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Exploring the Implementation of Heritage-Based Education 5.0 Curriculum in Tertiary Institutions, in Zimbabwe

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Abstract

The study explored the implementation of Heritage-based Education (HBE) 5.0 curriculum in tertiary institutions, in Zimbabwe. The Heritage-based Education 5.0 curriculum is anchored on five pillars: Teaching, Research, Community engagement, Innovation and Industrialization. The curriculum advocates for the production of goods and services which are the primary focus of the philosophy (Murwira, 2023). The study sought to come up with a strategic model that enhances the implementation of Heritage-based Education 5.0 curriculum. The study involved two cases: a teachers' and polytechnic colleges. Survey questionnaire was used to collect quantitative data from a sample of 200 students. Semi-structured in-depth interview questions were used to generate descriptive data from 10 Student Representative Council (SRC) members and 10 College Management Board (CMB) members through focus group discussions, with virtual interviews held using zoom platform with Principals of the two selected colleges. The study established four fundamental Heritage-based Education 5.0 curriculum implementation findings, which are: key stakeholders involved in the implementation of HBE 5.0 curriculum who include lecturers, Principals, students, non-lecturing staff and the community; the benefits of HBE 5.0 curriculum which include skilled human capital, improved infrastructure, creation of employment, generation of income and, the production of goods and services; constraints which derailed the implementation process include the bureaucratic procedures, inappropriate infrastructure and equipment, limited funding and shortage of raw materials; Heritage-based Education 5.0 curriculum impacts on students by preparing them to be able to: innovate and industrialise, apply theory into real life-contexts, turn ideas into entrepreneur and become job creators. The study concluded and emerged with a five-step pedagogical-strategic-ladder model that enhances the HBE 5.0 curriculum implementation process which embrace: community engagement, collaborations, hands-on student-centric, pragmatic interdisciplinary and project-based learning processes. Further, the study recommends a holistic approach in the implementation of Heritage-based Education 5.0 curriculum in order to contribute significantly to the achievement of becoming upper middle-income economy in Zimbabwe by 2030.

Keywords: Community engagement, curriculum, heritage-based education 5.0: implementation, innovation, industrialisation, research, teaching, tertiary

1. Introduction

Heritage-based Education 5.0 (HBE) curriculum has five (5) pillars which are Teaching, Research, Community service, Innovation and Industrialisation. The pillars play significant roles in human capital development by producing a holistic graduate, equipped with skills to solve the world's ever-increasing unemployment and economic challenges (Taib, & Muda, 2020) [25]. The complexity in the implementation of the Heritage-based Education 5.0 curriculum in tertiary institutions aggravates creating an environment that requires to encompass pragmatic approaches in order to achieve the objectives of the curriculum. Thus, the 21st century tertiary institutions play a crucial role in developing practical and entrepreneur-oriented graduates by shaping their cognitive development, equipping them with innovative and entrepreneurship skills. The HBE 5.0 curriculum offers potential solutions to Zimbabwe's perennial challenges of producing graduates who are employment seekers, by

leveraging technology, innovative and pragmatic pedagogical approaches that create a more engaging and personalized student friendly environment that develops critical thinking. Thondhlana, (2019) [28] asserts that Heritage-based Education 5.0 curriculum also focuses on the integration of emerging technologies such as Artificial Intelligence (AI), Virtual Reality (VR), and Augmented Reality (AR) into tertiary teaching and learning processes. These technologies have the potential to enhance students' learning experiences by providing interactive and immersive content, fostering creativity, critical thinking, and modern problem-solving skills. Similar researches by Kotter (2022) [11] in South Africa; Awang, Taib, & Muda, (2020) [25] in Namibia and Muzira & Muzira, (2020) [21] in Zambia revealed that the HBE 5.0 curriculum encourages a learner-centric approach, where students actively participate in the learning process, allowing them to develop self-directed learning skills and a sense of ownership over their education (Armstrong, 2020) [1].

However, of importance to note is that, none of these studies explored the implementation of Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe. It is against this background that the exploration of the implementation of Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe is vital.

1.1. Statement of the Problem

The implementation of Heritage-based Education 5.0 curriculum in tertiary institutions presents complexity in coming up with a model that enhances practical benefits, opportunities, production of goods and services. While the integration of technology and innovative teaching methods can enhance the production of goods and services which are critical in addressing the potential economic challenges of any nation in the world. Despite that, there were some studies conducted on the implementation strategies of the HBE 5.0 curriculum in institutions of higher learning in selected Southern African Development Community (SADC) countries has not been felt in Zimbabwe. Further, several studies have been carried out in Kenya (Ndhlovu, 2020) ^[22], Zimbabwe (Chireshe 2023) ^[4], Scotland (Davidson, 2015) ^[3], Zambia (Siamongwa, 2020) ^[23], among others, Heritage-based Education 5.0 curriculum studies seem to have limited attention in Zimbabwe. In the same vein, the complexity on the implementation of the Heritage-based Education 5.0 philosophy has prompted this study to explore the HBE 5.0 curriculum implementation process in tertiary institutions in Zimbabwe.

1.2. Research Questions

The Study Focused on the Following Research Questions:

- i). Who are the key stakeholders involved in the implementation of the Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe?
- ii). What are the benefits of implementing the Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe?
- iii). How does the implementation of Heritage-based Education 5.0 curriculum impact on the life-style of students in tertiary institutions in Zimbabwe?
- iv). What are the challenges experienced when implementing the Heritage-based Education 5.0 model in tertiary education institutions in Zimbabwe?
- v). What are the strategies that enhance the implementation of the Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe?

2. Literature Review

This section reviews related literature on Heritage-based Education (HBE) 5.0 curriculum pillars; key stakeholders in the implementation of Heritage-based Education 5.0 curriculum; the importance of implementing HBE 5.0 curriculum and the implementation of Heritage-based Education 5.0 curriculum considerations.

2.1. Unpacking the Heritage-based Education 5.0 Curriculum Pillars

The Heritage-based Education 5.0 curriculum is anchored on five (5) pillars which are: Teaching; Research; Community service; Innovation and Industrialisation. These pillars are unpacked as this section unfolds.

- i). **Teaching:** The teaching pillar emphasises pragmatic, dynamic, experiential, and collaborative methods. The

teaching approaches prepare students for real-world challenges by empowering them to be innovative, adaptable and ready for the complexities of their communities (Jonathan 2019) ^[8]. Thus, students in tertiary institutions should be provided with student-friendly environments that stimulate creativity, critical thinking, and problem-solving skills. The teaching approaches also emphasise the value of personalized learning that allows lecturers to tailor make instruction that meets individual needs of each student. As a whole, the teaching methods should be well-prepared in order to equip students with relevant knowledge and skills that will enable them to encounter challenges they face in real-life situations.

- ii). **Research:** The Research component encourages both lecturers and students to explore new ideas that contribute to new knowledge, and address societal issues through rigorous inquiry. Silverman, (2020) ^[18] asserts that by promoting a culture of inquiry and experimentation, students can come up with new innovations and effective teaching and learning strategies that benefit learning outcomes. In a nut shell, research in tertiary institutions assists in identifying best practices and trends, leading to continuous improvement, coming up with innovations in various fields.
- iii). **Community Service:** The Heritage-based Education 5.0 curriculum encourages lecturers and students to engage with their communities in various projects. The community service pillar promotes among the students, active participation, social responsibility, and a sense of purpose beyond the laboratories, lecture rooms and workshops (Black, 2017) ^[2]. In fact, the pillar plays a crucial role in promoting community engagement and social responsibility among the students. Further, community engagement inculcates among students, values such as compassion, empathy and respect for their communities. According to Wuta (2022) ^[30], through community service, students develop a sense of civic duty and a desire to make a positive impact on their communities. In summary, through partnerships in community service projects, students can learn the importance of working collectively in order to create a better world for all.
- iv). **Innovation:** The innovation pillar nurtures creativity and problem-solving techniques among the students. According to Mabika and Maireva, (2022) ^[13], the innovation element inspires students to think critically, develop novel solutions, and contribute to coming up with ideas that add value to existing and new products. In brief, in order to achieve the objective of the Innovation pillar of HBE 5.0, in lecture rooms and workshops, students should be engaged in practical activities that produce goods and services.
- v). **Industrialisation:** Industrialisation is referred to as a pragmatic pillar that aims to bridge the gaps between theory, lecture room, learning processes and industry (Mabika, and Maireva, 2022) ^[13]. It is a pillar that prepares students for the workforce by equipping them with practical and entrepreneurial skills, and comprehension of industrial processes that produce goods and services (Wuta, 2022) ^[30]. In brief, the focus of industrialization is to ensure that students are well-equipped with techniques that enable them to compete and contribute to both their communities and global economies.

2.2. The Key Stakeholders in Tertiary Institutions

The key stakeholders in tertiary institutions are discussed below.

- a) **Policy Formulators:** Policy formulators hold the responsibility of creating an enabling environment through policies for the effective implementation of Heritage-based Education 5.0 curriculum. They need to formulate policies that ensure adequate funding for the support of integration of theory, technology and practical activities that produce goods and services (Togo, and Gandidzanwa, 2021) ^[29]. Further, policy formulators should provide guidelines and standards for the smooth implementation HBE 5.0 curriculum. Policy formulators are expected to come up with policies which are inclusive, user-friendly and enhance hands-on practices (Katiyo, 2022) ^[9]. Their involvement as one of the stakeholders would uphold the democratic principles in policy formulation since it is the international practice with the view to provide user-friendly environments for the successful implementation of Heritage-based Education 5.0 curriculum.
- b) **Lecturers:** Lecturers as key stakeholders are responsible for designing and delivering a heritage-based curriculum that incorporates Minimum Bodies of Knowledge (MBKs) that are technology driven and promote hands on experiences (Wuta, 2022) ^[30]. The lecturers utilize digital tools such as interactive boards, online platforms and Artificial Intelligence (AI) programmes which augment teaching, research, innovation and industrialisation in the teaching and learning processes. Further, they provide valuable input in identifying appropriate objectives, content, skills and tailoring instructional methods that meet individual students according to their needs. Firomumwe, (2022) ^[7] asserts that lecturers deliver lectures, facilitate discussions and assess students' progress. In the same vein, lecturers simplify curriculum content by translating it into meaningful learning experiences and fostering positive and supportive friendly environments. Thus, their major role in the implementation of the Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe is to be established by this study.
- c) **Students:** In this study, students in this study refers to consumers of tertiary education services provided by the tertiary institutions (Duze, 2021) ^[6]. According to Katiyo, (2022) ^[9], the students constitute over 75% of the population in tertiary institutions in Zimbabwe, hence they should be provided with user-friendly spaces in order for them to contribute significantly during the implementation of the Heritage-based Education 5.0 model. Thus, the students are among the key clients or stakeholders who should be afforded first preference in participating freely in the implementation of the model, because they are directly involved in the theoretical and practical learning processes. It is from this assertion that this study sought to explore how best the students may be involved at every stage of HBE 5.0 curriculum implementation in order to produce goods and services that benefit them and their communities economically.
- d) **The Community:** The community refers to a group of people residing in the same area, sharing common attitudes, culture, language, interests and having ownership of locally available resources (Davidson, 2020) ^[5]. The community is a key stakeholder of every government initiative, hence they play a vital role in

supporting the implementation of Heritage-based Education 5.0 missions when they are strategically engaged by tertiary institutions. Thus, communities may collaborate with lecturers and students to reinforce skills acquired, by working on community projects. Therefore, the community are co-implementers that fulfill the success of the community service mission in the model. This study investigates best practices of engaging the communities in order to address societal needs through community engagement.

2.3. The Importance of Implementing Heritage-based Education 5.0 Curriculum

Heritage-based Education curriculum encompasses five missions referred to as pillars in this study. The importance of implementing HBE 5.0 curriculum include the following:

Firstly, students are equipped with technical and entrepreneurial skills through the provision of experiential and experimental environments. In this vein, students are afforded the opportunity to innovate and produce goods and services. The Heritage-based Education 5.0 curriculum further prepares students to commence their own production hubs after graduation.

Secondly, students are given the opportunity to explore their capabilities using the pragmatic approaches. Thus, the HBE 5.0 curriculum advocates for blending theory and practice as students engage in hands-on experiences that give solutions to real life challenges. Further, the Heritage-based Education 5.0 curriculum affords both lecturers and students the opportunity to innovate, modernise and industrialise in their respective areas of specialization, creating occupation to themselves.

Thirdly, the Heritage-based Education 5.0 curriculum implementation re-orient students towards the application of knowledge and utilisation of locally available resources in order to develop and produce relevant goods and services for the benefit of the communities (Murwira, 2020) ^[17]. Thus, the HBE 5.0 curriculum focuses on developing graduates with practical and entrepreneurial skills who will have the ability to create their own employment through the establishment of business units, than being employment seekers.

2.4. Heritage-based Education 5.0 Curriculum Implementation Considerations

In this study, curriculum implementation refers to collating all that has been planned into practice through the efforts of key stakeholders (Lantada, 2022) ^[12]. Thus, the implementation of Heritage-based Education 5.0 curriculum involves interaction with instructional tools, strategies, physical infrastructure, financial resources, social and psychological environments.

The Heritage-based Education 5.0 curriculum framework reflects the Zimbabwean political and social covenant of the tertiary education. In view of the covenant, the major considerations during implementation are discussed as this section unfolds.

- i). **Organisation of the Tertiary Education Curriculum:** The tertiary education curriculum should be re-organised in order to align with the demands of Heritage-based Education 5.0 curriculum. According to Togo and Gandidzanwa (2021) ^[29], the curriculum should define specific and measurable objectives with practical learning outcomes. Further, the curriculum organisation should indicate theoretical and practical learning areas, disciplinary subjects, skills and competencies to be acquired. In brief, the curriculum organisation should indicate cross-cutting competencies such as

collaboration, communication, creativity, critical and pragmatic thinking.

- ii). **College-based Policy Dissemination Strategies:** According to Mabwe and Mabhanda (2023) ^[14] each tertiary institution should design a strategy to disseminate the policy on Heritage-based Education 5.0 curriculum and the expected outcomes in an effort to make lecturers, students and communities aware of the needed changes in the teaching and learning processes. The tertiary institutions may use strategies which include first year orientation programmes for students as they enroll, staff development workshops, Principal's hour sessions with students already in the system, Student Representative Council (SRC) and staff meetings, and exhibitions at various fora in the communities (Katiyo, 2022) ^[9]. It is paramount to strategically disseminate the thrust of the policy on Heritage-based Education 5.0 curriculum to all key stakeholders so that everyone is taken on board on the new tertiary education direction in Zimbabwe.
- iii). **Alignment of Teaching and Learning Resources:** The alignment of resources such as syllabuses, textbooks, modules and pedagogical materials is a critical consideration for the success of Heritage-based Education 5.0 curriculum implementation. Lecturers, scholars and researchers in tertiary institutions should be engaged in authoring and publishing textbooks, modules, journals and teaching guides that articulate content and expectations that are in line with Heritage-based Education 5.0 curriculum (Munikwa and Mapara, 2023) ^[16]. Thus, when literature is aligned to the new Heritage-based Education 5.0 curriculum, the implementors operate at the same level nationally.
- iv). **Inclusivity:** A critical factor to be considered is inclusivity. The teaching and learning processes should be either gender inclusive or non-discriminatory or gender neutral (Webster, 2020) ^[32]. In the same vein inclusivity should take cognisance of creating environments that are emotionally secure, physically safe, socially interactive and psychologically enabling in order to embrace everyone in the implementation of Heritage-based Education 5.0 curriculum (Katiyo, 2022; Tole, 2022) ^[9, 26]. Thus, the focus should be anchored on addressing all barriers to inclusivity in tertiary institutions in Zimbabwe. In brief HBE 5.0 curriculum implementation should not exclude students on the basis of their learning difficulties, physical disabilities, economic backgrounds, gender or social differences.
- v). **Financial Resources:** Financial resources refer to all forms of money used to fund activities, investments, workshops, staff development programmes, development of infrastructure and procurement of materials that enable the smooth implementation of Heritage-based Education 5.0 curriculum (Tole, 2022) ^[26]. The development of infrastructure is essential in order to meet the demands of HBE 5.0 curriculum implementation that includes the construction of innovation hubs, workshops for commercial production, shelter for machinery and equipment, appropriate learning spaces and warehouses for storing various goods produced.

3. Methodology

The study adopted a multi-case design in which two cases, a teachers' and polytechnic college were involved. The target population of the study was 14 Principals, 1200 students, 30 Student Representative Council (SRC) members, 40 College Management Board (CMB) members and 130 lecturers. Simple random sampling technique was used to select 200 students, 35 lecturers and 11 CMB members. While purposive sampling technique was used to choose Two (2) Principals and 10 SRC members. The sample sizes of participants for each case are indicated in Table 1 below.

3.1. The Sample Sizes of Participants

Table 1: Sample sizes of participants for the two cases

| Study Cases | Sample of Staff Members | | | Sample of Students | | |
|---------------------|-------------------------|-----|------------|--------------------|-----|-------|
| | Lectures | CMB | Principals | Students | SRC | % |
| Case A: | | | | | | |
| Teachers' college | 10 | 5 | 1 | 80 | 5 | 40.73 |
| Case B: | | | | | | |
| Polytechnic college | 15 | 6 | 1 | 120 | 5 | 59.27 |
| Totals | 35 | 11 | 2 | 200 | 10 | 100% |

Key: CMB-College Management Board; SRC-Student Representative Council

3.2. Research Instruments

The study employed a mixed method approach located in the pragmatism paradigm in which two instruments were used to collect data. Semi-structured in-depth interview questions were used to generate qualitative data from Principals, lecturers and CMB, while structured questionnaire was used to gather quantitative data from students. Qualitative data were analysed using the thematic approach, and quantitative data were analysed using IMBSPSS version 21 to come up with themes. The participants provided data on key stakeholders involved in the HBE 5.0 curriculum implementation, the benefits of HBE 5.0 curriculum, constraints of HBE 5.0 curriculum and strategies that enhance the implementation in tertiary institutions in Zimbabwe.

4. Results

Descriptive and numerical data are presented, analysed and interpreted concurrently under specified themes as this section unfolds.

4.1. Key Stakeholders and their Roles in the Implementation of HBE 5.0 Curriculum in Tertiary Institutions in Zimbabwe

Descriptive data were generated through physical focus group discussions with lecturers, SRC, CMB and virtually through zoom platforms with Principals.

Results in Table 2 indicate views of interviewees on key stakeholders and their roles in the Heritage-based Education 5.0 curriculum implementation in tertiary institutions in Zimbabwe.

Table 2: Responses on Key stakeholders and their roles in the Heritage-based Education 5.0 curriculum implementation

| Case A: Teachers college | Case B: Polytechnic college |
|--|--|
| FGCAL6: “The Key stake holders in implementing Heritage-based Education 5.0 curriculum are lecturers and students because they are directly involved. Lectures do interact with students during planning, teaching and learning processes.” | PCB: “I think all people who make up the polytechnic tick are key in the Heritage-based Education 5.0 curriculum implementation, as a Principal, I do all administrative work, lecturers plan, present lectures, supervise students in various projects, support staff do all ground work needed and the community provides raw materials needed for our projects.” |
| PCA: “Everyone in the college, that is lecturers, students and support staff are key and participate in one way or the other. For example, lecturers do plan, present lectures, students learn theory and do the practical by producing goods and services while the community supply with raw materials.” | FGCBL8: “The most important players in the implementation of the Heritage-based education 5.0 curriculum are the Principal and vice who do planning, supervision, procurement and all administrative work, lecturers do the teaching, demonstration of skills and supervise all students work including examining them internally, students learn and put into practice through having projects” |
| FGCA SRC 2: “In my view, lecturers, students and to some extend the community are people who are involved in the success of the implementation of the newly introduced Heritage-based Education 5.0 curriculum. You find that lecturers interpret the curriculum, Principal administers human, financial and material resources, students apply the theory and skills as they work on the production of goods and the community support by consuming the products.’ | FGCBSRC4: “Without lecturers and students there is no Heritage-based Education 5.0 curriculum implementation because lecturers teach us, give us guidance, work together on the practical work while as students we do bulk of the projects to fulfill the demands of the curriculum.” |
| FGCAL3: “In my view, planning, supervision and financing are done by the Principal, while lecturers do the teaching and students do the practical work, so we are all key stake holders.” | FGCBL3: “In my opinion key people are lecturers as they teach and initiate projects in their area of specialisation, the Principal as the chief accounting officer of the institution supervises all curriculum activities, students do all practical work and produce goods and services in their respective areas with the support of non-teaching staff and the community.” |
| FGCA CBM 4: “From my experience in the management, core stakeholders involved in the Heritage-based Education 5.0 implementation are lecturers who facilitate the teaching, students do the learning and practical work, support staff do all preparatory work and the processing of required resources.’ | FGCB CMB 3: “I concur with other participants, to put it in simple, I all college members are key as each one has a complementary role. The Principal is the overseer, lecturers research, teach and supervise students, students do the hands-on activities producing the goods and services, support staff assist in all clerical work, mobilisation of resources, distribution while the community provides raw materials and social support in the implementation of Heritage-based Education 5.0 curriculum’ |
| FGCASRC 5: “In fact, some staff members like lectures do the teaching and demonstration of skills, technical or support staff do all the preparations and avail resources while the community support the college’s projects. So, everyone is key in my view.” | |

Key: **FGCAL6** = Focus Group Case A Lecturer 6; **FGCA SRC 2**= Focus Group Case A Student Representative Council member 2; **PCA** = Principal of Case A; **FGCAL3** = Focus Group Case A Lecturer 3; **FGCA CBM 4**: focus Group Case A College Management Board Member 4; **PCB**= Principal of Case B; **FGCBL8**= Focus Group Case B Lecturer 8; **FGCBSRC4**= Focus Group Case B Student Representative Council Member 4; **FGCBL3**= Focus Group Case B Lecturer 3; **FGCB CMB 7**= Focus Group Case B College Management Board member 7

The study’s participants of Case A and Case B highlighted a common level of understanding indicating roles of selected stakeholders involved in the implementation of Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe. The section below shows responses which show how each key stakeholder contributes in the implementation process.

- i). **The Role of Lecturers in the HBE5.0 Curriculum Implementation Process:** Results in Table 2 above indicate that FGCAL6, PCA, FGCBSRC4 and FGCBL3 highlighted that lecturers are key stakeholders whose roles include planning, lecturing, demonstrating skills, working and supervising students during learning processes. The interviewees’ explanations imply that lecturers are solely responsible for interpreting the Heritage-based Education 5.0 curriculum, deliver lectures and initiate projects in the institution.
- ii). **The Role of Principals in the HBE 5.0 Curriculum Implementation Process:** Interviewees, FGCAL3, PCB, FGCBL8 and FGCBM3 highlighted the roles of the Principals which include mobilisation, deployment and management of human, financial and material resources. Further, the participants indicated that the Principals do

all administrative work for the success of producing goods and services. The participants’ responses suggest that Principals are the overseers of the Heritage-based Education 5.0 curriculum interpretation, lecturing and learning process, initiating projects, production of goods and services and management of resources in the institution.

- iii). **The Role of the Students in the HBE 5.0 Curriculum Implementation Process:** The results in Table 2 reveal that the students’ role is to learn and demonstrate skills as they work in the production of goods and offering of services. Participants, FGCASRC2, FGCAL3 concurred with FGCBSRC4 in separate interview sessions when they highlighted that students have the duty to learn and put theory into practice through initiating projects and they do the most of production of goods in the institution.
- iv). **The Role of Ancillary Staff in the HBE 5.0 Curriculum Implementation Process:** The results in Table 2 indicate that the discussants, FGCACBM4, FGCASRC5, FGCBL3 and FGCBM3 concurred that the ancillary staff assist in cleaning, setting equipment in strategic areas, and perform other basic preparations for practical work to take place. Further, the interviewees

indicated that the ancillary staff also do most of the clerical work, putting in place material resources, and to some extent supply them to specific project areas where they are required.

v). **The Role of the Community in the HBE 5.0 Curriculum Implementation Process:** Results in Table 2 above show that the role of the community in implementing Heritage-based Education 5.0 curriculum include supplying raw materials, providing financial, moral and social support. Further, FGCBCMB3 and FGCASRC2 highlighted that the communities are the consumers of the goods and services. The participants' responses imply that the community is a key stakeholder

in that they are the major clients of HBE 5.0 curriculum-initiated projects.

In a nutshell, the results indicate that Principals, lecturers, students, ancillary staff and the community are key stakeholders directly involved in the implementation of the HBE 5.0 curriculum in tertiary institutions in Zimbabwe.

4.2. Benefits of HBE 5.0 Curriculum in Tertiary Institutions in Zimbabwe

Results in Table 3 indicate responses on the potential benefits of HBE 5.0 curriculum

Table 3: Responses on the benefits of the Heritage-based Education 5.0 curriculum

| Case A: Teachers College | Case B: Polytechnic College |
|---|--|
| PCA: "I thank the government of Zimbabwe for introducing Heritage-based Education 5.0 curriculum in tertiary institutions because we are now producing skilled human capital who are practical and entrepreneurial oriented. So, our benefit and their benefit are self-empowerment." | PCB: "The Heritage-based Education 5.0 curriculum has benefitted the institution. Through its implementation, we have a factory that produces juices commercially using indigenous fruits, we have a group of students and staff who provide a range of services which include plumbing, building, carpentry, electrification, and so on. we get money." |
| FGCASRC1: "As students, our benefits include the acquisition of practical and entrepreneurial skills which enable us to survive in our communities without seeking employment. In fact, we will be able to produce goods for sale and get money. Also, our institution has improved in infrastructure greatly." | FGCBSRC 2: "As students we are the major beneficiaries in the sense that, we acquired survival skills, conducive innovation hubs, we get a share of profits of the products sold, now we are able to pay fees and support our families while we are at college." |
| FGCAL5: "Heritage-based Education 5.0 curriculum is a practical and hands on approach which has a lot of benefits. At this college we produce maize, mealie-meal, we purify cooking oil from sun flower seeds, we make garments and uniforms, in brief, we established business units and both students and staff we benefit from profit sharing." | FGCBL1: "As lecturers, we enjoyed Education 5.0 curriculum fruits. We produce a variety of products with already market and we are hired by different individual people and some big companies where we do some plumbing, carpentry works, making window frames and so on. we get money from all these services we provide to the community." |
| FGCACMB5: "Through the implementation of Heritage-based Education 5.0 curriculum, the college has established and registered companies which are generating money for the institution. The life-styles of staff and students have changed due to the income received and pay themselves as allowances." | FGCBCMB3: "My observation is that the institution has benefitted in terms of infrastructure development as the government has provided grants to construct innovation hubs, workshops, ware houses and the procurement of machinery, equipment and tools for specific goods processing. Thus, infrastructure has greatly improved to match the Education 5.0 curriculum demands." |
| FGCAL3: "A major benefit for the country is that students no longer seek employment after graduation. They become creators of employment and that has reduced unemployment rate." | FGCBSRC 5: "I am happy to say that through Education 5.0 curriculum even before graduation, as students we can create our own jobs. Then after, graduation we become directors of our own companies and employ people from our communities." |
| FGCASRC 4: "Communities have developed infrastructurally due to the gains of Heritage-based Education 5.0 curriculum as people participate directly or indirectly. Some sell raw materials, some provide manual labour and paid, some partner with the institutions, for example contract farming of crops used to process some refined products." | FGCBL3: "In short, we benefitted in terms of profit sharing, creation of jobs, established our own business units, food is surplus in the college and at our homes. We are producing them commercially" |

Key: **FGCAL5** = Focus Group Case A Lecturer 5; **FGCA SRC 4**= Focus Group Case A Student Representative Council member 4; **PCA** = Principal of Case A; **FGCAL3** = Focus Group Case A Lecturer 3; **FGCA CBM 5**: Focus Group Case A College Management Board Member 5; **PCB**= Principal of Case B; **FGCBL1**= Focus Group Case B Lecturer 1; **FGCBSRC2**= Focus Group Case B Student Representative Council Member 2; **FGCBL3**= Focus Group Case B Lecturer 3; **FGCB CMB 7**= Focus Group Case B College Management Board member 7

Benefits refer to positive aspects or gains that are derived from an activity or action (Muzira and Bondai, 2020) [20]. Thus, in the context of this study, benefits refer to any positive aspect or gain to an individual, a group of people or an institution in terms of material, financial, skills acquisition or infrastructure development. Results in Table 3 above indicate some potential benefits gained from the Heritage-based Education 5.0 curriculum implementation presented as the section unfolds.

i). **Skilled Human Capital:** Four of the interviewees, PCA, FGCASRC1, FGCBSRC5 and FGCBSRC2 highlighted that Heritage-based Education 5.0 curriculum implementation equips students with hands on and

entrepreneurial skills. The participants further revealed that tertiary institutions are producing skilled human capital for the nation, region and global village. The results imply that through the Heritage-based Education 5.0 curriculum implementation, the process produces skilled human capital with the ability to produce goods and services after graduation.

ii). **Income Generation:** Results in Table 3 above, show that FGCAL5, FGCACMB5, PCB and FGCBSRC2 indicated that students, lecturers and the institution get some income from the sales of goods and services they produce and provide to individuals, companies and communities, and exports as well. Further, FGCBSRC2 highlighted that

some of the students were able to pay fees for themselves and support their families financially, while they were at college, through profit sharing. The results imply that the tertiary institutions, staff members and students benefit from the income generated from their established business units and hired services they offer.

- iii). **Employment Creation:** In Table 3 above, participants PCA, FGCASRC1, FGCAL3 and FGBCSRC5 indicated that the Heritage-based Education 5.0 curriculum implementation creates employment opportunities for the students and the community. Further, FGBCSRC5 highlighted that, as students, they were able to establish their own business units which produce a variety of hardware and food stuffs in which they are able to employ other youths and young adults from their communities. The findings imply that Heritage-based Education 5.0 curriculum implementation process creates employment opportunities in the country.
- iv). **Infrastructure Investment:** Results in Table 3, indicate that tertiary institutions in Zimbabwe have benefited financially for infrastructure developments in line with Heritage-based Education 5.0 curriculum implementation. FGBCSMB3 and FGCASRC1 highlighted that the government of Zimbabwe disbursed grants to tertiary institutions specifically for the construction of innovation hubs, workshops, warehouses and laboratories. Further, the participants narrated that

tertiary institutions use part of the grants to procure machinery, equipment, tools and materials for use in the production of goods in line with the demands of Heritage-based Education 5.0 curriculum implementation. The findings imply that some tertiary institutions developed their infrastructure to industry level standards.

- v). **Developed Community Infrastructure:** As in Table 3 above, FGCSRC4, FGCAL3 and PCA highlighted that communities develop due to their direct and indirect involvement in the Heritage-based Education 5.0 curriculum implementation process. FGCASRC4 and FGBCSRC5 concurred when they indicated that communities sell raw materials required by institutions to produce goods and get paid when they provide labour to established factories. Further, the participants narrated that in the process of developing infrastructure like boreholes, warehouses, workshops and innovation hubs, they contribute to the community’s infrastructure development.

Overall, the results revealed five potential benefits of the Heritage-based Education 5.0 curriculum implementation that include community infrastructure development, infrastructure investment, employment creation, income generation and skilled human capital.

4.3. The Impact of Heritage-based Education 5.0 Curriculum Implementation among Tertiary Students in Zimbabwe

Table 4: The impact of Heritage-based Education 5.0 curriculum among students in tertiary institutions in Zimbabwe

| The Heritage-based Education 5.0 has impacted students by preparing them to: | Strongly agree | | Agree | | Neutral | | Do not agree | | Strongly do not agree | | Mean | |
|--|----------------|-----------------|--------------|---------------|--------------|--------------|--------------|--------------|-----------------------|--------------|--------|--------|
| | Case A: | Case B | Case A | Case B | Case A | Case B | Case A | Case B | Case A | Case B | Case A | Case B |
| a) Innovate and industrialise | 70 (87.5%) | 100 (83.33%) | 5 (6.25%) | 15 (12.5%) | 2 (2.5%) | 1 (0.83%) | 1 (1.25%) | 2 (1.67%) | 2 (2.5%) | 2 (1.67%) | 3.51 | 3.54 |
| b) Apply theory in real life contexts | 66 (82.5%) | 102 (85%) | 7 (8.75%) | 10 (8.33%) | 1 (1.25%) | 3 (2.5%) | 3 (3.75%) | 3 (2.5%) | 3 (3.75%) | 2 (1.67%) | 3.27 | 3.31 |
| c) Turn ideas into business venture | 72 (90%) | 110 (91.67%) | 6 (7.5%) | 10 (8.33%) | 2 (2.5%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 3.32 | 3.42 |
| d) Produce goods and services | 73 (91.25%) | 108 (90%) | 4 (5%) | 8 (6.67%) | 1 (1.25%) | 1 (0.83%) | 1 (1.25%) | 2 (1.67%) | 1 (1.25%) | 1 (0.83%) | 3.74 | 3.73 |
| e) Become job creators | 75 (93.75%) | 98 (81.67%) | 3 (3.75%) | 12 (10%) | 0 (0%) | 3 (2.5%) | 1 (1.25%) | 4 (3.33%) | 1 (1.25%) | 3 (2.5%) | 3.89 | 3.92 |

Key: Case A= Teachers college; Case B: Polytechnic college
 In order to establish the extent to which Heritage-based Education 5.0 curriculum implementation has positively impacted on students’ life experiences, participants were asked on their level of agreement with five aspects describing how the implementation process has impacted on them. Table 4 above has six items rated on a 5-point Likert scale showing results as discussed below.

- i). **Ability to be Able to Innovate and Industrialise:** On the aspect of innovation and industrialisation, participants in Case A, 6.5% agreed and 87.5 strongly agreed with a mean score of 3.51. On the other hand, Case B participants who agreed were 12.5% and those who strongly agreed were 83.33%. This means that students in

both colleges felt that Heritage-based Education 5.0 curriculum implementation has a very high impact in preparing them to be able to innovate and industrialise significantly.

- ii). **Ability to Apply Theoretical Information in Real Life-Contexts:** Results in Table 4 above show students’ responses on whether they were impacted on the ability to apply concepts in their real-life context. The results showed that Case A, 8.75% agreed and 82.5% strongly agreed with a mean score of 3.27. On the same aspect in Case B, 8.33% agreed and 85% strongly agreed with a mean score of 3.31. The results of the two cases imply that most of the students were prepared by Heritage-based Education 5.0 curriculum implementation process

to be able to apply the theory learnt into practical real-life contexts, by producing goods and services.

- iii). **Ability to Turn Ideas into Business Venture:** On the aspect of turning ideas into business venture, results in Table 4 indicate that in Case A, 7.5% agreed and 90% strongly agreed with mean a score of 3.32. In Case B, 8.33% agreed and 91.67 strongly agreed with a mean score of 3.42 on the same aspect. The results indicate that in both cases, an overwhelming number of students confirmed that Heritage-based Education 5.0 curriculum implementation process prepared them to be able to turn ideas into entrepreneurial entities.
- iv). **Ability to Produce Goods and Services:** Results in Table 4 show that of the participants in Case A, 5% agreed and 91.25% strongly agreed with a mean score of 3.74, while in Case B, 6.6% agreed and 90% strongly agreed that Heritage-based Education 5.0 curriculum implementation prepared them to be able to produce

goods and services which generate income for their upkeep and welfare in general.

- v). **Ability to Become Employment Creators:** On the aspect of being prepared to become job creators than job seekers, results in Table 4 indicate that in Case A, 3.75% agreed and 93.75% strongly agreed with a mean score of 3.39. On the other hand, in Case B, 10% agreed and 81.67% strongly agreed with a mean score of 3.91. The results imply that the students strongly confirmed that Heritage-based Education 5.0 curriculum implementation processes prepared them to become job creators than job seekers after college graduation.

In summary, the results revealed that the implementation of the Heritage-based Education 5.0 curriculum process impact on the students' future life by preparing them to be potential job creators, produce goods and services, turn ideas into business ventures and apply theory learnt into real-life contexts.

4.4. Factors that Constraint the Implementation of Heritage-based Education 5.0 Curriculum in Tertiary Institutions in Zimbabwe

Table 5: Responses on the factors that constraint on the Heritage-based Education 5.0 curriculum implementation

| Case A: Teachers College | Case B: Polytechnic College |
|--|---|
| FGCAL3: "The constraints we face is that of infrastructure which is no appropriate for processing our products. We need funds to construct a shed and mount our equipment." | PCB: "The major constraints include lack of capital for the construction of suitable infrastructure for manufacturing various goods in the college. Currently we are using old existing buildings like aging lecture rooms and sometimes on open spaces." |
| PCA: "So far, we have experienced constraints which include limited financial resources for procuring equipment and also registration of our companies is taking long. They are demanding high requirements as if we are foreign investors." | FGCBL3: "We are constrained by long bureaucracy in the registration of our business units so that we operate legally. We have since stopped production until we are registered." |
| FGCASRC4: "As students, our challenge is time management. We are experiencing limited time to do both production and learning. We are failing to balance the two, work and lectures." | FGCBSRC5: "Limited quantities of local raw materials that constraint mass production of our products, like <i>masawu</i> juices and <i>mawuyu</i> yoghurt. The community is failing to meet the high demand." |
| FGCACBM5: "In our factory, we experience high cost of utilities. The electricity and water bills are too high versus our monthly income. Also load shedding affects our production. Sometimes electricity is restored during the night when we are at our homes." | FGCBL2: "The major factor that constraints is high cost of raw materials, production and utility bills. The profit margin is very slim. Also, space is limited so we are not able to push for high volumes of production so that we realise good profit." |
| FGCASRC1: "A constrain we are facing is of other people who are copying our brand of products. In fact, there is weak enforcement of intellectual property rights. There are also a lot of cheap counterfeit products in the market competing with ours." | FGCBCMB4: "Lack of adequate funding is slowing the implementation process of the Heritage-based Education 5.0 curriculum as some projects need suitable infrastructure, heavy machinery and equipment in order to operate at commercial level. So, some of our projects are stagnant." |
| FGCAL5: "Some lecturers and students are resistant to change. Fear of the unknown. They continue to do things the old ways and these constrain the full implementation of the Heritage-based Education 5.0 curriculum" | FGCSRC 1: "In my view, there is poor orientation of the expectations of Heritage-based Education 5.0 curriculum, the benefits and life opportunities. Some students look confused, they fail to balance their time." |

Key: **FGCAL3** = Focus Group Case A Lecturer 3; **FGCA SRC 4**= Focus Group Case A Student Representative Council member 4; **PCA** = Principal of Case A; **FGCAL5** = Focus Group Case A Lecturer 5; **FGCA CBM 5**: focus Group Case A College Management Board Member 5; **PCB**= Principal of Case B; **FGCBL3**= Focus Group Case B Lecturer 3; **FGCBSRC5**= Focus Group Case B Student Representative Council Member 5; **FGCBL2**= Focus Group Case B Lecturer 2; **FGCB CMB 4**= Focus Group Case B College Management Board member 4; **FGCBSRC1**=Focus Group Case B Student Representative Council member 1

Constraint refers to any factor that limits or derails any process to be done smoothly (Mabika and Maireva, 2022) [13]. In the context of this study, a constraint refers to a tangible or non-tangible factor that hinders the implementation process of Heritage-based Education 5.0 curriculum. Results in Table 5 above show four factors that constraint the implementation process of the Heritage-based Education 5.0 curriculum as presented below.

- i). **Limited Funding:** Results in Table 5, indicate that limited funding experienced in tertiary institutions impede the implementation of Heritage-based Education 5.0 curriculum. The study also showed that initial funding is needed for the construction of appropriate

infrastructure, payment of utility bills and for procuring tools, equipment, machinery and other raw materials. FGCAL3, PCA and FGCBCMB4 highlighted that limited financial resources derail innovation and production activities in tertiary institutions.

- ii). **Time and Bureaucratic Procedures:** FGCASRC4 and FGCBSRC1 indicated that students experience a challenge of time in attending both lectures and working in the established business units. Also, PCA and PCB highlighted that the bureaucratic procedure in the registration of their business units was taking too long hence, constraints the legal production process.

- iii). **Limited Supply of Indigenous Raw Materials:** Results in Table 5 show that unavailability of indigenous raw materials constraints the production of goods in high volumes. FGCBSRC5 and FGCASRC1 concurred when they highlighted that one of the constraints was shortage of indigenous raw materials since the community was failing to meet the demand and supply.
- iv). **Inappropriate Infrastructure:** FGCAL3, PCB and FGCBCMB4 narrated that tertiary institutions were using ordinary aging infrastructure which was not designed for some of the innovations and production currently taking

place in the institutions. Further, they highlighted that some projects need specified infrastructure, machinery and equipment in order to operate at industrial standards level.

All in all, results highlighted in this section showed the factors that constraint the implementation of the Heritage-based Education 5.0 curriculum process which include inappropriate and edging infrastructure, limited supply of raw materials, bureaucratic procedures in the registration of business units, and limited funding.

4.5. Strategies that Enhance the Implementation of Heritage-based Education 5.0 Curriculum in Tertiary Institutions in Zimbabwe

Table 6: Responses on the strategies that enhance Heritage-based Education 5.0 curriculum implementation

| Case A: Teachers College | Case B: Polytechnic College |
|---|---|
| PCA: "In my view, there are several strategies that can enhance the implementation of Heritage-based Education 5.0 curriculum in tertiary institutions but the basic ones are to engage students in a hands-on student-centric and coming up with pragmatic interdisciplinary learning processes." | PCB: "In my view, a hands-on student-centric learning approach enhances the implementation of Heritage-based Education 5.0 curriculum. In fact, our approach should have more practical tasks that are student-centred. The community is key as well, we need to take them on board to enhance the implementation process" |
| FGCAL4: "According to my experience, project-based learning enhances the implementation of Heritage-based Education 5.0 curriculum. In my view, project-based learning provides an opportunity to develop skills such as critical thinking, problem solving and communication. Also, the projects should involve the communities as well." | FGCBL1: "For Heritage-based Education 5.0 curriculum implementation to be successful, the teaching and learning process should be both student-centred and project-based. Also, the learning programmes should embrace interdisciplinary strategy. In fact, project-based strategy develops critical thinking and problem-solving skills among students." |
| FGCASRC5: "In my view, by engaging the community it enhances Heritage-based Education 5.0 curriculum implementation. Thus, the community may assist in providing labour and also the supply of raw materials locally available. I also noted that the community is the major consumer of our goods." | FGCBL3: "In brief, involvement of both students and the community especially in the production of goods enhances the Heritage-based Education 5.0 curriculum implementation process. Further, I think the community support the production cycle by buying the items from the institution." |
| FGCACMB1: "Based on my experience in management, pragmatic interdisciplinary learning and project-based learning may enhance the Heritage-based Education 5.0 curriculum implementation process. In fact, all subject areas should come into play in Heritage-based Education 5.0 curriculum implementation." | FGCBSRC2: "Thinking big by way of collaboration with other institutions in the world and having exchange programmes in areas of specialization improve the Heritage-based Education 5.0 implementation. In short, collaboration is the way to go in this 21 st century. My view is that pragmatic interdisciplinary strategy encourages collaboration, sharing resources, making decisions collectively and also addressing challenges collectively." |
| FGCAL5: "Tertiary institutions should augment the implementation of Heritage-based Education 5.0 curriculum by having collaborations and exchange programmes with other institutions. Also, my opinion is that collaborations facilitate international trade that generates foreign currency for the country." | FGCBCMB5: "From my twenty years of experience in tertiary education, I have realised that both interdisciplinary and practicing hands on strategies enhance teaching and learning process. Hence the same strategies enhance the Heritage-based Education 5.0 curriculum implementation as well, in my view". |

Key: FGCAL4 = Focus Group Case A Lecturer 4; FGCA SRC 5= Focus Group Case A Student Representative Council member 5; PCA = Principal of Case A; FGCAL5 = Focus Group Case A Lecturer 5; FGCA CBM 1: focus Group Case A College Management Board Member 1; PCB= Principal of Case B; FGCBL1= Focus Group Case B Lecturer 1; FGCBSRC2= Focus Group Case B Student Representative Council Member 2; FGCB CMB 5= Focus Group Case B College Management Board member 5

A strategy is defined as a general plan of action to achieve one or more goals (Wuta, 2022) [30]. In the context of this study, a strategy refers to an effective art of plan or approach designed to enhance the implementation of Heritage-based Education 5.0 curriculum. Results on strategies that enhance the implementation of Heritage-based Education 5.0 curriculum in tertiary institutions are presented below with special reference to Table 6 above.

Results in Table 6 indicate that participants PCA, FGCBL1, PCB and FGCBCMB 5 concurred in their views that by engaging students in hands-on student-centric learning processes, it enhances the implementation of Heritage-based Education 5.0 curriculum in tertiary institutions in Zimbabwe. Further, FGCAL4, FGCACMB1, PCB and FGCBL1 highlighted that project-based learning provides students with the opportunity to develop critical thinking, problem solving and communication skills. Thus, the participants' views imply

that the project-based strategy enhances the Heritage-based Education 5.0 curriculum implementation process.

Also, results in Table 6 show that PCA, FGCACMB1, FGCBL1 and FGCBCMB5 concurred that pragmatic interdisciplinary strategy provides an opportunity to combine more various areas of knowledge, subjects and skills to achieve a common goal. Participants FGCACMB1 and FGCBSRC2 further highlighted that pragmatic interdisciplinary strategy promotes team work, collaboration, sharing of resources and collective decision making which enhance the Heritage-based Education 5.0 curriculum implementation process.

As shown in Table 6, results further indicate that FGCASRC5, FGCAL4, FGCBL3 and PCB were of the view that community engagement is paramount in that supply locally available materials, and to some extent provide labour needed in the Heritage-based Education 5.0 curriculum

implementation process. Further, participants FGCASRC5 and FGCBL3 highlighted that the community is a major consumer of goods and services produced by the institution, hence they should be engaged in order to enhance the production cycle.

From the results shown in Table 6, participants FGCAL5 and FGCB SRC2 indicated that collaborations and exchange programmes with other tertiary institutions at various levels provide knowledge cross-pollination that enhances the Heritage-based Education 5.0 curriculum implementation process. The two participants echoed each other that global collaboration facilitate trade and the generation of foreign currency for the country.

Overall results presented above indicate that strategies that enhance the Heritage-based Education 5.0 curriculum implementation process include community engagement, collaboration and interventional exchange programmes, hands-on, pragmatic interdisciplinary, project-based learning processes.

5. Discussion of Findings

Heritage-based Education 5.0 curriculum is anchored on five fundamental pillars which are Teaching, Research, Community engagement, Innovation and Industrialisation. The discussion is centred on the study's established facts on the Heritage-based Education 5.0 curriculum implementation which include, key stakeholders involved in the implementation of the HBE 5.0 curriculum; potential benefits of Heritage-based Education 5.0 curriculum; the positive impact of the Heritage-based Education 5.0 curriculum, the constraints and strategies that enhance the implementation process of the Heritage-based Education 5.0 curriculum.

5.1. Key Stakeholders Involved in the Implementation of HBE5.0 Curriculum in Tertiary Institutions in Zimbabwe

The study established that there are five key stakeholders involved in the HBE5.0 curriculum implementation. This resonates well with Wuta's (2022) [30] findings as discussed below.

- i). **Lecturers:** Firstly, the results revealed that in tertiary institutions, lecturers are key stakeholders directly involved in planning, delivering lectures, demonstrating skills, supervising students, initiating projects in the institutions and communities.
- ii). **Principals:** Secondly, the study indicated that Principals are key stakeholders who are responsible for the mobilisation of human, financial and material resources required for the success of the HBE5.0 curriculum implementation process. It was also revealed that Principals are overseers and supervisors of the HBE5.0 curriculum interpretation, lecturing and learning, innovations, and production of goods and services. In fact, the study established that Principals are the chief accounting officers in tertiary institutions in Zimbabwe.
- iii). **Students:** Thirdly, the results showed that the students are key stakeholders because they are directly involved in the learning, innovations, application of ideas and demonstration of skills, production of goods and services together with their lecturers.
- iv). **Ancillary Staff:** Fourthly, the study revealed that ancillary staff members are key stakeholders who are also involved in the setting and mounting equipment, clerical work, general care of some spaces, provision of materials and labour, where necessary. Further, the study's findings

imply that selected ancillary staff members provide security services to the institution as a whole.

- v). **The Community:** Fifthly, the study also established that the community is an external key stakeholder whose role includes supplying indigenous raw materials, provide financial, moral and social support. It was also revealed that the community is the major consumer of the goods and services produced by the institutions.

5.2. The Benefits of HBE5.0 Curriculum Implementation Process

The findings of the study confirm earlier studies by Fiomumwe (2022) [7] and Murwira (2021) [18] that potential benefits of HBE5.0 curriculum implementation process include the following:

- i). **Skilled Human Capital:** The study established that HBE5.0 curriculum implementation process develops, prepares and equips students with innovative, industrial and entrepreneurial skills. In fact, the study confirmed that the HBE5.0 curriculum produces skilled human capital for the global village.
- ii). **Income Generation:** The results revealed that HBE5.0 curriculum implementation process permits the institution, staff members and students to produce goods and services commercially, which in turn generates income. It also emerged that the generated income assists the students, staff members and the institution to sustain their daily activities and welfare. In fact, the study confirmed that HBE5.0 curriculum implementation has assisted students in tertiary institutions to be able to pay for their tuition fees, and at the same time were able to support their families financially while they were still in college.
- iii). **Employment Creation:** The study revealed that HBE5.0 curriculum implementation process, creates employment for the students, community youths and young adults. It further established that tertiary institutions are empowered to establish and register business units or companies which produce a variety of hardware, food stuffs and provide some services thereby creating employment.
- iv). **Infrastructure Investment:** The study indicated that HBE5.0 curriculum implementation processes invest in infrastructure. It was established that tertiary institutions in Zimbabwe benefit from public funding to some extent, specifically for the construction of innovation hubs, warehouses, laboratories and procurement of machinery.
- v). **Developed Community:** The findings revealed that community involvement in the HBE5.0 curriculum implementation processes in turn assist them financially, that result in the development of their residential areas. It was also established that in rural settings, the community supplies most of the indigenous raw materials available in their areas, thereby generating funds for their day-to-day welfare.

5.3. The Positive Impact of Heritage-based Education (HBE) 5.0 Implementation Process among Students in Tertiary Institutions in Zimbabwe

The study established that the HBE 5.0 curriculum implementation process has positive impact on over 90% of tertiary students in Zimbabwe. Further, the study established that of the 90% of the students confirmed that their life style was positively impacted by being prepared to be able to think critically, innovate, industrialise, turn ideas into business

units, and produce goods and services. Further, the current study resonates with Mabwe and Mabhandu (2023) [14] confirming that after graduation, tertiary graduates in Zimbabwe were able to create employment for themselves and for other community youths and young adults.

5.4. Factors that Constraint in the Implementation of Heritage-based Education 5.0 Curriculum in Tertiary Institutions in Zimbabwe

The findings of this study are in tandem with Lantada (2022) [12] who notes that limited human and financial resources militated against any form of curriculum implementation. In the same vein, this study emerged with four factors that constraint the HBE 5.0 curriculum implementation process in tertiary institutions in Zimbabwe which include the following:

- i). **Limited Funding:** The study indicated that limited funding in tertiary institutions in Zimbabwe derailed the construction of innovation hubs, warehouses, and procurement of suitable tools and equipment for processing the goods at initial stages of the units. It was also revealed by the study that due to lack of funds, some HBE5.0 curriculum related projects became white elephants.
- ii). **Bureaucratic Procedures; and Insufficient Time:** The study showed that students experienced insufficient time to attend lectures and for working in the production units since the timetable is heavily congested, thereby constraining the process. It also emerged that bureaucratic procedures in the registration of new business units and application for quality assurance certification from Standard Association of Zimbabwe (SAZ) delay full operation and flow of production activities.
- iii). **Shortage of Indigenous Raw Materials:** The study further established that shortage of raw materials and delays in supply, hinder mass production of goods at commercial level. The study also noted that the communities engaged in the supply of the raw materials were not satisfying the demands, thereby constraining the production output.
- iv). **Aging and Inappropriate Infrastructure:** The study also revealed that due to aging and inappropriate infrastructure in some tertiary institutions, it slowed down the implementation processes. It was also established that some selected tertiary institutions were using aging existing infrastructure designed for other uses which were not suitable for the current innovations taking place.

5.5. Strategies that Enhance the Implementation of Heritage-based Education 5.0 Curriculum

The study’s findings emerged with the following pedagogical strategies that enhance the Heritage-based Education 5.0 curriculum implementation process:

- i). **Hands on Student-Centric Learning:** The strategy involves all students’ senses, application of new and existing knowledge in their real-life contexts, involves students in practical activities, problem solving and production of goods and services.
- ii). **Pragmatic Interdisciplinary Programmes.** The pedagogy strategy engages students in experiments, innovations, investigations, reflections on practical applications and production of goods.
- iii). **Project-based Learning:** The strategy is oriented towards the production of goods and services,

improvement of autonomy among students, integration of knowledge and skills, preparation of students for real-world experiences and fostering reasoning.

- iv). **Community Engagement:** Community engagement as a strategy, prepares students for post-graduation experiences, connects students with real-world settings and improves community partnerships.
- v). **Collaborations:** The approach assists tertiary institutions to leverage each other’s resources, exposes students to diverse perspectives, develops team building skills, incorporates peer-assessment and exposes students to international experiences.

The results of this study’s results confirm assertions by Viennet and Pont (2021) [31] that hands on, project based and pragmatic approaches are accommodative, flexible, result oriented and equip students with knowledge and skills, enhance the implementation of HBE 5.0 curriculum in tertiary institutions. It is against these fundamental strategies that a five-steps pedagogical strategic-ladder model was developed as illustrated diagrammatically in Figure 1 below.

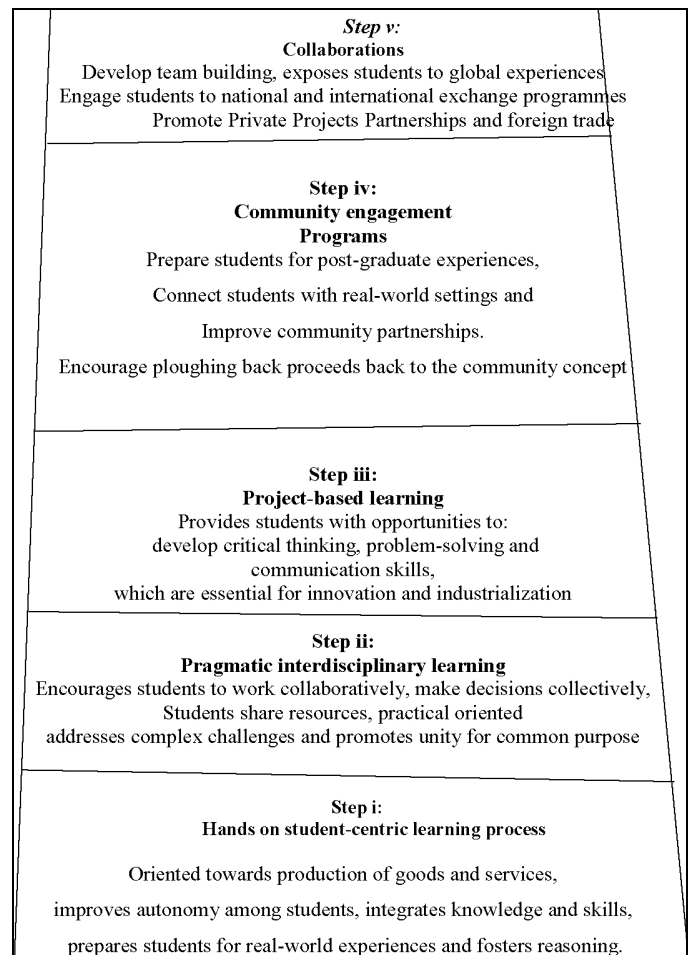


Fig 1: Five-step pedagogical-strategic-ladder model

Figure 1 above illustrates a Five-step pedagogical-strategic-ladder model with methodical strategic approaches that enhance the Heritage-based Education 5.0 curriculum implementation process.

Overall, the study emerged with a Five-step pedagogical-strategic-ladder model that subscribes to community engagement programs and collaborations, hands on student-centric, pragmatic interdisciplinary, project-based learning processes.

6. Conclusions and Recommendations

Based on the major findings of the study, the following conclusions and recommendations were established:

- i). Firstly, the study concluded that key stakeholders involved in the implementation of HBE 5.0 curriculum include Principals, lecturers, students, community and ancillary staff, each with distinct roles.
- ii). Secondly, it was also established that HBE 5.0 curriculum implementation process has the potential to come up with benefits which include, skilled human capital, income generation, infrastructure investment, employment creation, improved economic and social life of the communities.
- iii). Thirdly, the study revealed the factors that constraint the HBE 5.0 curriculum implementation process which include limited funding, bureaucratic procedures, shortage of raw materials, inappropriate infrastructure, shortage of tools and equipment for production processes.
- iv). Fourthly, it also emerged that the HBE 5.0 curriculum implementation process positively impacted on students' life style while they were at college and after graduation, as they were prepared to be able to think critically, innovate, become entrepreneurs and employment creators.
- v). Fifthly, the study further established pedagogical strategies that enhance the HBE 5.0 implementation process which are hands-on student-centric learning, pragmatic interdisciplinary learning, project-based learning and community involvement.

Based on the study's conclusions, a Five-step pedagogical-strategic-ladder model was developed as illustrated on Figure 1. Further, the study recommends a holistic approach in the implementation of the Heritage-based Education 5.0 curriculum in endeavour to contribute significantly to the achievement of becoming upper middle-income economy in Zimbabwe by 2030.

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