A review on the prerequisites of Evidence-Based Curriculum as a driver to skills development of the leather value chain in Africa

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Abstract
The review study closely introspects’ on the prerequisites of evidence-based curriculum within the realms of specialized skills development agenda as pursued through higher education Institutions in Africa. Explicitly, the constraining factors that bedevil the leather sector are identifiable when appropriate research designs tools are applied. As such, in the process of identifying the constraints, renascence themes could, therefore, be beneficial in collecting evidence in support of developing curriculum. Such a developed curriculum stands higher chances of acceptability and aptly mitigates against challenges related to specialized skills development. The review succinctly indicates that in the process of identifying the themes, the scope of collecting evidence becomes attainable, thus, improving curricula that entails a participatory and transformative orientation. Indeed, during the review phase of the study, three main perspectives are depicted to be consequential in attaining a comprehensive, evidence-based curriculum, such as; action research, backward curriculum design perspective and theoretical perspective. Therefore, about this perspective, a reflection based on personal experiences and related to new knowledge with what they already know leads to constructivism. The relevancy of a constructivist strategy is observed to facilitate the observatory and evaluative stance during the development of evidence-based curriculum. Moreover, in consolidating and sustaining the benefit of such a developed curriculum, threshold concept was found during the review that it complements the process and strengthens the collecting evidence for curriculum development. Accordingly, therefore, the result of the review study indicate that Africa would position itself for initiating transformational changes in aspects of specialized higher education, fruition towards socio-economic benefits (e.g. employment, wealth creation and technology transfer), reversal of urban-rural or inter/intra continental migration flurry.

Key words: Constructivism, Curriculum, Knowledge, Leather, Methodological approach, Threshold concept, Specialised skills
1.0 Introduction

The focus of this paper is related to the emerging perspectives and associated deficiencies in a curriculum that is participatory and supported by evidence. It is in this view that aspects related to organizational problems related to training and skills development at Africa Leather and Leather Products Institute (ALLPI) take centre stage. As such, to further consolidate the understanding of how ALLPI is managing the dilemma of applying its curriculum and harmonizing other curricula in the region various mechanisms are approached. These include interactions at the ‘triple helix platform’ that involves the academia, public and private sector players in the regional leather value chain. The span of comprehension to the paper’s mandate also includes close reflection from the regular discussions held with peers at regional and global platforms engaged with evolving knowledge and skills development for the leather sector.

During the review process, an attempt was undertaken to identify knowledge evolving assumptions and evaluating the problems identified. The exercise indicated that this was critical as demonstrated through the three different perspectives mentioned in para 2.0 below. Thus, by delving deeper, the paper handled each approach independently to implore on validity and purpose, to assist in providing a much-practicalized orientation in addressing the identified problem. Thus, to build on the content of the discussion, the study intend’s to identify the factors that preamble the problem including thematic issues that arise. Indeed, this would require providing an insight, elucidate on outcomes and demonstrate how to undertake the methodological approach of the identified problem through the three perspectives. Subsequently, an attempt to re-evaluate the perspectives, collect evidence and align these in the light of how these influence the leather value chains in Africa. The review aims to ascertain if the adaption of this approach ensures attainment of the outcomes that are appropriate in the realm of decision-making mechanism, inclusivity and evolving of specialized knowledge at ALLPI.

1.1. Identification of the Problem

i. The problem: Lack of evidence-based curriculum for higher education in support of advanced skills development for Africa’s leather sector.

ii. The preamble to the Problem: To attain the organization’s mandate in transforming the leather sector in the region and to avail advanced skilled and specialized workforce through a harmonized higher education initiative in all its member states in Africa. Moreover, complexities related to the engagement of gender and youth in creating and participating in the leather value chain is fundamental in improving inclusivity and comprehension of the sectoral dynamics.

iii. Envisaged Impact: It is anticipated that after successful completion of the envisaged study review, mitigating the identified problem would influence positive outcomes to attain value creation, potentiate innovation and transforming the region from commodity dependence to product development. Therefore, the envisaged tangibles in the long-term could lead to skilled youth, enhanced rural development and creation of accruable socio-economic indicators through adapting the higher education initiatives directed to Africa’s leather sector.

iv. Objective: To implore on the best practice in addressing the problem and attaining the envisaged impact mentioned above. Thereafter, focus on the panacea that would enhance innovation and professionalism through knowledge evolution and adding value along the value chain of the sector.

iv. Evolved Thematic Research issues: The discussion would evolve by intertwining the questions identified in Annex 1. Out of this, the emergent discussion therein will identify assumptions, providing validity and provide tangible outcomes that will ensure in mitigating on the
identified problem related to the lack of evidence-based curriculum for Africa’s leather sector pursued through identified thematic issues linked to the evolved research questions (Annex 1).

The following - Four summarized thematic issues based on the problem identified are a reflection of the questions that emerged (Annex1). The themes are also related to Evidence-Based Curriculum, with the key issues integral to the preamble and impacts of as follows:

a. Learning Experiences
b. Knowledge evolution
c. Participatory and Assessment Approach
d. Methodological Approach

**a. Learning Experiences**

Experience related to learning is critical in providing insights into curriculum development and related policies. Aspects, such as assimilation and academic achievement in meeting the societal expectation is fundamental during the curriculum development (Hansen, 2000). Thus, learning influences knowledge, skills, experience and professional capacity related to successful evidence-based approaches (Bruniges, 2005).

Therefore, there is a need to ensure attainment of a more evidence-based curriculum for the leather sector. As such, tangible results from learning experiences along its respective value chain could potentially influence the quality of education pursued during the process of curriculum development. Subsequently, such a process leads to an effective and efficient educational system based on evidence based on learning experiences (Lewis and Caldwell, 2005). At ALLPI, as specialized skills developing organization focusing on the development of the leather value chain in Africa, the prospect of adopting an evidence-based curriculum while harmonizing other curricula framework in related institution is highly opportune. The current momentum of attaining this goal is working progress with ALLPI currently consolidating with other leather-based institutions in evolving curricula that are evidence-based. Indeed, the success of participation, ownership and engagement indicate that there is a need to train and impart specialized skills in creating value along the leather production chain. The anticipation on encompassing evidence-based curriculum for the leather sector is to obtain results that bear tangible outcomes. For example, attained outcomes would improve Africa’s socio-economic indicators that emanate from the leather sector through an evidence-based curriculum which is requisite to development and growth (Mwinyihija, 2017).

**b. Participatory and Assessment**

Assessing the participatory approach provided a strong perspective as regards evidence-based curriculum development. Glickman et al., (2013) supports and strongly emphasize the importance of a participatory process that is key in evolving appropriate evidence-based curricula. Therefore, at ALLPI it became apparent that incorporating a participatory process in creating an ambient learning and teaching environment is pertinent. One way was taking cognizance of relevant Higher Education policies associated with specialized skills development and impactful to the organization. Indeed, already as an organization, an integral factor to apply participatory approach is adopted to entail all the operations in a model referred to as ‘triple helix’ where academia, public and private sector players or stakeholders are engaged (Mwinyihija, 2014; 2018). Therefore, if the participatory process is successful, it is easier to mitigate the problem identified in para 1.1 above.

However, the participatory and assessment process to be successful, there is need during the curriculum...
development and implementation phase to inculcate an effective and inclusive approach. Therefore, according to Alsubaie (2016) the appropriate approach in attaining the mentioned success, is to pursue, through stakeholder engagement perspectives that exhibits a philosophical orientation whilst remaining purposeful and encompasses learned experience from other paradigms. As such, this is envisaged to provide the fundamentals that ALLPI as a specialized and knowledge-based organization could potentially strive to acquire important guidance towards evolving knowledge for its use and also harmonize for other related institutions the prospect of evidence-based curricula.

c. Methodological Approach

In attaining high-quality Evidence-based curriculum that encompasses a participatory approach, the use of two validated questionnaires successfully applied by Reid et al., (2017), formed the basis of the review. This entail

i.) A scale measuring Belief related to Evidence-based Practice.

ii.) A scale to assess implementation of Evidence-based practice.

Thus, the questionnaire directly evaluates the metrics mentioned in (i) and (ii) to provide critical outcomes related to the evolution of knowledge and applicability of obtained evidence in developing curriculum for Africa’s leather sector as a basis of best practice.

The method of choice and approach entails a quantitative pre and post-test design involving a purposeful approach. The approach is determined with the unique character of each stratum, influenced with specific interests along the leather value chain (e.g., producers, tanneries, leather goods and garments) stakeholders involved, as also applied in other sectors by Reid et al., (2017). However, to complement the choice of this approach, it is prudent to encompass three methodological perspectives to attain an appropriate evidence-based curriculum identified in para 2.0 below.

2.0 Investigating the problem through 3 identified methodological perspectives

At ALLPI the aim is to pursue and achieve a well-designed evidence-based curriculum that is ideal for the leather sector. As such, this requires goodwill from most of the member States or its mandated agencies and a declaration that the leather sector is a focal priority agenda for socio-economic development. Fortunately, in some member States, this aspect is at various stages of implementation as cited by Mwinyihija (2017). Indeed, the importance of the process at the continental level is currently involving the Africa commodity strategy under the auspicious of the Africa union transformational agenda 2063. At the continental level, the contribution of the highly regarded leather sector, and efforts to mainstream this initiative are already work-in-progress. Thus, ALLPI’s transformational momentum at national and continental level requires to pursue a defined approach that will be fundamental in attaining the agreed set targets. Primarily, therefore, it will be mundane to pursue an interventional strategy that supports the process by engaging the youth and encompass gender parity into the framework.

The importance of providing more focus on the interventional strategy arises from the current lack of evidence-based curriculum, yet, for the leather sector in the region training is directed towards specialized skills development pursued by ALLPI. However, the current approach is deficient and centred on a demand-driven training unsupported with evidence in its applied curriculum. The ramifications of this approach, is a lack of ownership and acceptability among the stakeholder making it harder to steer the sector from commodity dependence to product development. Worthy of note is the fact that if the exercise is conducted without a participatory process, all efforts by the respective regional governments in providing goodwill could be in vain. Indeed, under normal circumstances, the evidence-based curriculum is developed with an intent that the design frame avails; the universality of
discourse, enhanced comprehension, and agility directed towards appropriate incorporation of stakeholders thought process, ultimate societal growth and development.

Therefore, as a follow-up to this review, three methodological perspectives are identified in attaining an inclusive and tangible evidence curriculum to mitigate the problems and preambles mentioned in para 1.1, as follows:

i. Action research perspective
ii. Backward curriculum design perspective
iii. Theoretical perspective

i. Action research methodological perspective

This perspective is supported with a theoretical approach related to action research initiated through sociological psychology study spearheaded by Kurt Lewin (Haggbloom et al., 2002). The fundamental of the associated research to this review includes an integrated approach or process to plan, act, observe and reflect. The reason for adopting this perspective is to facilitate understanding the limiting factors to evolve knowledge and mitigate on challenges related to the leather sector. As such, the basis of preference towards action research is to encourage and allow a thoughtful insight that would assist to identify practice problems drawn from the individuals or organization. Indeed, Kemmis and McTaggert (2005) suggest that the process that integrates action research has to be participatory and create awareness in order to spur the desired change. In a related study later, Kemmis (2009) managed to mainstream this perspective into the critical educational domain. Thus, the aspect of a participatory approach augurs well as indicated in para (1.1c) to analyze the leather value chain through variously associated strataums by applying the principles outlined under the Participatory Action Research (PAR).

The principles of PAR could assist in focusing on the leather stakeholders as a community and further demonstrates how a participative action-oriented methodological approach could be preferable. As such, if PAR is pursued, the intended study covering the leather value chain has to adapt an inquiry approach that is collective, based on grounded experiment, experience and encompass a societal, historical perspective linked to the leather sector’s skills development. The main assumption at this stage is that while applying PAR it is possible to achieve pieces of evidence in support of curricula development, a position strongly supported also by Bergold and Thomas (2012).

Therefore, to avail a curriculum both at undergraduate and postgraduate level, the action research is anticipated to be the foundational basis of developing a leather-based module focused on the application of technology and entrepreneurship to be conducted at ALLPI as a relevant institution. The overview is to impart relevant skills and evolve competencies through knowledge evolution and learning. It is with this approach that the following steps indicated hereafter, could culminate to evidence-based curriculum, considered as an important driver in the transformation of the leather sector. Therefore, applying action research to leather sector curriculum development based on evidence would require the following:

- Reading to comprehend the relevant material relevant to action research related to the leather sector as the intended area of focus.
- Inculcate an implemental plan of all designated activities to ensure the adoption of participatory action research.
- Actioning the research findings.
- Routinely presenting a progressive report.
- Systematic reflectivity and reviewing of the processes and outcomes of the research.

ii. Backward design methodological perspective
The backward design methodological perspective facilitates designing an educational curriculum through set goals and objectives before the moderation of instructions and assessing tools. Thus, this methodological perspective is also referred to as backward planning or backward mapping. Instrumental to this approach is the use or process by which Educational practitioners encompass the perspective. The most appropriate way of attaining such perspectives is through acquired experiences and learned techniques on designs that lead to attaining learning goals that are specific. For example, at ALLPI, the need for specialized skills required for the transformational process targeted for the leather sector. A classical reference by Ralph Tyler (1949), indicate that effective curricula design begins from the anticipated outcomes through targeted goals and objectives by an organisation as reported by Wiggling and Tighe (1998). According to the same author, the essence of adapting to this perspective is that an appropriately developed curriculum leads to enhanced performance in learning, and relates equally to the improved performance of students. Indeed, according to Richards (2013), the present Common European Framework of Reference is another excellent example of an applied methodological perspective related to the application of backward design.

The idealness of the Backward design of curriculum for the problems of skills development in the leather sector, therefore, encompasses three main phases: identification of outcomes that are anticipated; implored on evidence that is tangible and acceptable; and, inclined towards strategized planning based on a vast array of experiences and instructions related to learning. Thus, Backward Design viewed in the perspective of developing an evidence-based curriculum for the leather sector could potentially be considered as an all-inclusive process. This is important, for the reason that the instructional material design has to involve the faculty or teaching staff charged with designing such material. The ultimate objective, therefore, would be to focus on the anticipated outcomes of; the type of module, degree and, the expectation of the leather transformational programme desired. The accomplishment of this task, was planned not to begin with, support documents but start the task, by imploring on the student's comprehension and expectation after completing the curriculum requirements. As a result of this process, the various categorization of the pieces of evidence would be attained and potentially shape the expected outcome. Worthy of note is the fact that this methodological perspective, therefore, pursues a “backwards" approach scrutinizing the objectives from the endpoint rather than the beginning. The effect of this results in developing our curriculum by imploring and exploring on learned experiences attaining the anticipated outcome to provide the evidence so much sought. Thus, the basis of adopting a backward design methodology enhances the capacity of ALLPI to build interventional strategies through diagnosis of the leather value chain from the outcomes currently experienced in Africa.

iii. Theoretical and methodological perspective

According to the study by Taber (2014), theoretical perspective could assist in encompassing or developing specific methodological orientation. For example, one could relate to phenomenology which is easily relatable to be either a perspective or methodology. However, to focus to the focal area of interest, dealing with skills development in the Africa leather sector, an inclination is taken during this review, towards constructivism and threshold theoretical orientation. Thus, as preferable theoretical orientation, methodological perspective, the theories assist in consolidating developing evidence-based curriculum, mitigate against the problems associated with teaching and learning experienced or envisaged for the leather sector.

a. Constructivism as a theory of learning

In essence, this theory was deemed relevant to
evidence-based curriculum initiative and the intent to pursue constructivism is closely associated with its observatory and evaluative inclination to learning. The theory, therefore, is considered to be scientific particularly when people’s perceptiveness and learning aspects are measured. The importance of the theoretical orientation is attributed to Bruner (1990) and Piaget (1987) in aspects of a constructivist cognitive development. Furthermore, Vygotsky (1978) who focused on constructivist perspectives with a sociological leaning, could provide the basis of evolving an appropriate curriculum based on learning evidence for higher education in Africa’s leather sector. In the process, the theories would potentially consolidate, in particular, the theoretical, methodological perspective in light of constructivist learning theory. Therefore, the approach to this perspective is deemed to be insightful, comprehensive with the potential of evolving knowledgeability at ALLPI as a specialized institution, through acquired experience and reflection. Board (2013) validates this assumption by indicating that it provides an ontological orientation based on the type of knowledgeability acquired to facilitate vital specialized skills for the leather value chain in Africa.

b. Threshold concept

The theoretical threshold concept by Jan Meyer and Ray Land is positively related to ALLPI’s initiatives and mandate under the domain of higher education in mitigating against the problems of pursuing specialized skilled workforce (Meyer, Land, & Baillie, 2010). Thus, the importance of the threshold concept is based on the assumption that its application facilitates to identify core conceptual aspects relevant to the leather sector. Indeed, this is also crucial for Africa’s leather sector, as the concept provides how the general application potentially would assist in comprehending the envisaged changes or transformative perceptions required for skills development. As indicated earlier by Meyer and Land, (2003), the authors demonstrate the importance of nurturing positive perceptiveness as a key ingredient of developing curriculum through a participatory approach. At ALLPI, the initiative validates its decision making through engaging core stakeholders of the leather sector who potentially, through personal and other collective based threshold concepts support the transformative agenda of the Institution. During the process of transformation, it is envisaged that all involved stakeholders would comprehend, assist with the transformational perception towards the ideals and target set for ALLPI in becoming a Centre of Excellence in creating knowledge in the leather sector.

Constructivism and threshold concepts related to leather-based curriculum development

Evidence-based curriculum development initiative requires the comprehension of the two theories equally and closely associated with perception. Therefore, the understanding of the theoretic proposal mentioned is essential in developing the curriculum. Such a curriculum serve the basis of a strong basis to understand and enhance knowledgeability especially for ALLPI in its role of developing a highly skilled workforce. First, this is already working progress and on reflection depicts that learning and teaching environment nurtures attaining positive perception and acquisition of knowledge. Second, the leather sector deems the transformational process for the leather sector supported through the adaption of constructivism as an ideal theoretical perspective. The reason for this assumption is based on the fact that the conceptual process is considered inherently relational to dynamism. On the other hand, the threshold concept eventually would lead to perceptiveness that is also transformational.

Indeed, the two theories could assess the strategies related to learning outcomes and teaching, making it easier to overcome the emergent barriers impacting on the stakeholders’ progress (Cousin, 2006). Comparatively, in some studies, threshold concepts
are shown to represent experiential entities in the minds of those who are learning and constructively align with the process. The main observation depicts what justifies the use of methodological perspective theories, in resolving the problems associated with evidence-based curriculum development. Also, the threshold concept, when aligned with constructivism, is found to provide a micro-perspective for examining the learning environments associated with the leather sector. Moreover, the conceptual approach previewed in the realms of higher education is considered relevant to build the requisite skills and provide the momentum in Africa’s transformational agenda.

Conclusion

The review paper identified the problems related to the lack of evidence-based curricula as a higher education concern. The specificity of the approaches discussed is directed to the leather sector benefits and as a response to questions identified in Annex 1. In retrospect, by having an African leather-based curriculum developed from the bases of collecting evidence and applying a participatory approach, where some bedevilling factors identified. The aim of such an endeavour directed toward building skills in its workforce, spur innovation and address key socio-economic indicators related to employment and wealth creation. Indeed, the factors will be associated with knowledge evolution if carried out in a well-designed curriculum framework. In the process of the review study, various references cited herein support how developing evidence-based curriculum is achievable. Such a curriculum is found to be important in adapting to proper methodological perspectives that take cognizance of the critical issues considered integral and supportive of curriculum development. In the process, constructivism and threshold theoretical approaches were found ideal to integrate the main thematic issues to the development of the curricula. The relationship of these theoretical orientation drawn from the learning experiences, knowledge evolution, participatory and assessment approach, and methodological perspectives that provides the impetus of this review. However, the dilemma that may require further scholarly investigation is the need to ascertain, if by evolving the evidence related to curriculum development, adequately supports the availability of adequate professional capacity to drive the leather sector towards reversing the challenges identified. In conclusion, policies to support the development and implementing evidence-based curriculum are fundamental in strengthening learning and teaching environments that potentially avail specialized skills for the leather. Eventually, this achievement is anticipated to assist on the continent’s agenda 2063 of AUC (African Union Commission), towards its transformational set goals.

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References


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Appendix 1 – List of evolved research questions.

I. What methods exist of assessing curriculum, what are their benefits and drawbacks, and what lessons be drawn from this for the leather industry?

II. How can the relative benefits of different methods of curriculum development be assessed?

III. What evidence exists regarding the benefits and drawbacks of involving faculty in curriculum development? What are the implications of this for developing curriculum in the leather industry?

IV. What evidence exists regarding the benefits and drawbacks of developing curriculum at the local level rather than relying on pre-published curriculum? What are the implications of this for developing curriculum in the leather industry?

V. What are the views of faculty and stakeholders on the current curriculum in the leather industry?

VI. How can an evidence-based curriculum for the leather industry in selected African institutions of higher learning best be developed?