are not taught with consistency or given prioritization.

The Brookings Institution (2015) notes that there are several categories of skills that are critical for the work place, however most employers, educators, organizations, and policymakers are increasingly placing more importance around soft skills which refer to teamwork and collaboration ,leadership , problem solving & critical thinking, work ethic & persistence, organizational skills, creativity, interpersonal communication and relationship skills (e.g. conflict resolution). Thus various sectors of the economy are placing more value on soft skills. Hence there is need for educators to teach soft skills.

2.3 Equipping learners with skills relevant for the textiles industry?

Textile Technology and Design as a discipline that is practically and theoretically oriented requires teachers who are competent in imparting skills to learners. In-order to effectively impart these skills, teachers need to use learner centred participatory approaches (ZIMSEC, 2015). Student-centred learning allows students to actively participate in discovery learning processes from an autonomous viewpoint (Komugisha, 2012). The teacher acts as a facilitator to ensure that a variety of hands-on activities are organised for/ with the students in order to promote successful learning. With the use of valuable learning skills, students are capable of achieving life-long learning goals, which can further enhance their skills.

Hua, Harris, and Ros (2011) explain that the use of student-centred learning approaches is important in promoting the development of interpersonal communication skills, especially through students' construction of social meaning and their development of self-awareness and social identities. The Textile, Technology and Design syllabus suggests a number of student centred approaches to be used in imparting skills to TTD learners. These include among others group discussion, experiments, educational tours, research/Investigation, role play, games, demonstration, projects, drama and modelling (ZIMSEC, 2015).

As a practical learning area, TTD learners should learn directly from their learning experience (experiential learning) (Komugisha, 2012). This implies that with the experiential learning approach, learners have to get involved during the learning process as indicated by the above evidence that things have to be learned by doing them. Linked to the notion of experiential learning is the concept of learning by discovery. Bjerknes (2002) explains that learning by discovery means to see and experience new things, to gain new experiences and to experience life in new ways which challenges the learners' personal involvement and experience.

Another approach that TTD teacher can use is cooperative learning. Cooperative learning is an approach to organizing classroom activities into academic and social learning experiences where students must work in groups to complete sets of tasks collectively (Komugisha, 2012). Through cooperative learning, students share the assigned tasks in small groups and support each other's efforts in the learning process. In addition learning groups promote interaction and sharing of ideas and experiences; purposely to develop new knowledge in the improvement and development process.

Nkwodimmah and Okoh (2010), highlight that the teaching of Textile Technology and design is more of practical work as a result learners need to be exposed to practical work so as to be well equipped with saleable skills required to enhance self-reliance and good quality of life. Nkwodimmah and Okoh (2010), further say that any skill- oriented discipline where acquisition of skills and knowledge is needed requires the intensive exposure of learners to practical work. Therefore, in the teaching of Textile Technology and design, the practical aspect should be taught thoroughly to enable the learners acquire the necessary skills. In addition, Nwankwo (2009) emphasizes the role of practical work in developing manipulative skills that will give learners confidence and ability to perform effectively in any given situation. Exposure to practical work thus enables learners to acquire skills require for them to be competent in the workplace.

According to Lahtia(2012), learning sewing skills is a complex and challenging process. Students have to learn to use several tools and to understand garment and textile structures in order to execute individual design projects. The sewing skills according to Seitamaa-Hakkarainen, Lahti & Hakkarainen (2005) can be taught through individual and collaborative projects. In these individual and collaborative projects, textile learners designed and manufactured products for personal use and special groups respectively. When engages in these projects, students learnt both problem solving and sewing skills (Lahtia,2012).

One of the methods that has been used to teach clothing and textiles is Problem-based learning (PBL). According to Saiki and Adomaitis (2017), PBL is a constructivist approach where students are asked to solve a problem through examining experiments to learn about textiles science and textile related aspects. Student who have been exposed to such a teaching method have been found to exhibit a high degree of motivation, engagement, and creative thinking (Gam & Banning, 2011). Overall, constructivist learning is focused on the student where the student explores and the teacher guides. Constructivists stress active learning to extract meaning using conceptual and critical thinking skills.

Mwanza (2017) observed that teachers are central to achieving universal access to high quality and equitable education for all learners because teachers have first-hand knowledge of the learning environment, the learners and how the two relate. The competency-based TTD curriculum may appear uncomplicated in design but it is not as easy as it appears, in theory, it requires teachers to be knowledgeable of the key principles of the curriculum and equipped with skills and desirable attitudes to teach using competency-based approaches appropriately (Kabombwe & Mulenga, 2019). Therefore, it is important for TTD teachers to know and understand the kind of curriculum a nation is using in order to interpret it correctly and avoid wastage of educational resources and ensure that necessary skills are attained. Thus, it is important for curriculum designers to provide proper guidelines to teachers so that the curriculum is implemented effectively.

A competency can be defined as a combination of skills, knowledge, attributes and behaviours that enables a TTD teacher to impart technical skills to the students .Competence is usually associated with highly professional performance by the TTD teacher and there is a direct link in the field of education between the teacher's professional competence and pupil performance (Magagula, Mpofu and Bhebhe, 2019). A competent TTD teacher should be

able to impart technical skills to students in order for them to produce garments of high standard.

Magagula, Mpofu and Bhebhe (2019) explain that the competencies of teachers in teaching TTD can be measured by their ability to impart knowledge and practical technical skills to the students. These technical skills include manipulative skills and accuracy of sewing processes, machine stitching skills and hand stitching skills, drafting of basic blocks and adaptation and use of commercial patterns. However, Komolafe (2016), has found that teachers have low competence in these skills. Forster, Quarcoo, Ashong and Ghanney (2017), explain that if teachers are to be able to impart the right skills to learners they should be competent enough. Kaindi, Mburugu, Nguku and Obere (2016) further say that a teacher cannot impart skills they are not competent in.

According to Komolafe (2016), the importance and need for training and textile teachers to be adequately equipped with the right competencies cannot be overemphasized. If teachers are well equipped with the required skills, conducive environment to work in, with adequate and functional equipment, it will enhance their class practical demonstrations. This will in turn help in equipping students with and develops in them creativity practice and artistic abilities for self-employment.

2.4 The skills gap and its causes

This refers to the difference between the skills required for a job and the skills employee actually possesses. It is a gap between the skills an employee has and the skills he or she actually needs to perform a job well (Washor, 2015; Olasula, 2019). A study by Romeo and Lee (2013) has shown that creative designers in the textiles industry lack garment construction skills. As a result of poor knowledge of seams and construction the designer were shown to be unable to translate creative ideas into garments that are suitable for manufacture.

Drapers (2011) have also indicated that colleges are producing textile design graduates who lack technical, operations and manufacturing skills to meet the supply and demand of the clothing industry. This implies that if training focuses on design creativity, this result in the production of graduates with insufficient skills and knowledge critical in translating designs into products hence they will not be adequately equipped for industry.

Pye (2002) observed that the increasing use of technology is creating a need for improved technical and IT skills for both the existing workforce and future recruits - particularly in the textile industry. Of great concern to clothing employers are skills gaps such as: team building skills, computer literacy skills, communication skills, computer aided design, sewing-machining skills, problem solving and customer handling skills.

Several factors have been shown to contribute to the skills gaps. A study by Frayling (2011) showed that textile tertiary education students are now demanding more hands-on activities. This demand has been as explained as a response to the lack of exposure to such activities in secondary schools. Norum (2013), has also observed the decline in use of hand stitching activities in secondary school textiles education as one of the contributing factors to the skills gap and today's throw-away culture

In examining practices and clothing maintenance skills in the 21st century, Norum (2013) further noted a lack of sewing skills among individuals which results in minimal repair work on clothing items. Norum's study also established that sewing on buttons and fixing hems characterised most repair work carried out. The study also showed that the majority of the participants did not have the necessary skills to repair clothes and that an overall decline in repair skills was a result of the decline in teaching these skills in schools.

Morris and Reed (2009) highlight that a skills gap can occur in any industry. They propose several reasons to this skills gap. One of the reasons they give is that the content and quality

of programmes and course offered in institutions of higher learning fail to meet the needs of industry. Morris and Reed (2009) further say that sometimes training offered is too theoretical and lack the practical hands on experiences relevant to the workplace. The other reason cited by Morris and Reed (2009) is that employers do not communicate with educational training institutions their requirements in terms of skills they need from prospective employees as a result training institutions cannot prepare graduates for the workplace.

Olasula (2019), highlights that inadequate training and transfer of inappropriate skill has contributed to skills gap, coupled with textbooks that are out-of-date which the instructors use in transferring and imparting training to students. A study by Awe et al (2010) explains the skills gap is as a result of obsolete and malfunctioning facilities for practical work in most schools and colleges. Furthermore, most schools and colleges do not have modern tools and equipment for training students. Nicoleau and Sackman (2017) observed that most educators and curriculum planners are not competent enough as a result they fail to equip graduates with the needed employment skills.

In a survey of companies in Kosovo by Hapçiu (2017) to provide their opinion on a variety of issues, ranging from their opinion on the cause of the existing skills gap, to the role of education institutions and the skills that will be in high demand in the future. The most common response was that education institutions are at fault for failing to supply the labour market with jobseekers with the required skill set. They pointed that there is a lack of particular skills in the labour market altogether, and that the lack of a coordinated strategy for employment and education is not helping the situation.

2.5 Addressing the skills gap

Closing the gap between the skills employers require in their workforce and those that students leave school with is essential. One way of achieving this is through collaboration between business and education at the local level (Ayonmike & Okeke, 2016). This will enable teachers to be aware of the skills they should prioritize. In addition, teachers need support from business and industry in terms of resources so that they can be able to address the skills gap. In other words, employee-school collaboration/ partnerships is an important way of bridging the skills gap.

Commenting on school-industry partnerships, Olaitan (2000), highlights that partnerships between educational institutions and an industry help in assisting learners develop functional skills for the world of work and give them the opportunity of matching theoretical learning with practice. As observed by Ayonmike and Okeke (2016), partnerships between schools and industry are essential for providing national policy direction, identifying skill needs, setting skill standards and providing technical input into teaching and learning resources.

Osei-Poku , Osei , Adjei-Boateng and Howard(2018) opine that partnerships between schools and industry are important as they help develop a curriculum that embodies current body of knowledge from academia and contemporary practice in the industry. That kind of curriculum can address the common interest of both parties. That is, producing individuals with the right knowledge, competencies and attitudes that can help propel growth of the clothing and textiles industry. Thus, collaboration between academia and its relevant industry partners is very important for effective training of students to acquire the relevant knowledge, attitudes, and skills.

Carvalho (2016), explains that one way of bridging the skills gap is through using problem-based learning (PBL) as a teaching methodology. Heaviside, Manley and Hudson (2018)

describe PBL as a student-centred approach where students are required to collaboratively solve a contextualised problem with the teacher playing the role of a facilitator and guides students towards discovering answers independently instead of being given the answers. This offers a holistic learning experience for students to such an extent that they develop employability skills such as optimising learning, reflection, problem-solving, critical and creative thinking, independent learning, collaborative and communication skills (Heaviside, Manley & Hudson, 2018).

Work-based learning is another way of bridging the skills gap. The Vermont Agency of Education (2018), defines work-based learning as an educational program or experience involving student interactions with industry or community professionals in real, virtual, online, or simulated work environments that exposes learners to postsecondary options, provides opportunities for skill development and proficiency attainment, and allows students to reinforce and deepen their school-based learning. Through work-based learning experiences, educational programs become more relevant, rigorous, challenging, and rewarding for students, parents, educators, and employers. These experiences can particularly help students make the connection between academic principles and real world applications.

2.6 Summary

This chapter has reviewed literature on the skills gap. It has been noted that the textiles employees with employable skills, hard and soft skills. This chapter has also revealed that secondary school and college graduates lack the skills required by the industry for them to be employable. The role of the TTD teacher and how TTD teachers can ensure that secondary school graduates are equipped with the skills was described. The causes of the skills gap and strategies on how the gap can be closed were also examined. The next chapter will address the methodology to be used in the study.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The previous chapter has established a skills gap between secondary school graduates and the textile industry. This chapter will explore the methodology to be utilized in this study. It will describe and provide a justification for the research design, population, the sample and sampling techniques. The instruments to be used for data collection as their justification together with the methods to be employed in data collection will be explained. The chapter will end by explaining the ethical considerations and how the collected data will be analysed.

3.2 Research design

Saunders, Lewis and Thornhill (2012) define a research design as a general plan that a researcher follows in an attempt to find answers to research questions in a study. McCombes, (2019) sees it as a framework for planning a research study and answering your research questions. It is a framework that includes the methods and procedures to collect, analyse, and interpret data. In other words, the research design describes how the researcher will investigate the central problem of the research.

According to Jaideep (2016), a research design is a broad plan that states objectives of research project and provides the guidelines what is to be done to realize those objectives. It is, in other words, a master plan for executing a research project. Simply put, a research design Research design is the overall strategy a research adopts in conducting research that outlines a logical and succinct plan to address the formulated research question(s) by collecting, analysing, interpreting and evaluation of data.

In this study, the researcher utilized the case study research design. Crowe, Cresswell, Robertson, Huby, Avery, and Sheikh (2011), define a case study as an approach to research approach allows in-depth, multi-faceted explorations of complex issues in their real-life settings. Crowe et al.(2011) further say that the case study approach is particularly useful to use when there is a need to obtain an in-depth appreciation of an issue, event or phenomenon of interest, in its natural real-life context. In other words the aim of a case study design is to provide an in depth exploration of an event or phenomenon in its natural context.

Yin (2014) views a case study as an empirical inquiry that investigates a contemporary phenomenon within its real life context using multiple sources of evidence. Noor(2008) explains that case studies are concerned with why and how things occur, allowing the investigation of contextual realities and the differences between what was planned and what actually occurred. Because of this, case studies focus on a particular issue, feature or unit of analysis.

Heale and Twycross (2018) say that a case study can be defined as an intensive study about a person, a group of people or a unit, which is aimed to generalize over several units. In other words, using a case study a researcher can carry out an in-depth intensive investigation of a single individual, group, community or some other unit. In order to understand and investigate the skills gap between TTD O' level students and the textile industry the multiple case study method was chosen. Three secondary schools in Mutegesa cluster were studied.

The case study design was chosen in this research as it allowed the researcher to conduct a detailed investigation on the skills gap in more detail than might be possible if a large number of research participants would be used (McLeod, 2019). Thus the data collected was a lot richer and of greater depth than can be found through other designs. Using a multiple-case

research study allowed for a more in-depth understanding of the cases as a unit, through comparison of similarities and differences of the individual cases embedded within the quintain. Evidence arising from multiple-case studies is often stronger and more reliable than from single-case research. Multiple-case studies allow for more comprehensive exploration of research questions and theory development (Heale & Twycross, 2018).

3.3 Population and sample

Bhandari (2020) defines population as a comprehensive group of individuals, institutions, objects with have common characteristics that are the interest of a researcher. In other words a population is the entire group that you want to draw conclusions about. The population in this case consisted of five secondary schools, 5 TTD teachers and 150 learners in Mutegesa cluster in Featherstone. The population also included three managers form textile construction companies in Gweru.

According to Salkind (2010), sampling refers to the examination of a selected portion or sample of a larger group of potential participants and uses the results to make statements that apply to this broader group or population. Turner (2020) defines sampling as the selection of a subset of the population the sample of interest in a research study and using this to make inferences about the population. Thus a sample is a subset of a population that is used to represent the entire group as a whole. In this study the sample consisted of three TTD teachers from three schools, twenty seven learners and two managers from textile manufacturing companies.

Elfil and Negida (2017) define sampling techniques as the methods that are used in selecting a sample from the population. In other words it is how we select members from the population to participate in the study. In this study, the purposive sampling technique was used to select the participating teachers and managers while learners were selected using

quota sampling. For teachers the selection criterion was that they had to be qualified TTD teachers with a minimum of five years of teaching experience. For textile managers the selection criteria was that they had to possess a textiles related diploma or bachelor's degree and a minimum of three years working experience. Nine form four learners were selected at each of the participating schools. The criterion used was based on the performance of the learners. The researcher selected three high performers, three average and three low performers for observations.

Robinson (2014) says that purposive sampling is intentional selection of informants based on their ability to elucidate a specific theme, concept, or phenomenon. It involves the identification and selection of information-rich cases that is selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest for the most effective use of limited resources (Palinkas, Horwitz, Green, Wisdom, Duan & Hoagwood, 2015). In addition to knowledge and experience, note the importance of availability and willingness to participate, and the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner (Palinkas,et al., 2015). McLeod (2019) explains that quota sampling is a non-probability sampling method in which researchers create a sample involving individuals that represent a population. The researcher takes a very tailored sample that's in proportion to some characteristic or trait of a population. Application of quota sampling ensures that sample group represents certain characteristics of the population chosen by the researcher.

3.4 Research Instruments

The instruments used in this study were a questionnaire for teachers, classroom observations and a semi-structured interview for clothing industry managers.

3.4.1 The Questionnaire

Lavrakas (2008) defines a questionnaire as an instrument consisting of a set of standardized questions, often called items, which follow a fixed scheme in order to collect individual data about one or more specific topics. McLeod (2018) describes a questionnaire as a research instrument consisting of a series of questions for the purpose of gathering information from respondents. In other words, a questionnaire is a data collection technique wherein the respondents are asked to give answers to the series of questions, written or verbal, about a pertinent topic.

There are basically three types of questionnaires, structured, unstructured and semi-structured. Structured questionnaires consist of closed questions while unstructured questionnaires consist of open questions. A semi-structured questionnaire has a mixture of both closed and open questions (Acharya, 2010). In this study, an unstructured questionnaire with open questions will be used. The advantage of using this type of questionnaire lies in its ability to gather more in-depth answers from your respondents (McLeod, 2018).

McLeod (2018) further opines that open questions allow people to express what they think in their own words and enable the respondent to answer in as much detail as they like in their own words. Thus, an open ended questionnaire allows the researcher to collect rich qualitative data since as open questions allow the respondent to elaborate on their answer.

Brown (2009) further says that open-response items on questionnaires allow respondents to answer in their own words by writing in a space that is provided. In other words the use of open-response questionnaires enables researchers to determine the thoughts and opinions of respondents on a certain topic or issue. Brown (2009) goes on to say that open-response

questionnaire items are primarily exploratory, and are commonly associated with qualitative research, particularly case study.

3.4.2 The interview

Boyce and Neale (2006) define an interview as a qualitative research technique which involves asking open-ended questions to a small number of respondents to explore and elicit their perspectives on a particular idea, subject, program or situation. DeCarlo (2018) explains that interviews are a method of data collection that involves two or more people exchanging information through a series of questions and answers. The questions are designed by a researcher to elicit information from interview participants on a specific topic or set of topics. These topics are informed by the author's research questions.

For Richards (2009), an interview is a conversation between two people (the interviewer and the respondent) using questions and answers to elicit information and explore people's experience and views. The interviewer in most cases is the subject matter expert who intends to understand respondent opinions in a well-planned and executed series of questions and answers. There are three fundamental types of interviews that are used in research: structured, unstructured and semi-structured.

Easwaramoorthy and Zarinpoush (2006) explain that in a structured interview, the interviewer asks a set of standard, predetermined questions about particular topics, in a specific order while in an unstructured interview, the interviewer has no specific guidelines, restrictions, predetermined questions, or list of options. The interviewer asks a few broad questions to engage the respondent in an open, informal, and spontaneous discussion. In a semi-structured interview, the interviewer uses a set of predetermined questions and the respondents answer in their own words. The interviewer can probe areas based on the

respondent's answers or ask supplementary questions for clarification. In this study, semi-structured interviews will be used.

The advantage of using semi-structured interviews in this study was that they offered a considerable amount of flexibility to the researcher to probe the respondents along with maintaining basic interview structure. In addition, Laforest (2009) says interviewers prepare questions beforehand to help guide the conversation and keep respondents on topic and also make the interviewer to appear competent during the interview. Furthermore, semi-structured interview encourages two-way communication. Those being interviewed can ask questions of the interviewer. In this way it can also function as an extension tool (Laforest, 2009).

3.4.3 Observations

The US department of Health and Human services (2018) defines observation as a way of gathering data by watching behaviour, events, or noting physical characteristics in their natural setting. Kawulich (2015) explains that observations are a systematic description of events, behaviours, and artefacts in the social setting that has been chosen for study. Kawulich (2015) further notes that observations make it possible for the researcher to use the five senses to describe existing situations as well as provide a written picture of the situation under study. Thus observation is an active process of perceiving behaviours in a social context with the objective of collecting and interpreting relevant data.

The use of this method of data collection in this study was important in that it enables the researchers to assess vocational competence act that is practical skills of learners. Hence it is a method of choice for gathering information about learners' competences by observing them during practical activities. The method also enables the researcher to observe social skills (competences) such as communicative and cooperative/ collaborative competences quite well.

In this study, a classroom observation with each participating teacher, using a standardised form with a template of the employability skills the researcher was monitoring was used. The focus was on identifying the skills possessed by TTD learners that enhance employability.

3.5 Data Collection Procedures

In this study, data was collected from TTD teachers and managers from clothing companies. Prior to data collection, the researcher will obtain an introductory letter from the department of Applied Education which she will use to apply for permission from the Ministry of Primary and Secondary Education as well as clothing companies to conduct research.

Once permission has been granted, the researcher contacted the schools, teachers and companies through email, WhatsApp and telephone to get the consent of the teachers and managers to participate in the study. When consent of the respondents was obtained the researcher then made appointments on when she can administer the questionnaire, interviews and conduct classroom observations. After appointment dates had been set, the researcher then administered the questionnaire to teachers, interviews the managers and conduct classroom observations.

3.6 Ethical Considerations

Resnik (2020) defines ethics as norms for conduct that distinguish between acceptable and unacceptable behaviour. Fouka and Mantzorou (2011) explains that research ethics deal with the dynamics of decision making concerning what is right and wrong and involve requirements on daily work, the protection of dignity of subjects and the publication of the information in the research. The following ethical considerations were adhered to in conducting this study.

Informed consent

The principle of informed consent entails that a researcher should provide adequate and sufficient information about the study so that participants are aware of the nature and implications of participating in the study so that they can choose to partake in the study from an informed position without being forced (Saunders and Thornhill, 2012). In this study the researcher informed the participants about their rights, the purpose of the study, procedures to be undertaken, potential risks and benefits of participation, expected duration of study, extent of confidentiality of personal identification and demographic data, so that the participants voluntarily choose to take part in the study.

Protection from harm

Researchers must ensure that those taking part in research will not cause distress. They must be protected from physical and mental harm (McLeod, 2015). This means that the research did not embarrass, frighten, offend or harm participants.

Voluntary participation

Voluntary participation means that people choose to participate in the study free from coercion and are free to withdraw their participation at any time without suffering any consequences (Trochim, 2006).

Confidentiality and Anonymity

Trochim (2006) explains that confidentiality means that any identifying information is not made available to, or accessed by anyone but the researcher. Confidentiality also ensures such identifying information is excluded from any data gathering instruments, reports or published documents. The researcher thus, kept participants, and the data gained from them anonymous unless they gave their full consent.

3.7 Data Analysis plan

According to Wong (2008), qualitative data analysis is the process of systematically searching and arranging the interview transcripts, observation notes, or other non-textual materials that the researcher accumulates to increase the understanding of a phenomenon. This process of qualitative data analysis involves placing the data in categories. Wong (2008), further says that qualitative data analysis involves making sense of huge amounts of data by reducing the volume of raw information, followed by identifying significant patterns, and finally drawing meaning from data and subsequently building a logical chain of evidence. In analysing qualitative data collected in this study the researcher will read the large amount of transcripts looking for similarities or differences, and subsequently finding themes and developing categories. In other words, the thematic approach will be used to analyse the data.

3.8 Summary

This chapter has introduced and discussed the choice of research methodology suitable for this study. A case study approach was used in the study. The data collection instruments used to collect data were described and justified together with the procedures to be followed when collecting the data. The chapter explained all the ethical considerations and how the collected will be analysed using the thematic approach. The next chapter will focus on the presentation, analysis and discussion of the findings.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

The purpose of this chapter is to present the findings of the study carried out to investigate the skills gap between the Ordinary level Textile Technology and Design learners and the textile construction industry. The findings of the study shall be presented in accordance with the research questions of the study. This chapter is organized into five sections which are:

- ◆ the biographical information of the participants.
- ◆ The skills TTD secondary school graduates possess
- ◆ The skills that are relevant for the Textile industry
- ◆ Recommendations to address the skills gap
- ◆ summary

The findings are discussed immediately after they are presented.

4.2 Biographical information of the participants

The biographical information of participants is presented in table 4.1 below.

Table 4.1: Biographical information of the participants

	Gender	Age (years)	Experience (years)	Teaching Qualification
Teacher A	Female	35	12	DipED
Teacher B	Female	37	15	BED
Teacher C	Female	33	10	MED

The information from the table above indicates that all the participants were female teachers whose teaching experience ranged between 10-15 years. The teachers are all qualified to teach TTD up to Ordinary Level.

4.3 The skills that are relevant for the Textile industry

In order to obtain information relating to this research question, teachers were asked to indicate which skills they think would be relevant for TTD learners to be employed in the Textile Industry while textiles managers were asked to identify the skills needed by Textile Technology high school graduates to work in the textiles industry.

When the participating teachers were quizzed teacher A and teacher C were of the same view when they said that “*practical skills, ICT skills, designing skills and communication skills*” were relevant for TTD learners to be employed in the Textile Industry while teacher B was of opinion that “*team work, technical skills, critical thinking and designing*” were relevant for TTD learners to be employed in the Textile Industry.

When the managers were queried on what skills are needed by Textile Technology high school graduates to work in the textiles industry manager 1 was of the idea that “*problem solving, communication, team work, critical thinking and business skills*” while manager 2 was of the view that “*creativity, innovation, problem solving, collaboration, communication, technical skills and entrepreneurial skills*” were the skills needed by high school TTD graduates to work in the textiles industry.

The above findings revealed that both teachers and managers consider problem solving, critical thinking, communication skills, technical skills, collaborative skills, business/entrepreneurial skills, creativity, innovation and practical skills to be the relevant skills TTD high school graduates should possess to work in the textile industry. The findings are consistent with Wagner (2008) who identified seven soft skills that textile employers expect

graduate to possess for them to be successfully employed in the textile industry which include critical thinking, problem solving, collaboration, entrepreneurialism, effective oral and written communication, creativity, and innovation skills. Employees must possess these skills for their organizations to be successful.

The findings are in agreement with Chida and Brown, (2011) who explained that textile and apparel employers tend to choose potential graduates who are skillful in information technology, innovative, creative, and possess a wide range of technical and collaborative skills. Reeves-DeArmond, Mower and Nishida (2015) also noted that technical skills and knowledge in sewing, pattern making cutting and design, garment production and manufacturing processes; collaborative skills; business skills in understanding of target customers, how to conduct market research, customer service and marketing as well as innovative thinking are the important the skills and knowledge that clothing and textile industry professionals have deemed critical and marketable for students to succeed in industry.

As further highlighted by Robles (2012), technical skills and knowledge used to be the most important characteristics sought during the hiring process by textile employers, however, due to the profound impact of technology, employers now look for not only technical or hard skills (such as math skills, analytical abilities, etc.) but also for so called soft skills such as integrity, communication, and interpersonal skills. In addition, Kappel (2017) also highlights that other skills and qualities employees need to contribute to the success and growth of small companies are dedication, positive mindset, ambition, reliability, focus, self-motivated, and a team player.

The findings are also consistent with Magret (2018) who observed that to succeed in the global retail industry, apparel merchandising professionals need a combination of hard and

soft skills. Soft skills include communication, team work while hard skills include technical skills, critical thinking, problem-solving, and decision-making making skills. Magret (2018) explains that in the global apparel industry, communication and teamwork are critical for establishing partnerships across organizational and cultural boundaries and different time-zones while hard skills relate to the technological aptitude, using industry specific types of databases and software programs to do analysis as well as management of information systems.

4.4 The skills TTD secondary school graduates possess

To address this research question, classroom observation of learners was conducted during theory and practical lessons. This enabled the researchers to assess vocational competence acts that are practical skills of learners as well as some soft and social skills of learners.

The findings of the study revealed that TTD students possess the following skills: practical skills, communication, team work, self-management, flexibility, positive attitude, willingness to learn and cultural competence. However, a skills gap was observed in a number of skills such as critical thinking, problem solving, creativity, innovation and entrepreneurial skills.

The findings show that some indicators of employability skills are possessed by the TTD learners. The skills they possess (teamwork, self-management, communication, flexibility) are considered to be generic or fundamental skills (Yusof, Roddin, and Awang, 2015). Lee and Chin, (2016) consider these to be social skills which industry considers most desirable graduate attributes. Husain, Mokhtar and Alias (2015) consider them as soft skills or non-technical skills, which are very important for graduate's employability. Soft skills are particular abilities that can improve one's employment performance and career prospects.

These soft skills help students to develop their employability skills and make them confident to work in a performance oriented work environment as a critical lifelong learner.

The findings are in line with Dean and East (2019) who observed that nowadays the skills that employers demand from the graduates are changing, with soft skills replacing technical ones. This means that technical skills are no longer enough for workers to compete in this highly competitive global work environment. Soft skills are of paramount importance. Dean and East (2019) further say that the new world includes diverse work groups who can have the ability to interact globally with different cultures. The ability to use interpersonal communication skills is critical for employees to work with and understand team members.

Succi and Wieandt (2019) argued that the acquisition of these soft skills allows students to better adapt to the organizational culture, take initiative and contribute to organizational success. Thus Soft skills are extremely important due to the fact that they help people to adapt and behave positively so that they can deal effectively with the challenges of their professional and everyday life. Archer and Davison (2008) pointed out that the International Employee Barometer survey confirmed the importance of soft skills amongst employers. They argue that employers attributed higher importance to soft skills compared to students' higher education qualifications. Similarly, the World Economic Forum identified 10 out of 16 "crucial proficiencies in the 21st century" to be related to employees' soft competencies (Deloitte Access Economics, 2017, p. 1). The findings are also consistent with Taylor (2016) who observed that in an increasingly data-driven economy, the demand for "soft" social skills, like teamwork and communication, increase with greater demand for "hard" technical skills and tools.

The findings of the study have also revealed a skills gap in a number of skills such as critical thinking, problem solving, creativity, innovation and entrepreneurial skills. This is consistent

with Raichurkar (2018) who observed that graduates for the textile industry lack problem solving skills. Problem-solving refers to a person's ability to successfully manage and find solutions for complex and unexpected situations. Candidates with great problem-solving skills have a combination of both analytical and creative thinking. If students lack problem solving skills, they will not be comfortable with making decisions and confident enough to rise to challenges in the workplace. As noted by Margret (2018), the textile industry today needs employees who possess problem solving skills, who can quickly identify problems when they arise and identify the most effective solutions. They'll also identify the factors and forces that might have caused the problem and instigate changes to mitigate future challenges. If students do not possess such skills they will not be very useful to the textile industry.

Preparing students to be able to think critically is one of the key goals of the TTD curriculum and it is also a quality sought by most employers of college or university graduates. The findings of the study have also shown that TTD learners lack critical thinking skills. This is in line with findings of Rujivanarom (2016) who observed that secondary school students in Thailand have limited critical thinking skills. Changwong, Sukkamart and Sisan (2018) also highlight that the ability to think critically is an essential life skill which if a student does not possess they will not be able to solve problems, design projects, and make effective decisions through different tools and resources. Explaining the importance of critical thinking, Pamungkas and Suharno (2020) say that people exercise critical thinking by using rationality to determine what to do or believe in a specific situation. Employees who can engage in critical thinking are reflective, independent and competent. If you practice critical thinking, you logically connect ideas, scrutinize and evaluate arguments, find inconsistencies and errors in your work and the work of others, solve complex problems and engage in reflection. A critical thinker does not only accumulate information well, but they also know

how to use the information to deduce important facts and outcomes. By conceptualizing outcomes, critical thinkers are better at problem-solving than people who simply memorize information. Because of this, employers value critical thinking, especially in roles where preparing strategy is essential.

The findings have also shown that creativity and innovative skills are also lacking among TTD learners. The findings are consistent with Joseph and James (2015) who noted that graduates of vocational technical institutions lack creative and innovative skills as a result they are jobless. Creative thinking and innovation are particularly useful when designing new products and services. Thus graduate possessing such skills will help their organizations promote greater productivity as a result they can attract and retain customers. Consistent with the findings of Yuan and Woodman (2010) it is challenging for enterprises that lack innovation and creative employees to survive successfully in the market. It is an employee's creative and innovative ability that can help improve overall service performance and quality which are critical cornerstones of a firms' competitiveness, success, and survival.

Lack of entrepreneurial skills among TTD learners was another finding of the study. This is in consonance with Fernandes (2019) who observed that graduates in Portugal lack entrepreneurial skills and attitudes. If students lack entrepreneurial skills, it implies that the learners would not be self-reliant and consequently unemployment problems would persist. Furthermore graduates with strong entrepreneurial skills can spot an opportunity and use their initiative to make the most of it. The findings are in line with those of Ngwenya and Shange (2019) who noted that young people in South Africa are not acquiring the relevant marketable skills they need to secure employment opportunities or, alternatively, to develop their own businesses.

Consistent with the findings of Herrington, Kew and Kew (2015), South African university graduates often lack basic entrepreneurial skills that are essential for establishing start-up business enterprises. The study conducted by Marivate (2014) has shown that the South African curriculum does not prepare young graduates adequately for the challenges and rigours of entrepreneurial careers. Graduates with entrepreneurial skills are an asset to a firm because they will be able to spot gaps in the market, innovate and make the most of it because they are commercially minded.

4.5 Recommendations that can be proffered to address the skills gap

When teachers were quizzed to suggest what should be done to prevent the lack of skills or to close the skills gap and improve the quality of textile high school graduates. Teacher A was of the idea that *“procurement of equipment and facilities for learners to use during practical lessons would help close the gap”* while teacher B was of the opinion that *“learners should be taught what is being done in the industry and should be introduced to the machinery used in the industry”*. Teacher C was of the opinion that *“graduates should have some industrial material and equipment during learning process to possess all the skills and attitudes required in industry”*.

On the same note when textile managers were quizzed to suggest what should be done to prevent the lack of skills or to close the skills gap and improve the quality of textile high school graduates, manager 1 was of the idea that *“schools and industry should form partnerships so that teachers become aware of the skills they should prioritize when teaching and also teachers should use constructivist teaching methodologies when teaching”* while manager 2 was of the opinion that *“ schools should organize work based learning programs for learners where they get the opportunity to put knowledge learned within the classroom to practical use in an on the job work setting”*.

The findings indicate that the skills gap can be addressed through ensuring that schools have adequate equipment and facilities, exposing learners to industry through work based learning programs, using constructivist teaching methodologies and through formation of partnerships between school and industry.

The findings are consistent with Smith (2021) who observed that collaboration between educational institutions and industry is key in addressing the skills gap. In today's industrialized and digitalized economy where, it is important that graduates are equipped with the skills that employers are looking for. As noted by, Oviawe, Uwameiye and Uddin (2017), cooperation between academia and industry will ensure that these skills are taught at all levels of education. It is equally important that further and higher education institutions work in tandem with employers to align curricula with these emerging needs. Ayonmike and Okeke (2016) also note that collaboration between schools and industry enable teachers to be aware of the skills they should prioritize. In addition, teachers need support from business and industry in terms of resources so that they can be able to address the skills gap.

The study has shown that ensuring that schools have adequate facilities and equipment is one way of addressing the skills gap. This is in agreement with Oviawe, Uwameiye and Uddin (2017) who highlight that schools need to be equipped with modern tools and materials to ensure a shift from theoretical to practical teaching. Furthermore, for educational institutions to meet manpower needs of the 21st century workplace, adequate provisions of the right technological work base learning facilities and equipment to train the students on the current practices involved in the 21st century world of work must be made available for effective and functional learning to take place.

Work-based learning is another way of bridging the skills gap. This will enable students to gain valuable work experience with industries found within and around the educational

institutions and is a key for meeting manpower need in industries (Soares, 2010). As noted by Konstantinou and Miller (2021), work based learning combines elements of learning in the workplace with classroom-based learning thus students will be able to deploy and articulate the employability skills that will become part of their professional identity. In addition, Helyer (2015) explains that work-based learning occurs when high school students participate in real-life work environments to gain career experience and apply their classroom knowledge and skills. Thus high school work-based learning opportunities can provide the type of on-the-job experience students need to grow their knowledge and skills, as well as help them make informed decisions about their post-secondary education and career pathway. By participating in these programs, students build a sense of occupational identity and discover their passions and motivations.

The findings also reveal that using constructivist teaching methodologies helps close the skills gap and promotes the transition of high school students into the workforce. This is in agreement with Washor (2015) who explained that constructivist teaching method is best practiced by applying hands-on-approach and enables students to acquire both the soft and hard skills relevant to the world of work. The findings are also consistent with Kim, Raza and Seidman (2019) who observed that improving the quality of instructional practices through the use of constructivist teaching methodologies is critical in the development of competencies known as 21st-century skills among learners.

4.6 Summary

This chapter has presented, analyzed and discussed the findings of the study. The findings revealed that both teachers and managers consider problem solving, critical thinking, communication skills, technical skills, collaborative skills, business/ entrepreneurial skills, creativity, innovation and practical skills to be the relevant skills TTD high school graduates should possess to work in the textile industry. In addition TTD students possess the following

skills: practical skills, communication, team work, self-management, flexibility, positive attitude, willingness to learn and cultural competence. However, a skills gap was observed in a number of skills such as critical thinking, problem solving, creativity, innovation and entrepreneurial skills. Furthermore, the findings indicate that the skills gap can be addressed through ensuring that schools have adequate equipment and facilities, exposing learners to industry through work based learning programs, using constructivist teaching methodologies and through formation of partnerships between school and industry. The next chapter will give the summary, conclusions and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In the previous chapter, the data collected was analyzed, presented and discussed. This chapter provides a summary of the whole study as well as the conclusions and recommendations arising from the study.

5.2 Summary

The importance of the skilled workforce cannot be overemphasized as it contributes immensely to the social and economic development of the country. The continuous growth in and expansion of the textiles industry in Zimbabwe has led to exponential growth in positions that require certain skills. The question of how to best equip TTD students with skills required for the rapidly changing textile industry becomes critically important since students are more prone to encounter competition in the job market when they finish school. Because of this TTD educators need to re-think what skills are most important for students to acquire and how to prepare students to meet the emerging roles textile industry. Therefore determining skills level of TTD students which the textiles industry deems necessary for one to be successful in that industry as well as if the skills are being taught in secondary schools was the major purpose of this study.

The level of skills possessed by vocational education graduates for employment has been a worrisome issue in a number of countries. For instance in Nigeria, Ayonmike and Okeke (2016) have observed that representatives of labour markets tagged graduates from Nigerian universities as half-baked perceiving these graduates as lacking in employable skills, making them unemployable. They further opine that, despite government efforts to revitalize

vocational education at all levels, vocational education graduates still lack skills such as occupational and employability skills to survive in the world of work.

For an employee to succeed in the textiles industry, one needs to possess specific competencies that comprise hard and soft skills (Jacobs, 2018). Jacobs (2018), describes soft skills as character traits or desirable qualities that are transferable from one work or industry context to another. These consist of life and career skills, learning and innovation skills, information, media and technology skills, critical thinking, problem solving, communication, and collaboration. Robles (2012) define hard skills as the technical expertise and knowledge needed for a job: that is job-related knowledge and abilities learned through education or training that employees need to perform their job duties effectively. These skills are related to one's knowledge, practice, aptitude, competence, excellence to do something well as a result of specialized training.

In order to investigate the central problem of the research, the case study research design was used. The aim of using a case study design was to provide an in depth exploration of the skills level of TTD students which the textiles industry deems necessary for one to be successful in that industry. The population of the study consists of five secondary schools, 5 TTD teachers and 150 learners in Mutegesa cluster in Featherstone. The population also included three managers form textile construction companies in Gweru. In this study the sample was made up of three TTD teachers from three schools, twenty seven learners and two managers from textile manufacturing companies. The purposive sampling technique was used to select the participating teachers and managers. Data were collected through questionnaires, interviews and classroom observations. The thematic approach was used to analyse the data.

The findings of the study revealed that problem solving, critical thinking, communication skills, technical skills, collaborative skills, business/ entrepreneurial skills, creativity, innovation and practical skills were considered to be the relevant skills TTD high school graduates should possess to work in the textile industry. In addition TTD students possess the following skills: practical skills, communication, team work, self-management, flexibility, positive attitude, willingness to learn and cultural competence. However, a skills gap was observed in a number of skills such as critical thinking, problem solving, creativity, innovation and entrepreneurial skills. Furthermore, the findings indicate that the skills gap can be addressed through ensuring that schools have adequate equipment and facilities, exposing learners to industry through work based learning programs, using constructivist teaching methodologies and through formation of partnerships between school and industry.

5.3 Conclusions

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

- The present study points to the fact that employability of TTD learners in the textile industry is dependent not on mastery of problem solving, critical thinking, communication skills, technical skills, collaborative skills, entrepreneurial skills, creativity, innovation and practical skills.
- It was ascertained that while TTD learners are generally competent in the following skills: practical skills, communication, team work, self-management, flexibility, positive attitude, willingness to learn and cultural competence, they were not excellently competent in the following skills: critical thinking, problem solving, creativity, innovation and entrepreneurial skills.
- Closing the skills gap requires education and industry to build meaningful partnerships that expose learners to industry through work based learning programs

and the use of active learning methodologies in well-equipped classrooms to ensure that graduates possess the skill sets desired in the current workforce and beyond.

5.4 Recommendations

The study makes the following recommendations:

- Schools should foster an enabling learning environment that helps learners to acquire and develop skills relevant to the textile industry.
- TTD teachers should provide enrichment activities that help learners to develop competency in critical thinking, problem solving, creativity, innovation and entrepreneurial skills.
- Schools and industry should create opportunities for learners to participate more in work-based learning programs as well as industrial visits or field trips to enhance development and acquisition of employability skills.
- Textile Technology and Design teachers should be trained and re-trained on employability skills development strategies to enhance their sense of efficacy and practices in fostering learners' competencies in employability skills.
- There is a need for the Education system to adopt assessment strategies that are geared towards measuring and tracking the development of employability skills that are now critical in a complex global environment.

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APPENDIX A

QUESTIONNAIRE FOR TEACHERS

My name is Bellania Machingura a BED Fashion and Textiles Student at Midlands State University My research topic is as follows: Investigate the skills gap between the Ordinary level Textile Technology and Design learners and the textile construction industry. Your participation in the study by completing the attached questionnaire will be greatly appreciated.

Section A: Background Information

Please provide the following background information. Please tick [✓] one option.

1. What is your gender?

Male Female

2. Your years of teaching experience.

0-5 years 6-10 years 11-15 years over 15 years

3. Your qualifications in your current role.

DipED BED MEd other (specify).....

Section B: Skills Needed by Textile Technology graduates

4. Which skills do you think would be relevant for TTD learners to be employed in the Textile Industry?.....

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5. Why are these skills relevant?

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Section C: Methods of Skills Acquisition

6. What teaching strategies do you use to impart these skills in learners?

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7. How effective are these methods in equipping learners with the needed skills?

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Section D: Causes of skills gap

8. Do you believe your TTD students after high school possess the skills needed to work in the textiles industry?

Yes No

If no, what are causes of this skills gap?

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Section E: Closing the skills gap

9. What would your recommendations be to prevent the lack of skills or for closing the skills gap?

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Thank you for taking time to fill in this questionnaire. Your assistance is greatly appreciated.

APPENDIX B

INTERVIEW GUIDE FOR TEXTILE MANAGERS

Introduction

Thank you for agreeing to participate in this study. I am interested in the skills and knowledge you think are important for secondary school textile students need to have to work in the textiles industry. There are no right or wrong answers. I am only interested in your experiences and opinion.

Skills Needed by Textile Technology graduates

Can you identify the skills needed by Textile Technology high school graduates to work in the textiles industry.

How important are these skills to the textiles industry?

Methods of Skills Acquisition

How can secondary school TTD teachers impart/teach these skills in learners?

Causes of skills gap

From your experience, do you believe textile students after high school possess the skills needed to work in the textiles industry?

If no, what are causes of this skills gap?

Closing the skills gap

What do you suggest should be done to prevent the lack of skills or for closing the skills gap and improve the quality of textile high school graduates?

APPENDIX C

CLASSROOM OBSERVATION GUIDE

Skill	Descriptor	Exhibited	Not exhibited
Communication	Being aware of how communication affects others; asking questions; listening actively; showing respect in all communications, oral and written; social skills.		
Team work/ collaboration	Working well with others to complete tasks; contributing to new ideas; working well with others of different gender, culture or beliefs; following the directions of peers and seniors; forming positive relationships; developing leadership ability.		
Self management	Arriving at class on time; wearing the right clothing and having right equipment; noticing how personal words and actions can affect others; showing commitment and responsibility; being dependable; following instructions and completing tasks; following health and safety guidelines good work habits; planning and organising; showing initiative; emotional intelligence.		
Thinking skills (problem solving and critical thinking)	Considering all the options before making a decision; seeing problems and trying to solve them; thinking before acting; thinking about consequences before taking action; knowing when to seek help; literacy and numeracy skills; resourcefulness.		
Positive attitude	Having a 'can do' attitude; being optimistic; being honest; being friendly and showing respect; demonstrating motivation to work hard taking initiative; ethical integrity; self-confidence; professionalism.		
Willingness to learn	Willing to learn new tasks, skills and information; curious and enthusiastic about things; looking for opportunities to improve or to help; accepting advice and learning from feedback.		
Initiative and Entrepreneurial skills	A persuasive manner and style; demonstrating ways to find solutions; discussing the effects of alternative approaches; challenging status quo; encouraging buy-in from others to a particular perspective.		
Creativity and Innovation	Shows invention when applying processes; encourages fresh thinking; attempts new ways to solve problems; shows creativity; discusses alternative options; use of and confidence with technology		
Agility, adaptability and resilience	Adapting to new/changing situations; not giving up when there is a setback; getting help when needed it; accepting own mistakes and learning from them; flexibility.		
Cultural competence	Acknowledges differences; allows for different ways of working; acknowledges and embraces diversity; welcoming contributions of others; invites cultural contributions.		