

Interrogating the Major Agents of Curriculum Innovation in Technical Education, Vocational and Entrepreneurship Training: Insights from Busuma Technical Vocational College in Zambia

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Abstract: The Technical Education, Vocational and Entrepreneurship Training (TEVET) have experienced curriculum innovations in the past 10 years. This paper examined the major agents of curriculum innovation at Busuma Technical Vocational College (Busuma TVC) in Zambia. The qualitative research design was utilized in this study and the data collection tools were the questionnaires, interview guides and focus group discussion guides. The findings revealed that the technology demands, social and economical changes and learning organisations were some of the major agents of curriculum innovation at Busuma TVC. The study recommended that the institution should enhance its relationship and collaboration with the industry and other stakeholders or agents if curriculum innovation is to be effectively implemented at the institution and equip trainees with relevant knowledge and skills for success in the ever-dynamic 21st century world in order for them to contribute to national development of Zambia. Therefore, the research results provide crucial information for educational planners, curriculum developers, policymakers at the Ministry of Education, Ministry of Technology and Science, as well as key stakeholders such as the Technical Education Vocational Entrepreneurship Training Authority (TEVETA) and Technical and Vocational Education Training (TVET) institutions, enabling them to make informed decisions and improvements in the field of education and vocational training.

1. BACKGROUND

The Government of the Republic of Zambia embarked on major reforms to review the TEVET system in order to make it more responsive to the current training demands in the economy. In August 1994, the Minister of Science, Technology and Vocational Training appointed a widely representative national Task Force to review Government policy on Technical Education and Vocational Training and to recommend changes that would be necessary for the training system to meet new and emerging challenges in the national economy and society in general. It is widely held that, until then, no serious attempts had been made to undertake such an exercise since the existing policies were formulated in 1968. In the meantime, the defining characteristics of the national economy and demographic patterns had both changed very significantly from the conditions under which the previous policies had been formulated. In spite of some attempts by the Department of Technical Education and Vocational Training (DTEVT) to respond to the changing environment, the underlying policies and structures of the training system were clearly out of step with the dynamic demands and requirements of the country (Nkanza, 2003).

TEVT institutions in Zambia are considered part of the higher education system. In the Zambian context, higher education is defined as post secondary education. Zambia embarked on a Vocational Education and Training (VET) reform process in 1994 with a view to aligning skills development to the nation's socio-economic skills needs. It was this policy review process that resulted in the TEVET from TEVT initially obtainable under the Department of Technical Education and Vocational Training (DTEVT). So, the reviewed policy embraced entrepreneurship in addition to Technical and Vocational Education and Training (TVET) and led to the formulation of the TEVET policy of 1996 enacted by parliament by Act No.13 of 1998 and amended by Act no. 11 of 2005 (FNDP 2006 - 2010). Therefore, this act gave birth to the establishment of an agency called Technical Education Vocational Entrepreneurship Training Authority (TEVETA) that was established in 1998 with its office situated in Lusaka. The main aim of TEVETA is to foster and enhance better management of higher education institutions in the TEVET sector where Busuma TVC belongs and TEVETA operates as a quality assurance agency (TEVETA, 2010).

2. THEORETICAL FRAMEWORK

This research is grounded in the organizational-oriented innovation process model, which outlines the stages of curriculum innovation. The process begins with the initiation stage, where organizational needs are identified, conceptualized, and planned. This stage consists of two key activities: Firstly, the agenda setting: Identifying organizational problems and defining the need for innovation through top management brainstorming and review. Secondly, matching: Aligning the organization's agenda with suitable innovations, planning, and designing their implementation (Supriani et al., 2022). Therefore, the study was guided by this theoretical framework to examine the major agents of curriculum innovations at Busuma VTC.

3. RELATED LITERATURE

3.1. Guidelines for Successful Curriculum Innovation in Higher Education Institution

Daramola (2008) reveal in his study that if a successful curriculum innovation has to be undertaken in an institution such as Busuma TVC then the following must be focused:

Firstly, trainer preparation is necessary and adequate materials must be made available. Trainers must be teachable and ready to embrace new skills, focus and competencies that will make them relevant. Secondly, the objectives of innovation must be clear so as not to bring about complications. In addition, Daramola noted that for the achievement of excellence, there is need for encouragement, motivation that will assist those involved to be committed. It is in this light, it is safe to argue that trainers at Busuma TVC needs to be encouraged and motivated to grant success of curriculum innovation at the institution.

The other aspect according to Daramola (2008), the managers of the higher education institution such as Busuma TVC that may include The Vice-Chancellors of University, Principals or Provost of Colleges of Education, and Rectors of Polytechnics, responsible ministry for instance in the context of this study the Ministry of Technology and Science must support the innovation. Further, every other person connected with moves on innovation must be well groomed and carried along with clear understanding. They should be made to see the innovation as helping to improve teaching and learning. Different individuals with different personal priorities and opinions have to be brought together with encouragement so as to embrace quality undergraduate education.

Apart from the mentioned guidelines, Ken (2007) contributes to this discussion by indicating that attention should also be given to teaching methods because trainers will implement the curriculum that has been designed. Whenever the curriculum is changed, the stakeholders should be invited for a forum. The essence is to familiarize them with methods of teaching the new curriculum, its demands and content. Managing curriculum change requires skilled leadership. As a result of this, all those that will take up leadership role in the quest for change must be accommodating, understanding and full of leadership qualities that will make the change notable. Change always involves human and emotional factors. Those involved in the change must be competent, skillful and committed. Therefore, Ken's observation is cardinal to stakeholders, trainers and leadership at Busuma TVC if curriculum innovation is to be credited as a success.

They should not be discouraged even when faced with challenges in the process. Serious gaps in various courses may call for series of changes to enable them play their expected role in this time of competitive economy. For example in some countries, there are innovative changes in many engineering programmes under the strong influence of Engineering Education Programme Coalition (Aisiku, 2002).

3.2. Processes and Procedures in Managing Curriculum Change and Innovation

According to Law (2022) curriculum change entails the introduction of new learning and training guidelines revealing that involved stakeholders must establish sound policies and procedures for managing all emergent issues. In a study that was conducted by Law (2022) the following models are vital in ensuring that curriculum change positively benefits all parties involved;

3.2.1. Overcoming Resistance to Change (ORC) Model

The model stipulates that the success of a curriculum depends on the impact a developer makes on other users such as trainees, trainers, and society as a whole. The change process involves several

parties that desire to ensure that the desired results will positively promote individual and social growth. Consequently, developers must ensure that the changes address individuals' misgivings, misapprehensions, and other related factors. The parties involved must be adequately informed of the issues being addressed by the changes, beliefs, values, and assumptions (Mahmood, 2018). The move is vital in ensuring that the implementers understand the goals of the new curriculum and plan for the effective achievement of the desired results. The other issue entails the coordination of implementers to ensure that they do not revolt against the new changes. People within the system should be motivated rather than ordered to avoid instances where they fail to implement ways of achieving the long-term goals of the curriculum. Consequently, developers should identify and deal with employees' concerns in various departments when implementing Curriculum. The concerns can be categorized into four developmental stages name: unrelated concerns, personal concerns, task related concerns and impact related concerns (Law, 2022).

3.2.2. Leadership Obstacle Course (LOC) Model

Curriculum changes usually face resistance challenges from critical stakeholders such as trainers and trainees at Busuma VTC. The model stipulates that staff resistance is a crucial obstacle to achieving the set goals and proposes collecting data from stakeholders to determine the nature and extent of resistance in implementing a curriculum. The move will be vital in assessing a curriculum's success rate and implementing measures that lead to heightened acceptability (Tran, Hallinger & Truong, 2017). The assessment of the resistance rate can be carried through the following as noted by Law (2022);

- All members involved in implementing the curriculum must clearly understand the proposed innovation.
- Individuals in the organization for instance at Busuma VTC must be given the necessary skills to possess capabilities instrumental for carrying out the innovation.
- Additionally, the necessary equipment and materials for the program must be well furnished.
- Where necessary, the developers may modify the existing organizational structure to make it compatible with the suggested innovation.
- The participants must be motivated to spend the required time and effort in making the innovation successful.

3.2.3. Rand Change Agent (RCA) Model

The model stipulates that organizational dynamics are the barriers to effective curriculum changes. The model also advocates for three stages of change: initiation, implementation, and incorporation. The initiation stage entails developers working together to secure support for the anticipated changes. The attainment of full support towards a new program calls for a critical understanding of the legitimacy of the changes. Therefore, curriculum changes require personal support from all involved parties. For instance, trainers may be informed of the desired changes and a guide to effect new programs. The implementation stage entails actualizing the desired changes (Teressa & Besha, 2020). At this stage, developers introduce new programs and adjust organizational structures to make the changes effective. The incorporation stage entails the proposed changes becoming part of the established guidelines. The success of curriculum implementation is a function of organizational structure, the readiness of local societies, abilities and skills of administrative and academic staff, and the characteristics of the desired change. The implementation phase is also characterized by financial and personnel support to hasten success (Law, 2022).

3.2.4. Learner- Centered Curriculum Design

The achievement of high success rates after implementing a curriculum requires a critical understanding of each trainee's needs, goals, and interests. The curriculum empowers trainees and allows them to shape their learning through choices. Trainees should be allowed to choose desired activities and learning experiences. The move to let individuals select areas of interest leads to lower resistance rates making the incorporation process effective. Institutional leaders need to motivate trainees and trainers to ensure that they support the changes at all times (Mahatma Gandhi National Council of Rural Education, 2020).

3.3. Models of Curriculum Innovation

There are various models of curriculum innovation that have been proposed by various education scholars. In this study, understanding the models of curriculum innovation in the context of TEVET in Zambia was highly informative to this study. Button (2021) noted some of the following in his study.

3.3.1. The Research, Development and Diffusion Model (RD & D)

In this model, an idea or practice is conceived at the central planning unit and then fed into the system. RD & D is effective where curriculum development is done on a large scale and ideas have to reach wide geographical areas and isolated users. It is a highly organized, rational approach to innovation. Following is a logical sequence of activities in using the RD & D model:

- basic research by a central project team which develops a new curriculum devises and designs prototyped materials,
- field trials of the prototyped materials and redesign them where necessary,
- mass production of the modified prototyped materials,
- mass dissemination or diffusion of the innovation through courses, conferences, and workshops, and
- implementation of the innovation by the users (these can be the TEVET institutions, trainers and trainees).

The Research, Development and Diffusion Model can be summarized as shown below:

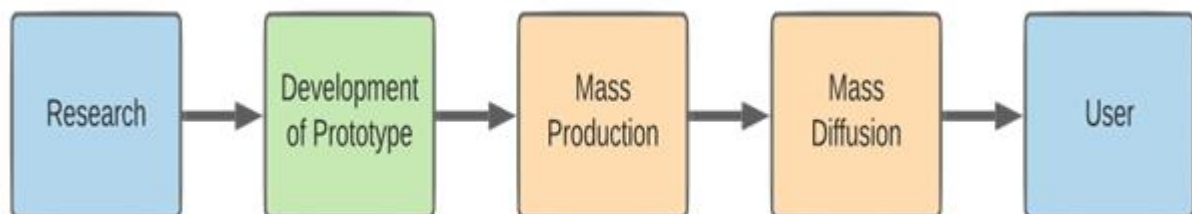


Figure 1. RD & D Model (Button, 2021)

3.3.2. Problem Solving (PS) Model

The PS model is based on the assumption that innovation is part of a problem solving process. Below are the characteristics of the Problem Solving Model.

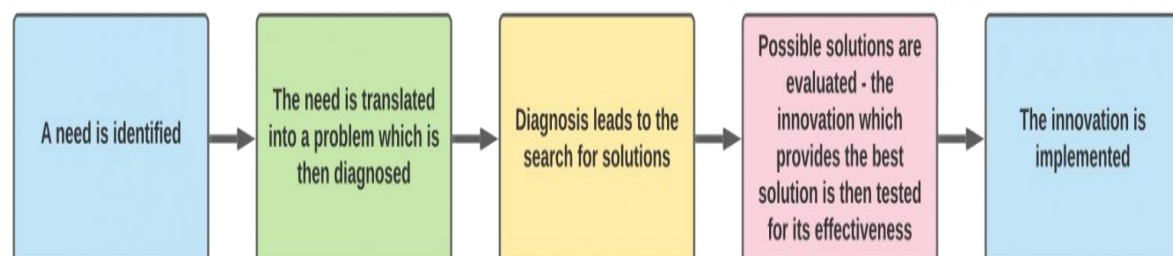


Figure 2. PS Model (Button, 2021)

The PS model is referred to as a “periphery-center” approach to innovation. The trainers and TEVET institutions in this context of the study, which is Busuma VTC, based on their needs initiate the innovations, generated, and applied. Such innovations have strong user commitment and the best chance for long-term survival.

In this model, the receiver is actively involved in finding an innovation to solve his or her own unique problem. The model is flexible enough to encompass all types of innovations, including materials, methods, and groupings of trainees. Thus, the PS model is local in nature for instance taking place at Busuma VTC, usually limited in size, and may not be of high quality compared with more centralized approaches to curriculum development.

3.3.3. Social Interaction (SI) Model

The model grew out of the progressive education movement in the 1930s when it split into two camps: one that focused on the individual trainee as a learner and the other on society as an education laboratory. This view sees trainees as capable of reforming society with support from leadership to provide a curriculum that may become a classroom without walls and a community where trainees and trainers can ultimately change the world.

This model operates through social interaction and emphasizes communication. It stresses the importance of interpersonal networks of information, opinion of leadership, personal contacts, and social integration. The model also has its roots in the notion of democratic communities of helping trainees to be as well as to become. The SI model also stresses the relationship of the individual to other people and society, and the instructional methods used by trainers in the classroom to facilitate group work. The model is trainee-centered, and trainees are encouraged to interact with each other in a structured setting. When implementing this strategy, trainees often serve as facilitators of content and help their peers construct meaning. The trainees are to question, reflect, reconsider, seek help and support, and participate in-group discussions. It is therefore safe to argue that this model resonates very well with the curriculum change and innovations in the TEVET sector in the 21st century. The three most common strategies include group projects, group discussions, and cooperative learning. The steps of instruction using Social Interaction model often vary, but they have these steps:

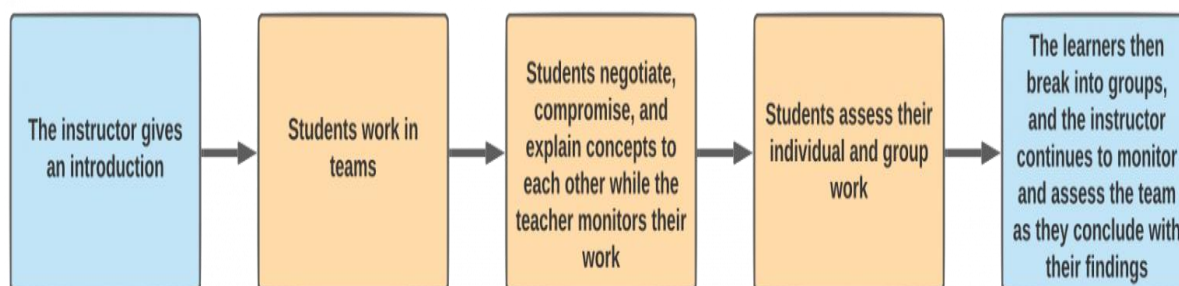


Figure 3. *SI Model (Button, 2021)*

3.4. Drivers of Curriculum Innovation

The study that was conducted by Vincent-Lancrin et al. (2019) reveals the following as key drivers of curriculum innovation:

3.4.1 Human Resources

Human resources were identified as key driver of curriculum innovation. It was noted that the skills for and openness to innovation of actors within the education sector, notably trainers and faculty, are key aspects of a good innovation ecosystem.

3.4.2. Learning Organisation

The second key driver that was noted in the study was learning organisations. Innovation and improvement are strongly related to how work is organised and whether education establishments and professionals are able to both absorb and generate improved knowledge and practice.

3.4.3. Technology

The other key driver for curriculum innovation that the study revealed was technology. The application of general-purpose technologies to the education sector, and notably of digital technologies, is a key promise for innovation and improvement. In particular, the development and use of longitudinal information systems (and their “big data”) holds key promises for innovating the education sector.

3.4.4. Regulations and System Organisation

Regulation and system organisation is another key driver for curriculum innovation that was revealed in the study. The study argued that innovation and improvement only thrives where good ideas can be implemented and are not hidden by too risk-averse regulations on curriculum, assessment, etc. It also

depends on the entrepreneurialism of the actors, on incentives, and on the availability of funds for educational innovation.

3.4.5. Education Development

The other key driver is educational development. The study revealed that as in other sectors, an education industry should develop innovative tools, organisations and processes to improve and change the practices in the education sector.

3.4.6. Social and Economic Change

Further, the study identified the social and economic change as one of key driver of curriculum innovation. This kind of change calls for new changes in the curriculum. The social change may be as a result of economic and demographic changes either positively or negatively.

3.4.6. Education Research

Education research is another key driver that was identified in the study. The investment in and use of research and evaluation are key elements in an educational innovation ecosystem.

4. METHODOLOGY

This study adopted a qualitative research approach to examine the major agents of curriculum innovation in TEVET in Zambia. Busuma TVC was identified where members of staff and trainees were purposively selected to participate in the study.

4.1. Data Collection

Data were collected through:

Semi-structured interviews: Members of staff were interviewed to understand curriculum innovation at Busuma TVC.

Focus group discussions: Trainees were involved in focus group discussions to gather insights on curriculum innovation at Busuma TVC.

Questionnaires: Trainers responded to questionnaires to provide insights on Curriculum innovation at Busuma TVC. The three approaches to data collection were meant to triangulate data in order to take care any biasness.

5. RESEARCH FINDINGS

The findings of the study revealed that there are various agents of curriculum innovation in TEVET. The table below shows the responses from the questionnaire by the 10 members of staff.

Table 1. *Major Agents of Curriculum Innovation*

Major agents	Frequency	Percentage
Human Resources	5	50
Learning organisation	8	80
Technology	5	50
Education research	4	40
Social economical changes	8	80
Other	1	10

Table 1: Field work (2023)

N = 10

The study shows that majority of the members of staff who participated in the study revealed that the social economical changes and learning organisations are the major agents of curriculum innovation. Further, the study also revealed that majority of the trainees indicated that social economical changes and technology are the major agents of curriculum innovation. In their view, what ever is taught in learning institutions should respond to the needs of society and community at large. One of the members of staff had the following to say regarding social economical changes:

“Curriculum review is a policy matter, and the responsibility lies with the Principal and the academic team. They must facilitate curriculum innovation periodically by discerning societal needs, especially those related to the labor market”.

It is also evident from the above table that technology and human resources with the 50 % respectively are also major agents of curriculum innovation. In confirming technology to be a major agent of curriculum innovation, one of the trainees had this to say:

“...we are currently living in the technological era hence technology can't be overlooked as an agent of curriculum innovation.”

In supporting technology demands as a major agent of curriculum innovation, one of the members of staff had this to lament:

“...Technology studies have been introduction in almost all programmes at this institution to address technological demands of our time which are fast changing.”

Table 1 also shows that 40% of the members of staff indicated that education research is also a major agent of curriculum innovation. 10% revealed that Commonwealth of Learning (COL) that empowers people through learning that's leads to economic growth, social inclusion and environmental conservation is also another agent of curriculum innovation at Busuma TVC.

6. DISCUSSION OF THE FINDINGS

Findings from table 1 reveal that eight (8) out of ten (10) representing 80 % of the member of staff who responded to the questionnaire indicated that the major agents of curriculum innovation at Busuma TVC were the social and economic changes and learning organisations. The study revealed that the social-economic changes has much influence on the curriculum if it has to be relevant to the needs of society and industry by producing graduates with relevant skills who can foster national development. In addition, the findings reveal that the curriculum should encompass or take into consideration the changes in the social economical changes in the communities, industry and nation. These findings are similar to the findings of the study that was conducted by Vincent-Lancrin et al. (2019) that some of the key drivers of curriculum innovation are social and economic changes and learning organisations.

Further, the other major agents of curriculum innovation as revealed in table 1 are technology and human resources each representing 50 % respectively. These findings can be linked to Vincent-Lancrin et al. (2019) who identified technology and human resources among many drivers of curriculum innovation. These findings by Vincent-Lancrin et al. can also be confirmed by the revelation of the study that curriculum review is a policy matter, and the responsibility lies with the Principal and the academic team.

Further, the study also revealed that education research is a major agent of curriculum innovation that is represented by 40 % as indicated in table 1. In this regard, the revelation of this study indicates a similar situation compared to Vincent-Lancrin et al. (2019) who noted that an investment in and use of education research are vital in educational innovation.

7. CONCLUSION

The findings of the study revealed that there are many agents of curriculum innovation. However, the agents were quantified to examine the major agents in the context of Busuma TVC, the results of the study indicated that the social economic changes and learning organisation are the main agents of curriculum innovation. Based on the findings and the discussions of the study, it can be safely be concluded that the social economic changes in the society triggers curriculum innovations that in turn leads to the empowerment of trainees with relevant knowledge and skills to address societal needs. Further, the findings of the study indicate that technology demands is also another major agent of curriculum innovation. Therefore, the study recommended that Busuma TVC should enhance its relationship and collaboration with the industry and other stakeholders or agents if curriculum innovation is to be effectively implemented at the institution and equip trainees with relevant knowledge and skills for success in the ever-dynamic world hence enabling them to contribute to national development of Zambia.

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At the University of Edenberg, Professor Banda plays a crucial role in shaping the next generation of educators and researchers. His teaching philosophy integrates theoretical rigor with practical applications, equipping students with the skills and knowledge necessary to address contemporary educational challenges.

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