LOCALISING GLOBAL APPROACHES TO IMPROVE CLOTHING, TEXTILE, AND APPAREL INDUSTRY STANDARDS IN KENYA: A SYSTEMATIC LITERATURE REVIEW

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Localising Global Approaches to Improve Clothing, Textile, and Apparel Industry Standards in Kenya: A Systematic Literature Review

ABSTRACT

The Clothing, Textile, and Apparel (CTA) industry has witnessed significant growth in East Africa, making it one of the best in current job creation and future employment projections. Global leaders in CTA, including the United Kingdom, the United States, Germany, France, and Italy have invested in training and capacity development to create sustainability in the CTA industry. In Sub-Saharan Africa, there is significant investment in CTA courses in universities in countries such as South Africa, Morocco, and Egypt. In Kenya, CTA training has previously been overlooked with less investment in the industry since the late 1980s. This paper explores literature on CTA training methods in countries with large performing CTA industries and their applicability in Kenya to increase the pace of growth of the industry. A systematic literature review is applied in this study through desk research methods. The study was conducted in Nairobi Kenya a part of a continuing doctorate study programme. Its subjects were fashion designers spread and sampled in the countries mentioned above. From the study, it emerged that critical application of CTA training and knowledge transfer methods in countries with advanced industries through a situated learning approach can improve the industry in Kenya. However, this localization should aim at removing the barriers in the CTA industry, creating a sustainable linkage between academia and industry, improving syllabus design, delivery, and progression, and skills exchange programs. Aptly, the recommendation in the study is improving the research into CTA training and knowledge transfer in countries with advanced industries and applying the knowledge to the local industry through sufficient localization of the training and knowledge transfer.

Keywords: Fashion design, Textile engineering, Apparel design, clothing and textile science, skills development, Kenya.

1.0 INTRODUCTION

The Clothing, Textile, and Apparel (CTA) industry has seen immense success across the world as a direct effect of globalisation, which has created new opportunities, technology, resource collaboration, and training techniques [1]. Successful countries in this industry have leveraged global skills and collaborated, with increased focus on quality of production systems and the skills of the human resources [1]. Multinational corporations in leading CTA economies have received support from their local governments through trade and human resource agreements while improving their knowledge transfer and setting trends in the global industrial change. Majority of these leaders are large European, American, and Asian companies, which also enjoy support from their governments. According to Ahmad et al., these companies and their economies stay ahead of the competition through modernised, trend-based, and adaptive CTA training and capacity development [2].

The global supply chain in the CTA industry is dominated by the countries whose CTA training investment has increased over the past years while the technology and approaches in knowledge transfer have also modernised [3]. Examples of these countries are China, Germany, Bangladesh, India, and Italy [3]. For some of the developing countries such as Cambodia and Pakistan, the CTA industry is a major part of their economy contributing nearly 50% of their manufacturing [4]. Such countries invest in the CTA training out of necessity to sustain their economies rather than a burning need to improve the industry in isolation. Such countries show increasing value and focus on the CTA industry globally.

In Africa, countries like Egypt and South Africa have continued to modernise their CTA industries and improve their CTA training to match the global standards. Kenya is one of the main players in the CTA industry in Africa despite the decline from high productivity and training standards compared to the 1980s [5]. The CTA industry employed more people (42,000) and produced over 70,000 bales of cotton textiles in the 1980s with skills and technology that was among the best in the region at the time [6]. The industry has declined by over 55% with import of second-hand clothes, inadequate skills and knowledge, low government support, and high cost of raw materials among the reasons for this decline [7]. Modern strategies, projections, and government focus point to possible revitalisation of the industry with steady growth seen over the past five years.

Experts and researchers suggest that improved CTA training and knowledge transfer can help to revitalise the industry. However, there are varying opinions on how this knowledge transfer and training should happen. Three main schools of thought have been developed: The first school of thought suggests developing content and training materials customised to local needs and situations as a way to develop skills that will ultimately provide success in the local content [25]. Another school of thought supports benchmarking and transferring the approaches and strategies used in countries with successful CTA industries to Kenya [22]. A final school of thought suggests situated learning as an effective strategy in not only transferring but also localising the training and knowledge transfer strategies from the countries with successful CTA industries to the Kenyan CTA industry [26].

The problem that this research tries to analyse is the increasing gap in training approaches and knowledge transfer skills in the Kenyan CTA industry and hypothesising whether situated learning and

localization of CTA training approaches in developed CTA economies can lead to significant growth in Kenyan CTA training. Outdated CTA training and delivery methods, maladaptive and non-modernised syllabuses in the colleges and universities, low collaboration between the schools and CTA industry leaders, and lack of structured internship and apprenticeship programs have all affected the CTA training quality and investment in the industry. These factors have been improved in countries like South Africa, The United States, the United Kingdom, and Germany to improve their CTA training quality [11].

The main objective of this study, therefore, is to systematically analyse the CTA training approaches including material development and delivery methods. The study then applies these methods and systems to the local environment in a situated learning approach to improve the Kenyan CTA training environment. Finally, the paper provides recommendations on methods of applying the CTA training and learning approaches in the developed economies to the local CTA industry in Kenya for improvement, development, and modernisation of the CTA industry.

2.0 THEORY

Unlike many industries where theoretic learning and practical applications can be separated, the CTA industry requires ample collaboration and unification of theoretic and practical knowledge transfer [10]. Countries with advanced CTA training have focused more on well-grounded theoretical teaching, heavy practical and experiential learning, industry partnerships for real world CTA work, and financial investment in CTA training. Understanding the basis of this investment and the benefits that have been gained from it is important in understanding the methods to improve the training environment within the CTA industry in a developing or developed economy.

2.1 CTA Curricula and Academic Focus

Yezhova, Pashkevich, and Manoilenko compare the CTA curricula in European countries and note that Germany has a curriculum focused on segmented areas in the CTA industry to cover for trends and modernization [11]. They note that the German educational curriculum focuses on fashion for the modelling and brand modernising, CTA manufacturing, CTA branding and trends, and sustainability in CTA as critical teaching and study areas for the CTA industry. The focused syllabus applied in the country helps the students to focus on specific areas and keep their knowledge updated with trends and developments in the market. The syllabus also ensures that the industry is focused on specific training areas with investment in teaching resources for the specific areas of the industry. Graduates from these sources gain practical and theoretical knowledge through the work-based learning approach applied in each of the courses and learning areas [12]. It also ensures that there is ample interaction between the industry and the students during the training, an effective way in ensuring skills transfer across different levels in the industry. Nearly half of the German syllabus includes the students working on their own to create solutions to existing market challenges and working with players in the industry to apply their knowledge. This model of learning not only grounds the students but also ensures the knowledge and skills gained throughout the training process create a refreshed environment for the learners to apply their skills and improve their knowledge of the current and future trends in the market [11].

Radclyffe-Thomas notes that the CTA training in the United States focuses more on preparing the learners for the future rather than the present or the past [13]. The focus on the future means there is extensive syllabus focus on the changes that have happened in the industry and prediction of future gaps and actions in the industry. Comparatively, both the United States and Germany focus on developing curriculum leveraging modern technology and industrial trends in improvement of training and knowledge transfer in the industry [12, 13]. The syllabus in the United States is developed by industry experts rather than academia [14]. The argument, according to Jung and Jin, is to allow industry leaders a chance to determine what is most critical in the industry and their projections of future industry needs and demands and develop a syllabus that sufficiently addresses these needs and gaps [13, 14]. Like Germany, work-based learning is also a major part of the curriculum in many CTA training institutions in the United States [11, 14]. There is increased focus on ensuring sustainability by exposing the students to the industry and ensuring the curriculum effectively responds to existing and future needs in the industry.

The CTA training syllabus in Italy is characterised more by increased partnerships with the industry for supply of trainers and tutors and less with joint curriculum development [15]. Although they are involved in curriculum development in minor roles, the industry experts in the CTA industry in Italy mainly take part in delivery. Lazzeretti and Oliva argue that Italian syllabus and curriculum development borrows more from the experience in the industry and prepares students better to take up industry roles than the theoretical model applied in other countries [15]. Like the United States and Germany, there is also more focus in Italy towards the future needs of the industry with heavy focus on sustainability in the industry within the training curriculum [13, 14. 16]. Like the United States, Italy also focuses on creating a labour force for the future with focused training on current and future industry needs and focus on specific segmentations within the industry [15, 16]. The case is the same for many other sectors across the country where there is more focus on the components of the industries in the educational setup.

In Pakistan, the CTA training institutions are considered more as enablers of the industry's success than they are partners in development of the industry, where they provide the human resources but there is limited industry partnership in the training process [17]. Education in the industry focuses on giving the learners the knowledge first and experimenting it in practice later in their learning environments. An important requirement for the learners is practical industry experience prior to their graduation from the CTA training institutions. The requirement ensures that they gain critical knowledge of the operations of the industry before they finish their studies and have a better understanding of their application within the industry [18]. Critical skills such as creativity, problem solving, leadership, and entrepreneurial thinking are emphasised in the training curriculums. Academic professors and lecturers are in charge of developing the curriculum in the Pakistan education system [17, 19]. Although there is considerable observation and engagement with the industry in developing the curriculum, the knowledge imparted is mainly based on present and past successes rather than practical forecasting of the industry future and sustainability [19]. Critically, the academic leaders are also in charge of implementing the curriculum, which denies a chance to implement an apprenticeship approach to learning and student partnerships [18]. Unlike other countries such as Germany, the United States, and Italy, Pakistan mainly separates

industrial experience from in-class training, which denies the curriculum and evolution opportunity to benchmark with present and future industry trends.

2.2 CTA Industry Partnerships in Training

Industry partnerships have been credited with keeping the learning environment fresh, ensuring the academic curriculum and methods keep with industry trends, and providing an opportunity for live projects within the teaching framework in tertiary institutions [4]. The United Kingdom has one of the best partnerships between the industry and academia in teaching, learning, mentorship, and skills transfer in the world where there is an open engagement policy between the academia and industry leaders [20]. Many universities teaching CTA courses such as fashion, CTA manufacturing, and sustainability have partnerships with a work-based learning approach emphasised [20]. More institutions in the country have a deeper focus towards ensuring that the learning environment supports transition to knowledge-based skills production institutions rather than theoretic learning centres [21]. Partnerships with the industry in the UK also include partnership towards apprenticeship and support for upcoming experts and human resources in the industry. Although relatively small in scale, more experts and seasoned leaders in the CTA industry have embraced support for younger academics and upcoming experts in the industry than in many other countries [22]. Where apprenticeship cannot be offered, supervised internships, project-based learning, and focus on new-design training are adopted [20]. A wider variety of courses than many other countries also means that the industry experts have a wider range of choices regarding the internship and work-based learning areas.

A portfolio-based learning system in South Africa helps in focusing the industry partnerships to a project-based collaboration between the institutions and the industry [23]. There is an attempt by educational institutions to encourage industry partnerships through project-based learning and internships. Students take the initiative to get information from industry leaders and involve them in their projects through theses and data collection for their projects [23]. However, the majority of the lecturers and teachers in the industry are seasoned researchers and academia with minimal experience within the industry [24]. Lack of cohesion in transferring the modern trends and knowledge to the students has slowed down the development of the industry in the country and increased focus on theoretical knowledge-based learning. According to Harvey and Lucking, one of the major challenges in sector collaboration in the CTA industry in South Africa is lack of a well-defined framework for linkages and collaboration between the academia and the industry [25]. Design of the courses, therefore, focuses more on business, marketing, and entrepreneurship skills and less on problem solving, global design trends, and existing frameworks for CTA industrial evolution and globalisation. With researchers and technicians, who form a major part of the teaching staff involved in the design and delivery of the curriculum, change towards a more industry focused and work-based learning framework in South Africa is necessary to boost the relationship between the academia and industry in CTA training.

The United States has a more established partnership between the CTA industry and academia that is structured across the learning spectrum. Oh and Choi note that structured partnership between the Academia and the CTA industry has made the training popular and a benchmark in both North and South Korea [26]. The first level of partnership is in syllabus and curriculum design where industry leaders

are actively involved with their feedback collected to design the most attractive and effective CTA courses [13]. During the training, there is also more focus on work-based learning with students encouraged to work with the industry leaders across different levels [14, 27]. Institutions have also instituted strategies aimed at ensuring students work with industry leaders such as partnering in mentorship and allowing the students to undertake their projects in real-world scenarios and environments. Majority of the trainers are also seasoned experts in the CTA industry with more focus on the present and future state of the CTA industry [27]. To facilitate ample interaction with the industry, the curriculum is designed to provide a wide variety of areas and selections for the CTA students including manufacturing, design, and fashion courses. Students work in co-design and co-creative environments to encourage further participation of the customers and other industry players [27].

The approach in Germany is similar to the United States because of the conscious involvement of the CTA industry leaders in developing and implementing the curriculum [13, 14, 27, 28]. The difference between these countries is in the implementation. In Germany, there is more focus on the production potential of the CTA industry and less on the trends and industry evolution [28, 29]. CTA students work more in the industrial production units due to higher focus on production and manufacturing. Germany aims to be the global leader and trend setter in CTA production with the United States more focused on trade and commercialization in the CTA industry [13, 29]. Germany has also mandated work placements for the CTA students to ensure that every university provides for students to have significant industry engagements before they attain their qualifications [30]. Teachers also focus on individual creativity, independence, self-drive, and problem solving. Industry leaders have argued that a workforce that looks at CTA challenges and problems as an opportunity to make Germany a market leader is more productive and necessary than those that look to contribute towards widening the existing quality level [27, 30]. Emphasis on cutting edge design skills and methods, which is backed by industry experience and creativity ensures that Germany remains one of the leaders in sustainable CTA training globally.

2.3 Investment in the CTA Industry

Investment in the CTA industry is the driving force in the advancement of CTA industries and training for many of the countries where the industries are thriving [1]. Industry investments have fuelled the success of the CTA industry in Germany, Italy, The United Kingdom, and South Africa. Yan notes that Pakistan has increased investment in the CTA industry because the economy heavily relies on the industry for manufacturing and trade jobs [31]. The investment includes financial input into the training institutions, which includes modernization of the institutions, investment in technology, investment in human resources, and investment in the creative process for the industry. Investments include financial, infrastructural, training, exchange, and research investments to make the industry more reliable, current, and strategic.

The United States is one of the countries with the highest net investments in CTA training and the CTA industry across the world [32]. Lin notes that investments in the CTA industry are focused towards training a globally competitive workforce that not only makes the country self-reliant on its own labour but also makes the country a strategic partner for international CTA industries [32]. With a focused sector that offers different ranges of opportunities, the American CTA industry has received funding

from the government, academic institutions, global brands, philanthropists, and corporate institutions [33]. Grants are focused on research and development while there is significant government investment in infrastructure and asset development for the industry. CTA training also receives significant investment especially with mandated grants from companies and the government towards boosting innovation and creativity in the industry [33]. Trade Unions have successfully lobbied for institutions to increase the number of experienced tutors while maintaining researchers and academia to provide a good balance between the skills and knowledge transferred to the learners.

In Germany, significant gains are attained from the need to increase localness of the CTA brands through using local technology with investment that attains global standards. Training receives huge support from industry-based players with innovation focused on making the training locally applicable and internationally recognized [34]. Like the United States, there is immense support from the industry including grants from organisations, philanthropists, and global CTA brands [33, 34]. There is also increased government participation especially through infrastructural development and incorporation of standards and training approaches that not only foster good syllabus development but also create valuable partnerships [35]. In-depth theoretical studies on history and social-cultural studies are included to foster individuality. Financial investment provides an environment where creativity, entrepreneurship, and work-based learning are all possible. For significant growth in the CTA industry, focus on motivation, financial investment, infrastructural modernisation, and critical resource collaboration are all critical for the CTA industry.

3.0 METHODS AND MATERIALS

This paper uses the systematic literature review to analyse the CTA training approaches in countries with good performing CTA industries and Kenya. The literature is drawn from the United Kingdom, the United States, Germany, France, and Italy to give the global perspective. The paper also analyses literature from South Africa and Pakistan to understand the perspective from developing countries that have successfully developed their CTA industries into leaders in their economies. A simplified research protocol shown in figure 1 was applied in this study to create a good analysis environment for the literature

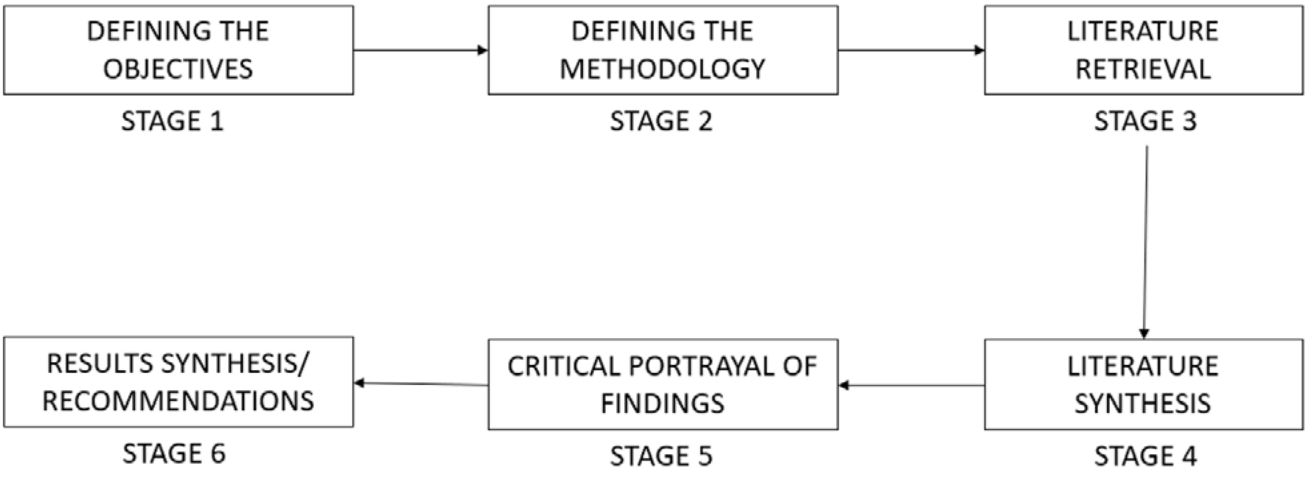

Fig. 1. Showing the research protocol used in this paper. Source: Authors

in this study.

Through using this research protocol, table 1 shows a summary of the literature retrieved in this study. It summarises the search protocol into the specific results and literature obtained in the study. It also shows the inclusion and exclusion steps, which help to summarise the inclusion and exclusion criteria for the study. Finally, it shows the keywords used to search and extract literature analysed in this paper.

Keywords	**Results from Scopus, Ebscohost, and Proquest**	**Sources with an Abstract**	**Sources with a clear methodology**	**Sources published after 2015**	**Repeated sources**	**Total sources included**
clothing + textile + apparel + training + methods + Germany	29,500	586	129	7	0	7
clothing + textile + apparel + training + methods + United States	35,803	499	97	6	2	4
clothing + textile + apparel + training + methods + Italy	26,242	802	100	5	1	4
clothing + textile + apparel + training + methods + Italy	29,049	374	67	7	3	4
clothing + textile + apparel + training + methods + United Kingdom	27,700	408	103	6	3	3
clothing + textile + apparel + training + methods + South Africa	26,891	298	99	3	0	3

clothing + textile + apparel + training + methods + Pakistan	19,100	338	89	5	1	4
clothing + textile + apparel + training + methods + Kenya	17,406	604	101	4	1	3

The 32 sources were systematically analysed for literature on the CTA training approaches in the focus economies across the world. In analysing this information, the constructivist and situated learning theories were applied. According to the constructivist theory, learners construct knowledge by making conclusions, inferences, and application of critical thinking rather than passively taking the information delivered [8]. Through this theory, this paper concluded that learners are likely to be active participants in their own learning, which means any localisation of knowledge should consider and include the role of learners in the process.

To achieve the results of this study, the sources are analysed in three major ways. First, a systematic look at the thematic training approaches in the countries of interest is undertaken. Second, a comparative analysis is undertaken with Kenya as a comparative case for each of the thematic areas. Finally, recommendations on localization of the CTA training approaches in these countries are undertaken to understand their applicability in Kenya. Thematic areas include the CTA curriculum and general place in academia, collaboration between the CTA industry and the CTA training institutions, and investment in CTA training and industry.

3.1 Situated Learning Approach

The situated learning theory postulates that learning and knowledge is transferable by application of real-life learning and knowledge environments in a practical environment to create knowledge points and practical environments for learners to acquire a skill [9]. The situated learning approach includes application of environmental factors and features to knowledge to immerse learners into the process and allow them to gain knowledge experientially. It situated learning, a learner looks at the information gained from other sources then applies the local and environmental factors to make it relevant to them and their circumstances. In situated learning, the real work environment is simulated to provide authenticity, realistic work environments, and role play in the learning environment [9]. Each of these elements show the replication of real-life work environments and learning environments that promote transferability of skills from the work environment to the class environment. It combines coaching, authentic content, and real-life localised industry experience.

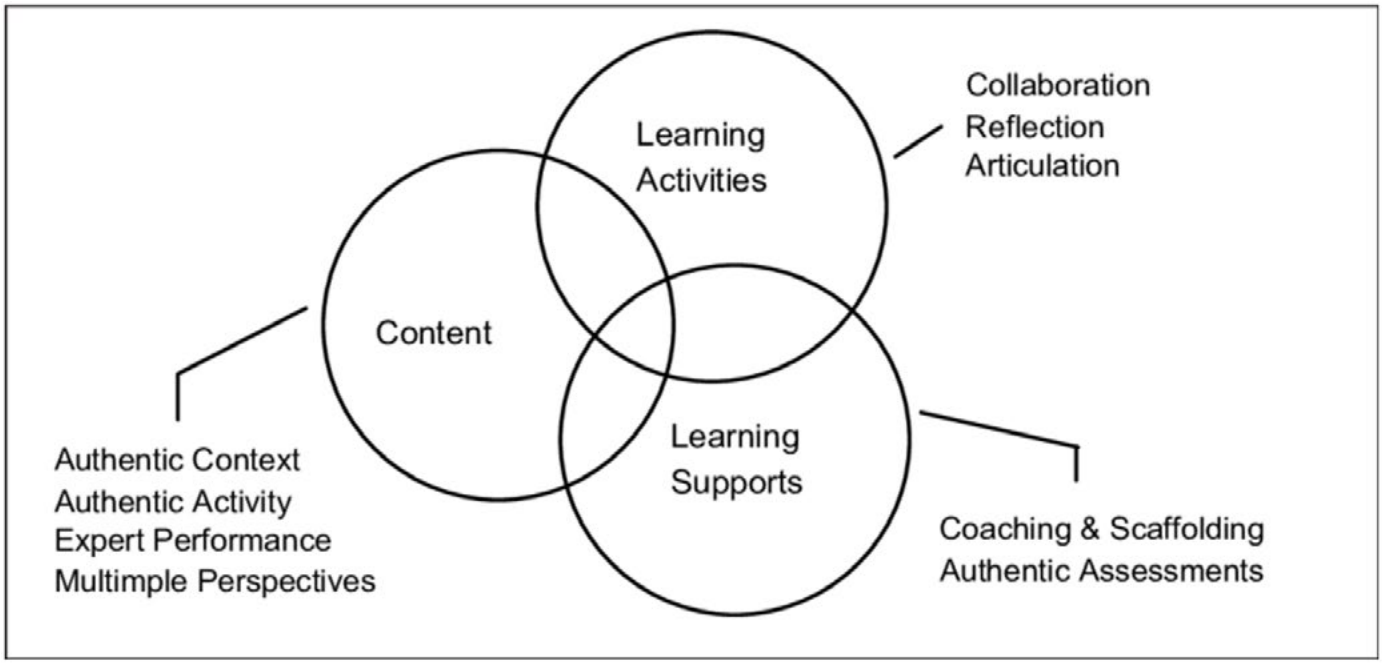

Fig. 2. Showing a model of the situated learning approach suggested for localising international CTA training standards.

4.0 DISCUSSION

A comparative analysis of Kenya against economies with established CTA industries shows the areas of strength and weaknesses in Kenya CTA training and the training methods and approaches that can be localised to improve the local CTA training environment. In Kenya, syllabus and curriculum development is mainly done by the academia with research and partnerships with the industry [36]. There is less focus on industrial experience with some of the trainers having worked in academia all their life and having no industrial experience [36]. Researchers argue that lack of industry experience affects the quality of teaching by the Kenyan CTA trainers, which means they do not deliver the best and most applicable content [6]. However, benchmarks set in countries such as Germany, the United States, and Italy show that there is better potential for the industry when curriculum development is undertaken in line with the industry standards and development. In Italy, there is partnership in tutoring where the industry leaders help in teaching and content delivery within the classroom [13]. In Germany, the industry leaders are involved from curriculum development to teaching and review [12]. Pakistan offers a similar environment to Kenya where the industry leaders are considered enablers and supporters rather than active participants in syllabus and curriculum development in the industry [19]. Despite the competitiveness of the CTA industry in Pakistan, the country still lags behind developed CTA industries like Germany and the United States. The results point to a need for the CTA training institutions in Kenya to foster more partnerships with the industry in curriculum development. There is a need to involve the experts at all levels in CTA training to continually improve and develop the industry. Modernisation of the industry and increased output can be achieved through creative industry involvement in curriculum

development and content delivery.

Countries with successful CTA industries also have strong partnerships between their industry and the CTA training institutions. The United Kingdom has shown increased focus on a work-based learning environment where students actively work on real life projects together with business and industry leaders to gain practical skills in the CTA industry [20, 21]. Providing a wide range of courses that are customised to the working environment and roles in the business environment rather than those that are customised to academia and research has also enhanced the partnerships and mentorship in CTA training in the United Kingdom [22]. South Africa has significantly lower levels of partnership with the industry compared to the United Kingdom [24, 25]. However, the portfolio-based learning that encourages students to work on real life projects in the CTA industry and fosters entrepreneurship, creativity, and problem solving has improved CTA training quality. The United States and Germany have programs that ensure full involvement of the industry leaders in the academia and training for CTA students. In both countries, industry leaders are involved across all levels of the CTA training value chain including curriculum development, delivery, internships, placements, and innovation. Programs that mandate global leaders in CTA to partake in academic improvement of the CTA training are common in both countries [14, 27, 29, 30]. In Kenya, there is a separation between the industry and the academia with some students going through their CTA training without industry experience, placement, or projects [37]. There is no law mandating placement for students while there is limited supervision of internships and work experience gained [36, 37]. Many of the trainers are researchers and seasoned lecturers, which denies them the industry experience to keep up with changing industry needs. Critical analysis points towards structured industry partnerships as a pathway to improving CTA training in Kenya. Localisation of the industry partnership models in Italy, Germany, and the United States through situated learning approaches can help to create vibrant relationships between the industry and academia and improve the training environment for a more productive CTA industry in Kenya. The localisation should consider the structure and capacity in the local industry while keeping up with the trends in the global industry.

The final area where localisation of international approaches would improve the local CTA training environment in Kenya is through enhancement of investments in CTA training. CTA training investment includes financial investment into CTA research and development, investment in human capacity development, and investment in industry growth and development programs. Pakistan CTA industry has developed with the backdrop of increased investment in the industry [31]. Despite the small nature of the country's economy, the CTA industry has continued to advance and create significant gains in employment and income. The United States has been more successful with the CTA investments, creating a network of businesses and establishments that have supported CTA training and institutions [33]. The government also directly invests in infrastructure and capacity development while trade unions have been active in advocating for more investment in the industry to make it more competitive [32]. Germany has a similar model to the United States, especially support and investment from leading CTA brands in CTA training in the country [35]. Comparatively, there is more government investment in CTA manufacturing in Germany than in the United States while the United States trains more people in CTA trade than Germany [32, 35]. In Kenya, investment in the CTA industry decreased significantly between

the late 1980s and 2010 [38]. Technological investments, research and development, and general capacity building reduced, making the industry decline from one of the leaders in the economy [36, 38]. However, evidence from established CTA economies shows that investment in CTA training and continued partnerships with the industry can help revitalise and invigorate the CTA industry. Localisation of the international approaches to CTA training such as industry partnerships, CTA training investment approaches, and curriculum development can propel the Kenyan CTA training to more success.

5.0 CONCLUSION AND RECOMMENDATION

Booming and successful CTA industries across the world expose the fact that continued investment in the industry can yield growth in Kenya. CTA training is the foundation of a successful CTA industry. Localisation of some of the approaches and techniques that have improved training and in turn productivity for the industry in other countries offers a good pathway for success in the industry. The literature suggests that localising the curriculum development approaches, industry partnerships in training and human capacity development, and investment in the CTA training institutions can help in advancing the industry. However, a situated learning approach should be used where these strategies and approaches are relevant with critical application to the local environment and considering the resource and operational characteristics of the Kenyan CTA industry.

Several steps can be taken to ensure the localisation advances and a reasonable baseline for improving CTA training is developed. First, there is need for research into the critical steps through which international approaches can be localised, the level of investment necessary, and the characteristics of the local CTA training environment before implementation of the international CTA training approaches. Government involvement in revitalising CTA training should also increase especially with mediation in curriculum development, investment in CTA training amenities and facilities, and modernisation of the CTA industry. Provision of a clear framework for the role of the CTA industry and private sector in CTA training can also help foster better partnerships between training institutions and the industry and improve the state of CTA training in Kenya.

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APPENDIX

Comparing CTA Training Characteristics in Select Countries

Characteristics of Curricula Around the World *NB Most institutions were found to adequate training on business skills						
	UK (LCF)	**Germany (Berlin Institute)**	**Pakistan (PIFD/NCA)**	**South Africa (UJ)**	**Ghana**	**Kenya**
Course structure	1 year general foundation 3 year degree; course builds on knowledge year on year	3-4year degree after pre-study internship	4-year degree course based on aptitude test, with a 1-year foundation program	3-year Degree	4year degree with 1 year foundation (not fashion)	4-year degree
Industry-focused	Optional internship, consultancy, collaboration Live industry projects	Compulsory work placement semester- 6months	Compulsory 4-6week internship	Live industry projects; many students have little industry experience	Some internships and seminars offered by alumni. Internship is not compulsory	Short internships, field trips, seminars
Formal linkage: industry and academia	Graduate fashion week, internships, talks, seminars, crits, industry sponsored projects and competitions, sandwich courses	Strong linkages with industry	Some formal collaborations with industry; competitions, exhibition Collaboration with international institutions and universities	Not very well defined	Not formal or documented and mostly relies on alumni linkages	Not very well defined

Assessment methods	Portfolio presentation, written reports, Live or simulated industrial projects, Written assignments, Presentations to specialist audiences, 3D outcomes. Prototypes Assessment is carried out at the various stages with increased parameters	Project based Thesis	Examination Projects Thesis	Examination Projects Research paper	Not clear	Projects Examinations Thesis
Collaboration/ Multidi-sciplinarity	Collaborations between specialisations are evident; cross-disciplinary research is also present	Interdisciplinary projects are present	No evidence	No evidence	No evidence	No evidence
Faculty	More expert part timers, few academics and professors; majority of faculty have experience in practise.	Experts and Academics, most with industry experience	Few professional staff qualified in Fashion and Textiles; institutions tend to absorb their own	Mainly researchers and technicians	Not specialised in the area of fashion and textiles	More academics, fewer practitioners
Course emphasis (Artistic, creative, commercial, R&D)	Innovation and market-oriented practical skills. Originality and conceptual fashion	Creativity, Individuality, Technology, Self-drive; history and social cultural studies; process	Design, Production Research Experimenta-tion	Technical, Manufacturing and production,	Textiles, technology, design, fashion	Production and business skills
Main skills	Creativity, Innovation, Research, Manufacturing, Sustainability	Technology, Fine Art Problem-solving Decision-making Practical skills	Technical, materials & techniques, legislation and standards Business skills	Manufacturing, Design	Theory Production Textiles Business skills	Production, Design business skills, research, history, social cultural studies

Research	Encourages research in a wide variety of fashion-based topics	Strong linkages with research institutions; emphasis on interdisciplinary research	Strong culture of research; affiliation with international academic institutions	Strong focus on research/ research outputs	Encouraged	Strongly encourages
Teaching/ learning methods	Lectures, seminars, crits, group presentation, studio, visiting speakers, experimentation, demonstration, field trips, self-directed study, research	Interdisciplinary, experimental projects with no predefined design language Scientific and technical			Not clear	Lectures, fieldtrips, research, visiting speakers, studiowork
Course is generalized or specialized	Multiple specialisations and sub specialisations	Specialised content in wide area of study, few options of degree programs	Less specialisation, but many fashion related subjects	Few electives	Not specialised on fashion or textile, mixed degree; few electives	Few electives, not highly specialised
Human centered design		Focus on impact of design on humanity and environment	Implied	Implied	No Evidence	No evidence
Multiple routes to learning	Yes	No evidence	No evidence		No evidence	no