# Exploring the Extent of Curriculum Innovation in Technical Education, Vocational and Entrepreneurship Training: A Tale of Mutemwa Technical Vocational College in Zambia.

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**Abstract:** *This paper examined the extent of curriculum innovation in Technical Education, Vocational and Entrepreneurship Training (TEVET) as experienced at Mutemwa Technical Vocational College (Mutemwa TVC) in Zambia. The study adopted a qualitative research design and using the questionnaire, interview guide and focus group discussion guide as means of data collection instruments, the research findings indicated that curriculum innovation is implemented in almost all the programs that are offered at Mutemwa TVC. The findings further revealed that curriculum innovation is evident in the way lecturers' presents their lessons by using enhanced pedagogical approaches and further introducing and making the programmes that are responsive to the needs of the society and clienteles. Additionally, the study identified the challenges encountered at the institution in implementing curriculum that includes inadequate funding, trainers' resistance to change and no proper channel of communication of curriculum innovation. An effective Continuing Professional Development (CPD) programme for lecturers at Mutemwa TVC that will equip them with the updated enhanced modern pedagogical approaches is recommended with the sole purpose of effectively implementing curriculum innovations in all programs at the institution.*

## 1. BACKGROUND

Innovation means doing things in new ways, and in curriculum, it means adopting different designs for learning to help make learning more meaningful for 21st-century learners. The 21st century should be likened to light which is linked with knowledge and truth and those who emerge from the cave, leaving behind them an awareness of mere shadows, passions, innovations and prejudices grow accustomed to the light and may gaze at intelligible reality as noted by Banda (2015). There is need to constantly be driven by the market as some practices in education have become outmoded making the learners remaining in dark cave and learning experiences should be redesigned to be more relevant to learners' interests, abilities, cultures and the signs of the times. An additional challenge is that with a more diverse population of learners who have a broad range of abilities, innovations must be linked to curriculum goals as well as being challenging and differentiated to provide for an array of learning experiences (Button, 2021).

Innovations in education including TEVET may take the form of (a) organization and management, (b) curriculum and (c) teaching and learning (Mulder & Sloane, 2004). Though, the thrust of the study is on curriculum, innovation in all these areas does not differ very much from the one another in the sense that, they all play complementary roles in the institution to achieve set goals in education. For instance, innovation in the curriculum may influence the way the teachers teach and learners learn (Boahin, 2019).

In most developing countries, Mwanza (2008) noted that Technical and Vocational Education Training still constitutes a marginal sub-sector in the education system. The TVET sector tends to generate little attention or budget provision, resulting in poor infrastructure and facilities, and a low status overall. Poverty Reduction Strategies and donor policies have preferred to focus on primary and higher education, with the implication that youngsters, in particular those from marginalized groups, who complete primary education have limited access to relevant further secondary or vocational schooling.

## 2. THEORETICAL FRAMEWORK

The model of curriculum innovation process known as organizational-oriented innovation process underpinned this research. The model has the following stages. First, the initiation stage is the process of collecting, conceptualizing, planning, directing, and preceding the decision to adopt innovation in the organization. The stage of initiation consists of two main activities, there are agenda-setting and matching (Supriani et al., 2022).

Supriani et al. (2022) indicated that the agenda setting is related to organizational problems that may be understood as the need for a defined innovation. The agenda-setting process is the result of top management brainstorming and reviewing about organization's needs. Matching is to match the organization's agenda with the innovations to be adopted and this adjustment has been planned and designed to implement innovations.

## 3. RELATED LITERATURE

In TEVET, White & Glickman (2007) observed that innovation can mean anything from a radical new experience based on a new way of thinking to a simple new way of doing things. It can also mean a change that makes administrative or academic performance better. Today's TEVET administrators, who must balance the fiscal pressures of running a large organization influenced by external forces such as rankings and increased competition for students and faculty and internal stresses produced by boards and accrediting agencies who are demanding more transparency, accountability, and tangible evidence of success, are best served by seeking continued innovation in curricular programs, delivery mechanisms, support services, and operations.

Print (1993) described innovation as an idea or practice which is perceived to be new and also the process by which that new idea or practice becomes adopted. Thus, the essential features of an innovation according to Print (1993) are as follows:

i. Its multidimensional nature-object, ideas or practice.

ii. Its being perceived as new by its adopters.

iii. Its process-oriented emphasis.

iv. Its intention of improvement.

## 4. STAGES IN CURRICULUM INNOVATION PROCESS

There are three main stages in curriculum innovation process according to the study that was conducted by Supriani et al. (2022) and these stages are as follows

### 4.1. Curriculum Planning

The initial stage of curriculum development is planning. In curriculum development, three aspects can be developed, namely development on the aspect of goals, development of material aspects, and development of institutional governance to develop these three aspects and it is necessary to have careful planning on all three. The plan includes three activities, namely strategic planning, program planning, and delivery plans program. Strategic planning is understood as activities carried out in the framework of formulating competency standards, determining the content and structure of the program, as well as the preparation of the strategy for the implementation of the curriculum as a whole. Because of its strategic nature, this activity is the duty and responsibility of the board and the authoritative parties in an educational institution (Supriani et al., 2022).

Program planning is understood as activities carried out to compile basic competencies and determine the material or subject matter in each subject. In this regard, the curriculum designer is in charge of compiling and formulating basic competencies. Basic competencies are formulated for each subject to be achieved during the course taught. On this basis, the basic competence of each subject is different from the basic competencies that will be achieved by other subjects. The other activity in program planning is the determination of materials or subjects in each subject. Delivery plans program is understood as activities carried out in the framework of learning implementation consisting of compiling indicators of competency achievement, determining materials, determining learning strategies, and determining learning evaluation tools to be used. The parties in charge of planning this learning activity are the teachers (Finch & Cruncilton, 1993).

## 4.2. Curriculum Implementation

The second stage in curriculum innovation process is curriculum implementation. Finch & Cruncilton (1993) lamented that there are four curriculum implementation models to choose from, including individual-based educational programs, modularized instruction, competency-based education, and school-based enterprise. Individual-based educational programs are understood as educational program that places learners as the main component, while anything else outside the learner is only a complementary component. If this model is chosen for curriculum implementation, then teachers must place the components of teaching books, media, strategies, and learning environments that have been planned as components that can maximize and educate in the learning process.

Module-based learning is a learning activity that places the module as the main component. Finch & Cruncilton (1993) indicate that the module-based learning format contains six components, namely: introduction (introduction), objectives (objectives), initial assessment (preassessment), learning experiences (learning experiences), textbooks (resource materials), and final assessment (post-assessment). Taking into account the above format, this module-based learning is compatible with the individual-based education program model.

Competency-based education is understood as an educational program that emphasizes more on the competence (ability) of learners, both in the form of knowledge (knowledge), tasks (tasks), skills (skills), attitudes (attitudes), values (values), and awards (appreciation) to achieve success in student life. In the learning process, teachers must use a variety of learning strategies such as role-play, simulation (simulation), and collaboration to provide a variety of learning experiences for students so that they have many opportunities to achieve the desired competencies. The evaluation tools are commonly used to assess the competence of learners to practice, initiate a project, make a product, and design a portfolio (Supriani et al., 2022).

School-based enterprise is understood as an education program that brings entrepreneurial activities into the school, such as restaurants, shops, companies, shopping, and others. This model involves learners in the management of these entrepreneurial activities, from preparation, and implementation to development. On the practical aspect, teachers work closely with organizations, institutions, and professional business people around their schools to directly guide their learners. From them, learners can learn a lot about planning, implementing, and developing entrepreneurial activities by learning by doing strategies (Supriani et al., 2022).

## 4.3. Curriculum Evaluation

The final stage in the curriculum innovation process is curriculum evaluation. Curriculum evaluation is "the process of describing in detail, obtaining, and providing important information for making a decision." According to the Context, Input, Process, and Product (CIPP) model, there are four evaluation objects: Context, Input, Process, and Product. Because of these four objects, this model is called the CIPP model (Oliva, 1992).

CIPP evaluation model was developed in 1971. The CIPP model has been applied in many evaluation studies to inform academic scholars and educational practitioners in understanding educational phenomena and programmes (Patil and Kalekar, 2014., Shamsa and Munazza, 2018). The CIPP evaluation model is a program evaluation tool that Daniel Stufflebeam and colleagues developed. The model requires the evaluation of the context, input, process and product in judging a program's value. The model by Daniel is considered a decision-oriented model that helps the evaluator systematically collect data about a program to identify strengths and challenges in content and delivery, improve program effectiveness, or plan for the future of a program. Sancer, Baturay and Fadde (2013) indicated that one of the strengths of the CIPP model is that it is a valuable and simple tool for helping evaluators produce questions of vital importance to be asked in an evaluation process. Evaluators can determine the number of questions for each component of the model.

Stufflebeam's CIPP evaluation model concentrates on four parts of a program: the overall goals or mission (Context Evaluation); the plans and resources (Input Evaluation); the activities or components (Process Evaluation); and the outcomes or objectives (Product Evaluation) (Stufflebeam, 1971). The CIPP evaluation model has been widely used to evaluate programmes and policies and can also be used to evaluate a curriculum progromme such as curriculum innovations. Patil and Kalekar (2014)

explained that the evaluation process provides individuals with feedback to account for the program's activities.

According to Shinkfield (2007), the CIPP evaluation model emphasises learning by doing to identify corrections for problematic features. The proactive application of the model can facilitate decision-making and quality assurance. Its retrospective use allows the faculty member to continually reframe and sum up the project's merit, worth, integrity, and significance. The four components of the Context, Input, Process, and Product evaluation model help guide the stages of a project and programmes such as the subjects that run-in TEVET. The cardinal thing about this model is that it provides a holistic view of every element by evaluating the context, input, process, and output from all angles. With the aid of this model, evaluation can be done systematically, fulfilling the general needs of evaluation. The critical element that makes this model different from other models is that it focuses on the context for evaluating the teaching-learning and development process (Stufflebeam and Shinkfield, 2007).

*4.3.1. Context Evaluation*

Context evaluation helps evaluate the needs and opportunities within a defined context or environment (Stufflebeam and Shinkfield, 2007). Context evaluation aims to define, identify and address the needs of the target population, identify the problems and assess if the goals are responsive to the desired needs or not (Khuwaja, 2001., and Stufflebeam, 2001). Context is about studying the environment in which the curriculum is implemented. The purpose is to evaluate what is happening and examine why the needs of the stakeholders may not be met. Everyday activities at this stage include the physical environment and the philosophical foundations of the curriculum. In this study, understanding the context in which the innovations in TEVET in Zambia were highly informative to this study.

Scriven (1994) discussed that input evaluation determines whether adequate resources exist. Evaluators pay attention to the goals and strategies of the evaluation. Other approaches may be suggested to evaluate the curriculum if there are concerns. In many ways, this is when the evaluation methodology is checked rigorously. This evaluation aims to determine the resources used to meet the program's goals (Khuwaja, 2001). The resources include time, human resources, physical resources, infrastructure, curriculum, and content for evaluating the quality of education at each school.

*4.3.2. Process Evaluation*

The primary purpose of the process evaluation is to describe all the activities in the program (Stufflebeam, 1971). Process evaluation concentrates on the running of the program and in this case, the teaching and learning processes. Implementation is when the inputs are used effectively to achieve the product's desired aims, objectives, and goals. The evaluator assesses the processes to understand how the school works and which processes are responsible for better working and maintaining the quality of education. In this phase, implementation decisions are taken (Patil and Kalekar, 2014). The learning institution processes include systematic approaches, teaching and learning activities, and examinations based on summative and formative assessments (Print, 1993). At this level, evaluators examine if the plan is happening in the classroom. Evaluators look for weaknesses and strengths in the implementation or use of the curriculum. Whatever challenges are identified, strategies are developed to address them.

*4.3.3. Product Evaluation*

Product evaluation includes the outcomes of the program or project. In the case of this study, the focus of the product is not on the student's achievement of grades but the innovation on the skills, attitudes, knowledge, learning and abilities they attain, which the learners will use to benefit themselves and society. A product evaluation assesses outcomes and outputs, short and long term, intended and unintended outcomes, which keeps track and focuses on the objectives' fulfilment or not (Stufflebeam, 2003).

The CIPP model deals with products or outcomes at the end and different points during the educational program's beginning and implementation. The products are then mapped with objectives, weaknesses are noted, and expected changes are made to improve the quality of education (Sancer, Baturay and Fadde, 2013). The product stage involves collecting data to decide on the curriculum.

Data is gathered to see how well the curriculum is meeting objectives. From this, decisions are made. Based on Stufflebeam (2003) evaluation model, this study assessed the extent of inputs and processes of innovation at Mutemwa TVC. These dimensions included strategies used for implementing the teaching and learning processes, including skills of lecturers, equipment, and responsible for achieving outcomes or products.

## 5. PRINCIPLES OF CURRICULUM INNOVATION

Yanti et al. (2023) identified some of the following principles that should be applied in curriculum innovation.

### 5.1. Principle of Relevance

One of the principles of curriculum innovation that was noted by these authors is the principle of relevance. Relevance means that the components of curriculum objectives, content or learning experiences, organisation and evaluation are compatible with the needs of society, both in terms of fulfilling the workforce and idealised citizens, including the delivery and evaluation processes.

### 5.2. Principle of Flexibility

The second principle of curriculum innovation is the principle of flexibility. Curriculum innovators must realise that the curriculum must be able to be adapted to local situations and conditions and the ever-evolving times without overhauling the educational goals that must be achieved.

### 5.3. Principle of Balance

The third principle of curriculum innovation is the principle of balance. With this balance, it is hoped that there will be a complete and comprehensive blend, with each contributing to personal development.

### 5.4. Goal Oriented Principle

The other principle of curriculum innovation is goal-orientated principle. Curriculum objectives contain aspects of knowledge, skills, attitudes and values, which in turn foster changes in the behaviour of learners that cover these three aspects and are related to the aspects contained in the educational objectives.

### 5.5. Principle of Efficiency and Effectiveness

Efficiency and effectiveness is another principle of curriculum innovation. Curriculum innovation must consider the efficient use of funds, time, energy and available resources in order to achieve optimal results. Limited funds must be used in such a way as to support the implementation of learning. The time available for students to learn at school is also limited and must be utilised appropriately in accordance with the subjects and learning materials required.

### 5.6. Principle of Integration

The other principle that was noted in the study is the principle of integration. With this integration, it is hoped that a round and complete person will be formed. In addition, integration is also implemented in the learning process, both in the interaction between students and teachers and between theory and practice.

## 6. CONSTRAINTS TO CURRICULUM INNOVATION

There are a lot of challenges in curriculum innovation in institutions of learning hence making it difficult for good quality education that is empowering and capable of bringing about sustainable development to be provided (Bashiru et al., 2022). These education scholars identified the following as constraints of curriculum innovation:

The first constraint is lack of appropriate channels of communication necessary for dissemination of information about the revised curriculum is bound to disrupt the implementation of such a new curriculum. In fact, information about any curriculum innovation that is not properly and adequately disseminated to all the people concerned with the implementation will suffer some setbacks.

Secondly, the lack of awareness on the importance of curriculum changes or innovation is a major challenge. The society is dynamic and ever changing yet, some people are illiterate of the need for TEVET curriculum innovation, in addition, they are also unaware that, advance in technology usually

call for extensive curriculum reconstruction so that the school does not expose the learner to irrelevant knowledge and skills.

The other challenge is that teachers, administrators are too conservative to effect changes. They are often time suspicious of any new technique or innovation thus militating against any curriculum change. Inability of teachers to effect the desired change or innovation is a great challenge because teachers are the core implementers of curriculum that is to say the success and the failure of curriculum depend to a large extent on the teachers. In this regards, any innovation call for knowledge, understanding technique and other abilities. Where these are lacking then the knowledge gap will be a challenge in curriculum innovation. This will make the teacher unable to implement the curriculum. In contributing to this discussion, Cedefop (2015), in his study, indicated that some of the barriers that may hinder the innovation in TVET instructional delivery are the culture of teachers and schools, such as pressure of work, habit, lack of confidence, among others. Therefore, it is in this line of thought this author suggested in his study that TVET institutions must, therefore, seek effective ways of ameliorating the challenges facing the innovation in TVET instructional delivery.

Further, there is the need to teach and learn in TEVET through the use of new technologies brought about by recent innovation. Recent technologies challenge the traditional teacher-centered learning because they provide instant access for students to materials prevailing supplied by the teacher, it enhances the role of the teacher as manager of the learning process rather than the source of content (Bashiru et al., 2022). In line with the technologies challenge, Tinio (2002) was of the view that issues like digital culture and literacy, Information and Communication Technology (ICT) and teacher professional development, global awareness, investment benefits in ICT, resource constraint context, effectiveness, cost, equity, and sustainability should be looked into. Also, the acquisition of innovation skills in TVET instructional delivery should be addressed in pre-service teacher training and built on and enhanced in-service. Some prospects of using innovations in TVET instructional delivery, according to Frederick (2015), should include: empowerment of learners, enhancement of creativity and flexibility to instructional delivery, achievement of better value, development of professional workforce and fulfilled and curious citizens. Teachers and trainers will also need support through professional development programmes.

The other challenge is inadequate funding. Most often curriculum innovation faces a lot of problem, because of inadequate funds to recruit qualified teachers, train and retrain the teachers, recruit capable technicians and supportive staff, build laboratory for practical to cope with the innovation. Aguokobguo (2002) and Ereh (2005) identified lack of funding as a major factor that militates against curriculum innovation and implementation. Where there is inadequate fund, the anticipated change will suffer a serious setback because it will be difficult to implement an innovation effectively and efficiently (Ughamadu, 2006). In a similar vein, Yanti et al. (2023) noted that implementing curriculum innovations often requires sufficient resources, whether in terms of budget, facilities or training for educators. These resource limitations can be a barrier to introducing more effective and integrated curriculum changes.

Further, a challenge in innovation is the emphasis on active learning technique. Active learning as the name suggests is a process whereby learners are actively engaged in the learning process rather than passively absorbing lectures. Hence the usual problem solving approach like fieldwork, guided discovery, project, laboratory works, programmed Instruction need to be sustained to enable learners acquire 'hand-on' and 'minds on' skills. Active learning generates and sustains motivation and a learner who is so motivated learns more easily (Abba and Ubandoma, 2008). In view of the above arguments, Cedefop (2015) lament that lack of innovation in TVET instructional delivery in TVET institutions has contributed much in lack of student engagement, satisfaction, perceptions, achievement, progression and motivation evidence in unemployment rate. Drent & Meeliseen (2008) also maintained that challenges of innovation in TVET instructional delivery are seen in the installation, operation, maintenance of facilities, among others. In this light, De Otero (2019) indicated some challenges to TVET instructional delivery to include; internal resistance to change teaching methods, pedagogical practices, lack of access to new pedagogical equipment, and others.

Jackson (2014) contributes to this discussion by revealing that incompetent leadership hinders innovation in curriculum. If there is a leadership that lacks vision and mission, such leadership will not be competent to successfully handle the processes involved.

## 7. METHODOLOGY

This study primarily used a qualitative research method, supplemented by a small amount of quantitative data, to collect information from staff and students at Mutemwa TVC. Participants were selected using purposeful sampling. Data collection was carried out using questionnaires, interviews, and focus group discussions. Qualitative data from the interviews were analyzed using thematic analysis, while the limited quantitative data from the questionnaires were analyzed using descriptive statistics such as frequency and graphs.

## 8. RESEARCH FINDINGS

Curriculum innovation is crucial for any training to be responsive and relevant to the needs of the learners and the society. The findings of the study revealed that all respondents in this study indicated that curriculum innovation exists at Mutemwa TVC. The following response from one of the members of staff at Mutemwa TVC is an excellent confirmation of the existence of curriculum innovation at the institution:*"...curriculum innovation do actually exists at this institution at a high level and I can confirm that we use technology and various technological platforms in the teaching and learning process which wasn't the case sometime back...this can be attributed to curriculum innovation and moving with time..."*

Additionally, the findings reveal that curriculum innovation has been implemented at Mutemwa TVC in the University of Zambia programs, Copperbelt University programs, short intensive courses and the TEVET programs. The institution has embarked on curriculum innovation in order to meet society and clientele needs. Further, curriculum innovation has brought in the use technology at the institution including the use of Learner Management System (LMS) that enables learners to access multiple learning materials. In order to equip trainees with appropriate and relevant skills, the institution has introduced ICT in almost all the courses to equip learners with knowledge and skills about technology in education. In addition, the findings from the students revealed that curriculum innovation do exists at Mutemwa TVC at different levels. In support, one of the trainees indicated the following:*"...there is integration of technology mostly in both teaching and learning as evidence of the existing of curriculum innovation in the courses we are undertaking at this institution."*

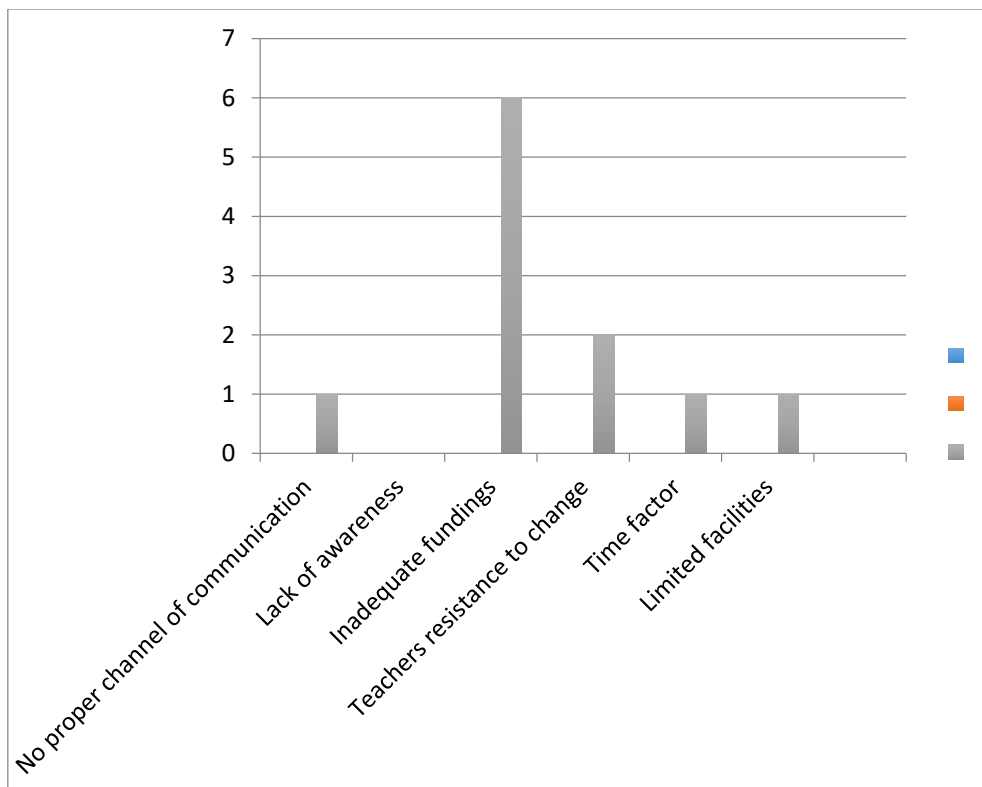**Major Constraints to Curriculum Innovation**



**Figure1.** *Field work (2023)*

Figure 1 reveals that there are many factors which constraints curriculum innovation at Mutemwa TVC. However, it is noted that most of the respondents pointed out that inadequate funding is a major challenge to the implementation of curriculum innovation. In agreeing to these findings, one of the respondents confirmed by the following statement: *"...the process is acknowledged to be time-consuming and costly, making it challenging to keep pace with the fast-changing demands of the labor market".*

## 9. DISCUSSION OF THE FINDINGS

The above findings align with Supriani et al. (2022) who noted that under the implementation stage in the curriculum innovation process teachers must use a variety of learning strategies such as role-play, simulation, and collaboration to provide a variety of learning experiences for trainees so that they have many opportunities to achieve the desired competencies. This discovery by Supriani et al. (2022) is in line with the findings of this research that technology integration is evident that Mutemwa TVC incorporates modern technologies into the curriculum to facilitate interactive learning, online resources, and use of digital tools.

The findings on the constraints of curriculum innovation are in agreement with Aguokobguo (2002) and Ereh (2005) who observed that lack of funding is a major factor that militates against curriculum innovation and implementation. This can also be linked to Ughamadu (2006) who also noted that where there is inadequate funding it would be difficult to implement innovation effectively and efficiently. Further, this is similar to what was revealed by Yanti et al. (2023) that implementing curriculum innovations often requires sufficient resources, whether in terms of budget, facilities or training for educators.

According to figure 1, the study revealed that the other major constraint is teachers' resistance to change. This study finding is similar with Bashiru et al. (2022) observation that teachers, administrators are too conservative to effect changes. They are often time suspicious of any new innovation thus militating against any curriculum change. Further, the other challenge of curriculum innovation as revealed by the study is no proper channel of communication of curriculum innovation which is also in agreeable with the findings of the study that was conducted by Bashiru et al. (2022).

## 10. CONCLUSION

The findings of the study reveal that curriculum innovation is implemented in almost all the programs that are offered at Mutemwa TVC. In addition, curriculum innovation could be noted in the way lecturers presents their lesson by using enhanced pedagogical approached and further introducing and making the programmes that are responsive to the needs of the society and clienteles. However, the study also reveal the challenges encountered at the institution in implementing curriculum that includes inadequate funding, teachers' resistance to change and no proper channel of communication of curriculum innovation.

Therefore, the study accentuated for the need for an effective Continuing Professional Development (CPD) programme for lecturers at Mutemwa TVC that will equip them with the updated enhanced modern pedagogical approaches with the sole purpose of effectively implementing curriculum innovations in all programs at the institution.

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Throughout his career, Professor Banda has focused his research on several pivotal areas within the Sociology of Education. His scholarly interests include the dynamics between education and society, the role of teachers in community engagement, sex education, curriculum studies, and teacher education. His work is characterized by a nuanced exploration of how educational practices intersect with broader societal issues, aiming to enhance educational outcomes and societal well-being.

As an accomplished author, Professor Banda has published a notable book and numerous papers in esteemed national and international journals. His publications reflect his expertise and dedication to advancing knowledge in the field, offering valuable insights into educational policies, practices, and their implications for society.

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.

Professor Martin Banda's scholarly achievements, extensive research contributions, and dedication to education underscore his influential role within the academic community. His ongoing pursuit of excellence continues to enrich the field of Education and Curriculum Studies, making a lasting impact on educational practices and policies worldwide.

Professor. Martin Banda can be reached through his profiles on LinkedIn, ORCID and ResearchGate.