



## Review Article

Volume-04|Issue-11|2023

## Re-thinking the Zimbabwean Higher and Tertiary Education Curriculum Terrain: Challenges and Opportunities

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## Article History

Received: 29.09.2023

Accepted: 05.10.2023

Published: 23.11.2023

## Citation

Dingindawo, N., Trenance, K. (2023). Re-thinking the Zimbabwean Higher and Tertiary Education Curriculum Terrain: Challenges and Opportunities. *Indiana Journal of Humanities and Social Sciences*, 4(11), 21-30.

**Abstract:** This study interrogates opportunities available for the robust Education 5.0 curriculum design and the challenges encountered in its implementation with a view to proffering strategies for its smooth take-off and sustainable growth, development and success. The Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development (MHTEISTD) is rolling out this curriculum innovation in its institutions in an effort to meet the current industrial needs of the Zimbabwean upper-middle-income economy. This paper also evaluates the state of preparedness by different stakeholders in embracing the philosophy. A phenomenological research design and a qualitative method were adopted and used in executing this study. A total of 12 lecturers from one teacher's college and one university in Matabeleland South Province were purposively sampled and data were generated through semi-structured questionnaires and interviews. The study participants acknowledged that tertiary education institutions are faced with an acute shortage of material, financial, technological and human resources to adequately implement Education 5.0. Based on these acute shortages, lecturers indicated their lack of preparedness in implementing the curriculum innovation. Participants however indicated that the nature of the heritage-based framework has great potential to transform the Zimbabwean economy to an upper-middle income by 2030, its greatest strength being its ability to stimulate learner creativity for the invention and adoption of new and relevant technologies in local environments. Technological innovations have resulted in the establishment of mini industries (innovation hubs) at various institutions of higher learning. The study recommends that the government of Zimbabwe through relevant ministries provides the necessary resources and adequately capacitates the human resource to curb the implementation hurdle and successfully implement the noble curriculum reform.

**Keywords:** Education 5.0, higher and tertiary education, implementation, transformation, challenges, opportunities

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## INTRODUCTION AND BACKGROUND

A functional education system should be periodically reformed, reviewed or innovated to achieve transformation in tandem with shifting societal needs, demands and expectations. At independence in 1980, Zimbabwe inherited a colonial education system whose objective was to produce African graduates at all levels devoid of entrepreneurial skills rendering them job seekers at the expense of job creation. At higher and tertiary education levels, colonial education was anchored on three pillars namely teaching, research and community service hence education 3.0. Murwira, cited in Wuta (2022) comments thus; by design Education 3.0 produces a worker, not a person that produces goods and services. This is a colonial design which served its purpose and cannot be used by a nation that wishes to industrialise. Education 3.0 was modelled in the white supremacist philosophy meant to produce a disposed worker liable to be fed into the productive sector owned by the colonial system. The National Skills Audit conducted by the MHTEISTD in 2017 bears testimony to this as it showed that although Zimbabwe boasts of over 95% literacy rate, the critical skills availability is 38% (Tagwira 2018) thus demonstrating a dearth of increased critical skills development.

Due to the ever-rising unemployment and failing economy in the neo-colonial era, a new educational thrust had to be found to jump-start economic development in Zimbabwe. One transformation move that has occurred in curricula in Zimbabwe is the Education 5.0 thrust in higher and tertiary education. With the changing dynamics in the global arena and with the Fourth Industrial Revolution (4IR), which requires a different set of skills, the trajectory of education that was being pursued in the higher education sector in Zimbabwe has been falling far short of the expected standard, particularly in light of the global problems that graduates are expected to deal with at a personal and collective level (Mpofu *et al.*, 2022). In response to the new needs and dictates of the 4IR concomitant with the African Union's Agenda 2063 (The Africa We Want), Agenda 2030 and the SDGs, espoused by the United Nations with a broad plan of the socio-economic transformation of societies, higher and tertiary education in Zimbabwe is being aligned to these dictates and has thus espoused the transformation of curricula so that it can foster key competencies and skills in graduates which will enable them to respond to the needs of their local societies and the country in general (Mpofu, *et al.*, 2022).

This new thrust saw the birth of a new curriculum named Education 5.0, which according to Muzira and Bondai (2020) focuses on five pillars which are: research, teaching, community service, innovation and industrialisation. The curriculum shifted from preparing students for white and blue-collar jobs to preparing them for job creation by using generated knowledge. It is envisaged that instead of employee-oriented graduates, employer-oriented graduates will be produced. The creation of goods and services is the major thrust for Education 5.0. The MHEISTD is therefore seized with this five-pronged curriculum implementation strategy aimed at producing goods and services for the nation in order to achieve an upper middle-class economy by 2030. This study specifically focuses on a higher and tertiary education institution, namely a teacher training institution and a university in Matabeleland South Province, with a view to interrogating the challenges they are facing against the opportunities espoused by the new and invigorated curriculum transformation.

### **Statement of The Problem**

The government of Zimbabwe under the Second Republic is implementing a curriculum reform in higher and tertiary education institutions whose overall goal is to industrialise the economy to achieve an upper-middle income economy through Education 5.0, a heritage-based curriculum. Its five pillars are research, teaching, community service, innovation and industrialisation. This study intends to assess the opportunities created by this curriculum model and challenges being encountered by the implementing agents in two selected higher and tertiary institutions to proffer recommendations to solve the challenges encountered by implementing agencies and agents.

## **REVIEWING RELATED LITERATURE**

Curriculum reform in education is a worldwide-practised phenomenon that periodically occurs in an effort to strive for best educational practices, primarily with the demands of the twenty-first-century knowledge economy in mind (Cheptoo and Ramadas 2019). Coincidentally, curriculum reforms in most African nations adopted the content or knowledge-based approach which eventually proved an unsuitable curriculum for most countries because its products were rather too academic and lacked the skills and knowledge application required by the demands of the workplace. A study by Wongnaa and Boachie (2018) confirmed the skill deficiency in graduates from institutions of higher learning to the job market and that requisite skills required by industry and those acquired from university appeared substandard when viewed against the competencies required for the performance of the job.

Currently, due to technological advancement, most countries which include Kenya, Rwanda,

Cameroon and Tanzania among others, have opted for a competency-based curriculum (CBC), which seems to have the potential to offer skills that match the requirements of the industry. Cheptoo and Ramadas further expound that the adoption of CBC in most African countries is a modification of a similar framework from the developed countries. The need to increase the skills level of the students who are the future workforce and job creators to support industrial fertility, therefore, becomes critical, thus responding to both national and global unemployment challenges. The Education 5.0 heritage-based curriculum is therefore situated in this context. The current trend is that the needs of the industry seem to determine the course and nature of curriculum transformation in general.

Sanga (2012) concurs that universities worldwide are transforming and consolidating aspects like teaching, research and innovation, information and communication technology application to ensure that they produce graduates who are well-equipped to tap global knowledge resources and apply their education to support local and regional development. Murwira asserts that “An education without technological innovations leads to poverty”. In other words, for meaningful national development to occur, education has to move hand in glove with technology and human capital to meet such a vision is a prerequisite. Instead of solely certifying students with academic degrees and titles, the ultimate goal of higher education should be to provide benefits to society by training innovative, informed, and responsive workers who also possess cultural tolerance and understanding (Nguyen, 2017). In the same vein, Ezeanya-Esiobu (2019) concurs that innovation in science and technology remains a driving force in determining the rate of national economic growth. Over and above, higher education must be able to produce, through innovation in science and technology, skilled graduates or job creators who will solve the unemployment and socio-economic crises facing Africa.

The advent of the Fourth Industrial Revolution has also necessitated that universities and higher education institutions become key players in producing a relevant labour force and entrepreneurs who will have a significant contribution to socio-economic development (Postiglione, 2020). Because of rapid technological developments, the landscape of skills and employment around the world keeps changing thus exerting pressure on educational institutions to quickly adapt and adopt innovative strategies so that higher and tertiary education remains efficient and relevant. In Sanga’s (2011) view, higher education contributes to socioeconomic development through the production of a highly skilled workforce, increasing labour mobility, facilitating the labour force’s capacity to absorb new technology, knowledge, and skills, removing socio-cultural barriers to development, and promoting entrepreneurship. Higher and tertiary education graduates in general, have the

potential and are better placed to meaningfully apply new technologies in various sectors of the economy.

Mukhwana, Kande and Too (2017) further state that because of this dire need, several universities have established innovation centres, and incubation hubs, and are building sustainable university-industry linkages. Similarly, Zimbabwe has established innovation hubs and technology parks at various institutions to find solutions to the country's pressing problems as well as attain the country's economic blueprint, the National Development Strategy 1 (Gora, 2021). One of the major goals is to create economic opportunities by developing a new generation of young people with an entrepreneurial mindset. To further this goal, in 2021, the Zimbabwean Parliament passed the Centre for Education, Innovation, Research and Development (CEIRD) bill into law with the aim of creating a technology hub to harness and coordinate research and innovation in universities and colleges, as well as in industry. This is a milestone towards surmounting some of the country's greatest socio-economic impediments.

## METHODOLOGY

A qualitative approach was employed in executing this study as it is suitable and convenient for uncovering trends in thoughts and perceptions. The phenomenological research design fits well with the qualitative approach in that there is no attempt to manipulate the participants or the environment, instead, data is generated from a natural environment within the natural setting of the participants. The phenomenological design seeks to understand and describe the universal essence of phenomena or lived experiences of people. It focuses on studying the phenomena that have impacted individuals and what they have in common as they experience the phenomena. This design highlights the specifics and identifies a phenomenon as perceived by an individual in a situation. It can also be used to study the commonality in the behaviours of a group of people (Harappa, 2021). The design was found suitable to study the lived experiences and perspectives regarding the introduction and implementation of the Education 5.0 philosophy in higher and tertiary education, particularly focusing on the opportunities and challenges of the curriculum change.

A variety of methods can be used in phenomenological-based research, including interviews, conversations, participant observation, action research, focus meetings and analysis of personal texts. If there is a general principle involved, it is that of minimum structure and maximum depth, in practice constrained by time and opportunities to strike a balance between keeping a focus on the research issues and avoiding undue influence by the researcher (Lester, 1999). The target population of the study were lecturers from one university and one teacher's college situated in Matabeleland South both belonging to the Ministry of Higher and Tertiary Education, Innovation, Science and

Technology Development responsible for implementing the education 5.0 philosophy. The lecturers of the two aforesaid institutions, as implementers, were assumed to have the knowledge and information on the opportunities and challenges of the implementation of the education 5.0 curriculum hence their inclusion in the study.

The study employed the purposive sampling procedure. Tichapondwa (2013) posits that the primary consideration in purposive sampling is the researcher's judgment as to who can provide the best information to achieve the objectives of the study. The researcher only goes to those people who in his/her opinion, are likely to have the required information and will be willing to share it. Six participants were sampled from each institution in order to cross-pollinate the ideas from the two educational institutions on the opportunities and challenges of implementing the Education 5.0 curriculum. Data were generated through semi-structured questionnaires and interviews with experienced lecturers from the two selected institutions in order to answer the research questions for the study. The semi-structured instruments had both structured and unstructured questions and this allowed the researchers to explore participants' perceptions and feelings regarding opportunities and challenges in the implementation of the Education 5.0 heritage-based curriculum. In this article, a thematic analysis was employed, that is, data were analysed descriptively using patterns and themes that emerged from the data sources and conclusions were then drawn.

In carrying out this research, the protection of the interests and rights of the participants was ensured (Leedy and Ormrod 2010). The researchers took their time to explain the aims and focus of the research to the participants and that their participation was purely voluntary. The identity of the respondents was concealed through the use of codes instead of their actual names, thus achieving anonymity and confidentiality of participants and data respectively.

## Conceptualising and Operationalisation of Education 5.0

According to Vision 2030, Zimbabwe must attain and even exceed an upper middle-income economy by then. To achieve the national strategic intent, the Ministry draws its mandate from Section 13 of the Constitution of Zimbabwe which aims to (a) foster agricultural, commercial, industrial, technological and scientific development as well as (c) foster the development of individual and commercial enterprises in order to empower Zimbabwean citizens. To attain these, the type of education the Ministry offers should transform so that it addresses the needs of industry and at the same time be informed by human needs. To deliver a competitive, industrialised and modernised Zimbabwe, the Ministry has adopted two additional missions, that is, innovation and industrialisation effectively reorienting

Education 3.0 to Education 5.0 as presented by Professor Tagwira at the 2018 Student Academic Freedom Regional Advocacy meeting at Africa University. He further expounded that the Government of Zimbabwe's vision of Education 5.0 entails that graduates from Tertiary Education Institutions (TEIs) be equipped with skills that empower them to become innovative towards societal development through transformative science and technological knowledge application that delivers goods and services.

The Education 5.0 heritage-based curriculum is restructuring the higher and tertiary education sector towards active practical involvement by both the learner and the community leading to self-sustenance and national development. Education 5.0 has transformative and developmental functions in addition to the traditional functions, that is, to innovate and industrialise through the production of goods and services in innovation hubs. In the same vein, Ncube (2020) posits that Doctrine 5.0 is a new model of education in Zimbabwe's higher institutions. Unlike Model 3.0., Education 5.0 makes the addition of two more pillars to the education system that make it possible to innovate and industrialise the economy through the promotion of the production of goods and services. Broadly speaking, innovation generally entails the idea of doing new things, it is the whole process of renewing, changing, transforming or subsequently creating more efficient and effective means, products, processes or ways of doing things (Ezeanya-Esiobu 2019).

According to Jonathan cited in Ncube (2019), the model is an outcome-focused education for problem-solving and value-creation set to make Zimbabwe competitive, modern and industrialised. Murwira (2019) asserts that the country's education needed systems of capturing brains and using talent usefully to market Zimbabwe as the go-to place of education. He further notes that the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development has built innovation hubs in all universities as platforms for the confluence of government, students and organisations. The philosophy, which is heritage-based, aims to cultivate students' entrepreneurial abilities for the development of industries as a way of addressing socio-economic developmental difficulties. Among other benefits, the philosophy also aims at lowering unemployment and increasing foreign currency exports for the country as well as helping to solve various societal aberrant behaviours associated with poverty and unemployment, such as armed robbery or drug misuse (Muzira cited in Maringehosi 2020).

The emphasis of Education 5.0 is that the philosophy is human-driven, capturing human qualities for the individual and society hence it is anchored on identifying skills and roles that are best fulfilled by humans. For example, those related to innovativeness, creativity, critical thinking, analytical skills, design and

compassion as well as cultivating these. In this context, not only market/company needs (employability) are considered but also societal and learner's needs thus offering 'big-picture education, keeping in mind the bigger picture of how the educational offer fits into the overall learning trajectory, labour market and developments in the world (Dervojeda, 2021).

Dziva and Postma (2020) argue that Education 5.0 is meant to turn around the challenging economic and technological deficits of Zimbabwe, hence higher and tertiary education must now produce graduates who can think scientifically and analyse problems objectively. It develops human capital that can apply the repository of knowledge to produce contextualised technological innovations for the industry. The heritage-based nature of the curriculum guides the new education policy by utilising indigenous resources to solve indigenous problems (ibid), hence both the human capital and mineral resources are the basic and strategic anchors of the Education 5.0 curriculum. If successfully implemented, the philosophy is likely to result in the preservation of cultural heritage which is a vital resource.

For the successful operationalisation and implementation, the Education 5.0 philosophy has to be anchored on clearly laid down procedures to be followed by the programme implementers (Jabri, 2012). Muzira and Bondai (2020) explain that the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development has suggested four critical steps namely: programme infrastructure, promotion infrastructure, physical infrastructure and financing infrastructure. In brief, these steps encompass consultations among key stakeholders such as curriculum specialists, educators, students and industry on policy issues, curriculum design and implementation. The training, orientation and promotion of staff as change agents, financing mechanisms and partnerships are also critical and finally, the pedagogical needs of lecturers and students such as interactive boards, projectors, computers and internet connectivity to facilitate research and development of scientific ideas into goods and services.

A well-balanced and sustainable mix of the above steps is likely to produce good and desired results. With these glorious and well-articulated steps to achieve the Education 5.0 philosophy, this study interrogates challenges and opportunities around the implementation of such a curriculum as well as its prospects in achieving an upper-middle-income economy by 2030.

### Findings

The study findings are presented below in the context of the study focus as indicated in the earlier sections of the study. The findings are derived from a cross-section of selected college and university lecturers chosen through purposive sampling. The findings are

presented qualitatively in excerpts from the participants followed by a discussion.

*Lecturers' understanding of the Education 5.0 philosophy in comparison to Education 3.0*

The study participants showed a good theoretical grasp of the differences between the two curricula designs. They generally agreed that Education 5.0 has two more features added to it, that is, innovation and industrialisation which are meant to make the production of goods and services possible. They also articulated that it is practically oriented compared to the previous model, 3.0. Participants demonstrated a clear understanding and correctly enumerated its pillars as teaching, research, industrialisation, innovation and community engagement. Below are a few excerpts demonstrating participants' understanding of the concept;

*Education 5.0 is a transformational model that is meant to modernise conduct in tertiary institutions. In addition to the three pillars of Education 3.0, the Education 5.0 curriculum has industrialisation and innovation pillars, this is how these two differ.*

Similarly, another participant added;

*Education 5.0 now includes the practical orientation to the Education 3.0 curriculum. It tries to stimulate learners to be creative in order to invent and adopt new relevant technologies in our local environments.*

Although the differences between the 5.0 and the 3.0 model were clearly articulated, study participants believe that the lecturers in colleges and universities do not fully understand the education 5.0 philosophy, they indicated that there are misconceptions regarding its conceptualisation, some of their responses are outlined below:

*Generally, there are problems with its conceptualisation even by administrators who are introducing it to lecturers causing attitude problems, for example, the aspect of goods and services is always misconstrued to say all subjects must produce tangible products which is not really possible for a service ministry like teaching. Teaching should be an incubation ministry in which minds are sharpened and provoked to be creative. This creativity and innovation cannot be segmented into subject areas like is the thrust in colleges..., although it is a noble initiative.*

Participants explained that conceptualisation challenges emanate from a lack of clear-cut policy documents to guide administrators, staff and learners on

what each level is supposed to do, resulting in negative attitudes and confusion during implementation.

*Challenges faced by higher and tertiary education institutions in implementing Education 5.0*

Participants admitted that higher and tertiary education institutions face multifaceted challenges in the implementation of the education 5.0 heritage-based curriculum. Challenges enumerated by participants include shortage of both material and human resources, capacity deficiency for teaching people, lack of expertise, among implementers, unavailability of assistive infrastructure and devices, lack of technological know-how, an environment which is not enabling and unqualified personnel to assist in the implementation process. Implementation is hampered by, poor learning facilities, lack of funding for education 5.0, inadequate information communication technology resources, lack of understanding of the new philosophy concept, low remuneration, negative attitudes of both learners and educators, lack of supporting documents such as policy documents and syllabi. Participants felt that if these are not urgently attended to, implementation of the noble initiative may be a serious struggle.

One participant elaborated on the issue of human-related factors below;

*The implementation of Education 5.0 is hampered by human-related factors such as low motivation, staff morale is very low due to the peanuts in terms of salaries, consequently, any normal-minded person would find it necessary to direct their energies in fending for themselves rather than spend time engaged in programmes of an ungrateful employer who doesn't care to reward employees' salaries commensurate with their investment in their profession.*

The concept is not fully understood, resources are hardly available even to the skilled while the demand is just that people should produce. According to some respondents, facilitators of the Education 5.0 curriculum also demand that employees engage in productive activity with neither skill nor resources, this makes them feel they are being used and made to kick a metal ball.

*Ways that can be used to mitigate the identified challenges*

The study participants outlined several measures to be undertaken to minimise the challenges associated with the implementation of the education 5.0 heritage-based curriculum. The suggested solutions are detailed below:

*The powers that be must provide resources necessary for the implementation process,*

*provide funding and material resources and raise more awareness among implementers and state the Education 5.0 objectives and its potential. There is also a need for capacity-building programmes to capacitate institutions with the infrastructure necessary for the new thrust and the orientation of the human capital in order to make the implementation process as smooth and as swift as possible.*

*The government of Zimbabwe must provide the necessary resources for employees to perform, provide clear policy documents to direct implementation and motivate employees so they see value in the new philosophy.*

In addition to the above, respondents expressed that there is a need for packaging the product in clear terms so that there is universal acceptance of the philosophy. The new philosophy should include elements of the 5.0 in the primary, secondary and higher and tertiary education syllabi to enable continuity up the different ladders of education in Zimbabwe. According to participants' views, it is also necessary for the Government to reach out as well as to provide guidelines in the form of a summarised guiding document so that stakeholders are properly inducted and prepared for the implementation process. Another key factor raised by lecturers was the need to source funding to make it possible to enable the procurement of the necessary requirements and resources as well as the running of countrywide training workshops in readiness for the implementation of the noble philosophy. Respondents emphasised the need to thoroughly capacitate and equip all stakeholders to get rid of ignorance and frustration which may flop the implementation process. Performance incentives were also suggested as a good gesture and initiative for cultivating positive attitudes, motivating both staff and students as well as providing moral support so that key implementers have a buy-in in the implementation process.

*The potential of Education 5.0 in achieving the Upper middle-income economy by 2030*

The participants agreed that the model has a huge potential to achieve the upper middle-income economy in Zimbabwe by 2030 by virtue of being participatory in nature and involving institutions of learning in industrialisation. One respondent expressed:

*This is an appropriate transformative educational model made to modernise and capacitate the tertiary institutions to enable them to produce fully baked graduates capable of making a change in the Zimbabwean economy by 2030.*

Another one expressed;

*This model of education focuses on transforming the higher and tertiary education*

*system based on the country's heritage and the country's needs of producing goods and services hence it has great potential to transform the country's economy to an upper-middle-income economy by 2030.*

Participants generally agreed that the 5.0 philosophy has great potential of transforming the Zimbabwean economy by 2030 especially if the identified challenges are addressed. The main strength of the philosophy is that it is skills-oriented and focuses on the innovative production of goods and services as well as industrialisation. They expressed that it has the potential of transforming education in line with the country's needs by enabling and resulting in self-employment and self-reliance. Small business units, start-ups and industrial parks can eventually bring hope for the revival of industries in Zimbabwe. This way, the unemployment crisis facing the country is likely to be greatly reduced.

*The level of preparedness of higher and tertiary education institutions*

The study participants are doubtful about the level of preparedness for higher and tertiary education institutions to implement the Education 5.0 curriculum. This is what they said about the level of preparedness of educational institutions in implementing the Education 5.0 curriculum:

*There is very limited preparedness if any, in most cases, there is no preparedness at all due to lack of funding, no infrastructure, no motivation among staff members, no orientation among staff members and no supporting materials. It's more of lip service than what should be actually done to make the curriculum transformative.*

Another participant expressed that:

*Institutions are not fully prepared, as it is, it's just 'talk' about Education 5.0 in the media yet the Ministry should have first and foremost seen to it that staff is relevantly and adequately resourced so as to implement the Education 5.0 curriculum. The staff does not have the necessary skills and infrastructure to implement the curriculum, there is actually more talk than equipping the institutions for this innovative and noble curriculum.*

The majority of respondents expressed that institutions of higher and tertiary institutions were not prepared especially noting the challenges enumerated in this paper. Lecturers still do their business as usual using old syllabi and methods hoping to achieve knowledge and skills. One of the respondents raised her concern that the people spearheading the change are the old guard

whose appreciation of technology and new ideas is compromised and this may seriously cripple the implementation stage. Expressing the opinion that lecturers were not ready and adequately equipped to embrace the new philosophy, one respondent indicated that the Ministry should have ensured that staff is relevantly and adequately resourced so that they do not become strangers to the noble curriculum reform. Unless the enumerated challenges are resolved, higher and tertiary institutions will not be prepared to embrace the Education 5.0 curriculum meaningfully because skills, resources and infrastructure are critical determinants of successful implementation.

However, a few expressed that higher and tertiary education institutions were getting prepared because they were beginning to ‘play positive’ and seemed to understand it is the vision that determines the ministry mission of which they are part. Their understanding was that they stand to benefit from the innovations.

*The preconditions for successful implementation*

An array of pre-conditions for the successful implementation of the education 5.0 curriculum were outlined. One participant expressed;

*The MHTEISTD should provide resources to support implementation and educate the Education 5.0 curriculum implementers so that they are fully conversant with the policy initiatives and details and that the Ministry must engage skilled personnel to implement the curriculum. The government of Zimbabwe must provide budgetary support by creating public-private partnerships (PPPs) for funding implementation, training implementers and other stakeholders through workshops so as to instil positive attitudes in them and to create research hubs and incubation centres.*

Another expressed;

*The Ministry should promote the understanding of the Education 5.0 concept by lecturers and provide adequate resource material for learners to promote research, provide the appropriate and relevant guidelines on the assessment models and undertake a comprehensive induction programme for the lecturers to promote smooth implementation of the Education 5.0 philosophy.*

For the successful implementation of the philosophy, lecturers stated conditions that need to be met. Among them were: ensuring the correct conceptualisation of the Education 5.0 philosophy so that implementers are fully knowledgeable thus facilitating a

buy-in by all stakeholders; establishing a supportive teaching and learning culture for institutions to fulfil their Education 5.0 mandate; ensuring government budgetary support; revamping the old curriculum to include all the five pillars of the philosophy; motivating both staff and learners to eradicate negative attitudes and the 3.0 philosophy mentality; deliberately creating a reward system as a means of incentivising and motivating performers; and designing appropriate evaluation instruments so that formative evaluation can be done at the different stages of the implementation process were cited as preconditions of successful curriculum reform.

In addition to the above, a positive attitude towards the philosophy by both students and lecturers; capacity building of key stakeholders; a change of mindset on the part of implementers; creating public-private-partnerships (PPPs) for funding; creating research innovation hubs and incubation centres; having skilled implementers; providing the necessary human and financial resources were also listed as key success factors for curriculum implementation. Members reiterated that a participatory approach involving all stakeholders including those in disadvantaged communities should be employed so that the President's mantra of ‘leaving no one and no place behind’ can be realised. The provision of these will ensure the creation of an environment conducive to innovation.

*The role of MoPSE in the successful implementation of Education 5.0*

The participants agreed that the Ministry of Primary and Secondary Education has a key and preparatory role for learners so that the transition from one ministry to the other is successfully managed. This is what one participant highlighted:

*For successful implementation, this transformational model has to be firmly established in the sister ministry first, that is, the Ministry of Primary and Secondary Education so that when learners eventually get to tertiary education, they are not lost but only further extend their knowledge on the philosophy.*

Another added that,

*MoPSE should put in place proper infrastructure and financial resources to lay a firm foundation for successful implementation in order to nurture creativity, scientific inquiry and entrepreneurial skills among learners because these are prerequisites in the provision of goods and services at the tertiary level. The Ministry should have curricula that are aligned with the sister ministries and create a free atmosphere where learners are not frog-marched from one level of education to another*

*but are smoothly shepherded thus allowing them some degree of freedom as well as thinking outside the box.*

Participants indicated that the MoPSE plays a critical role in the implementation of the Education 5.0 philosophy, they expressed that it is the co-implementer together with the Ministry of Higher and Tertiary Education, Science, Innovation and Technology Development. The active involvement of MoPSE as a sister ministry responsible for laying a firm foundation for the transformational model and harmonising the MHTEISTD and MoPSE curricula were also cited as core in the successful implementation of the philosophy. Schools are directly involved and hence can assist by laying a firm foundation for the 5.0 philosophy. For this reason, MoPSE should be considered a key stakeholder because it is the one that feeds into higher and tertiary education.

Another participant expressed;

*if there has to be any success, there is a need to synchronise curricula (MoPSE and Higher and Tertiary Education), this should not be rushed but should be done step by step for a considerable period. This will allow for genuine early nurturing of scientific, creative, and other requisite skills.*

In other words, the two ministries should complement one another in developing a versatile, innovative and industrious product, the learner.

## DISCUSSION

The participants revealed a good theoretical knowledge of the Education 5.0 curriculum innovation in comparison to Education 3.0 which largely produced job seekers while Education 5.0 aims to produce job creators thus stimulating economic growth. Education 5.0, a heritage-based programme that aims to cultivate students' entrepreneurial abilities for the development of industries, is being developed in Zimbabwe to address socio-economic developmental difficulties. It is aimed at addressing unemployment and increasing foreign currency exports for the country, as well as helping to solve various societal aberrant behaviours associated with poverty and unemployment, such as armed robbery or drug misuse (Maringehosi 2020). Lecturers, however, do not seem to have the practical or lived experiences of the innovation making implementation difficult if not impossible as they lack the practical application of the philosophy. Derojeda (2021) argues that Education 5.0 is not solely about technology or scientific development but it's about preparing intellectually, socially and emotionally strong individuals, mindful of their health and personal development, as a general purpose, to start with. It is then followed by the appropriate strategic, methodological and pedagogical approaches to successfully implement it. As long as lecturers and

administrators (change agents) do not have the practical knowledge and experience of the new curriculum innovation, successful implementation is not guaranteed.

The study participants revealed that tertiary institutions lacked readiness in terms of kick-starting the implementation due to a lack of financial and material resources, low personnel motivation, lack of supportive infrastructure and lack of practical orientation among the human resource. Cunningham (2018) stresses the point that a new curriculum will go nowhere unless serving, as well as future, teachers are oriented, trained and supported to be able to teach it. Instructional materials (textbooks, teachers' guides and other resources etc.) need to be developed and put in place before the new curriculum is introduced.

Participants also reiterated the steps necessary for successful implementation as outlined by Muzira and Bondai (2020) and these include programme infrastructure, promotion infrastructure, physical infrastructure and financing infrastructure. In brief, these steps encompass consultations among key stakeholders such as curriculum specialists, educators, students and industry on policy issues, curriculum design and implementation. In line with the above point, UNICEF 2018 advises that a considerable amount of initial time and resources devoted to considering the readiness of the system to accommodate the required change is essential. In other words, the time factor is crucial to prepare key stakeholders so that they are able to adapt to the required change. Training, orientation and promotion of staff as change agents, financing mechanisms and partnerships to be considered and finally the pedagogical needs of lecturers and students such as interactive boards, projectors, computers and internet connectivity to facilitate research and development of scientific ideas into goods and services.

The Ministry of Primary and Secondary Education (MoPSE) is considered very crucial in aligning its curricula with 5.0, this alignment may provide a firm foundation for transitioning to higher and tertiary levels hence paving the way for a smooth and sustained continuity. Wuta (2020) confirms the state of affairs between the two education ministries, he indicates that in principle, they are supposed to operate in unison but the direct reverse is true of them. He alleges that they are, to a larger extent, disengaged and compartmentalised. UNICEF (2018) buttresses the same point that successful curriculum reform requires concurrent changes across the entire education system. MoPSE and the MHTEISTD should move hand in glove when it comes to curriculum development, curriculum implementation and curriculum change. Wuta further observes that Education 5.0 is dissociated from Zimbabwe's infant, primary and secondary education 2015-2022 Curriculum Framework. In other words, the two are seen as separate instructional models which have no common ground and this results in a knowledge gap.



According to Chaptoo and Ramadas (2019), several other factors that can restrict curriculum reform have been identified, and these relate to both the academic and the context in which the innovation is practising place. They involve issues of time, parental expectations, public reviews, unavailability of required instructional materials, lack of clarity about curriculum reform, teachers' lack of skills and knowledge, and the initial mismatch between the teacher's 'residual philosophies' and the policies underlying the curriculum modification. Other restrictions relate to organisational arrangements such as role overload, rigid scheduling of time, reporting systems, and failure of the administration to recognise and understand its role in change. All of these factors need to be discussed in the context of Africa. The reforms and core competencies in primary education are expected to transcend into both Technical and Vocational Education and Training (TVET) and university education levels.

## CONCLUSIONS AND RECOMMENDATIONS

From the findings and discussions above, the study concludes that college and university lecturers have a theoretical understanding of the Education 5.0 philosophy in comparison to Education 3.0 which largely produced job seekers while Education 5.0 aims at producing job creators to stimulate economic growth. Participants have heard through the media and other information platforms about the noble philosophy but do not have the practical or lived experiences of the innovation, making implementation difficult if not impossible, as most of them lack the practical experience of the policy. They stressed the need to be oriented or initiated into the new focus as change agents. It becomes apparent that as long as lecturers and administrators who are the change agents, do not have the practical knowledge and experience of the new curriculum innovation, successful implementation is not guaranteed. The participants agreed that the model has the potential to achieve an upper middle-income economy by 2030 because it promotes interdisciplinary project-based construction of knowledge through collaborations and community involvement. Nurturing and proper implementation of such a model is likely to yield positive outcomes at both national and global levels. Higher and tertiary education institutions are however facing financial, material, technological and human resources gaps to kick-start and sustain the implementation of the education of the noble 5.0 education innovation. It, therefore, goes without saying that the Ministry of Higher and Tertiary Education Innovation, Science and Technology Development should, as a matter of urgency, induct, train and motivate staff, engage stakeholders and investors for funding (PPP) and build innovation hubs to operationalise the Education 5.0 philosophy so that it is properly implemented and becomes sustainable.

In light of the above findings and conclusions, the study recommends that:

1. MHTEISTD provides resources to support the implementation of the Education 5.0 curriculum.
2. MHTEISTD trains and inducts the agents of the Education 5.0 curriculum implementers so that they are fully conversant with the policy initiatives and details and that the Ministry engages skilled personnel to implement the curriculum.
3. the government of Zimbabwe provides budgetary support by creating public-private partnerships (PPPs) for funding the implementation of Education 5.0.
4. MHTEISTD promotes the understanding of the Education 5.0 concept among all stakeholders including administrators, lecturers and learners through induction and capacitation workshops in order to promote the smooth implementation of the philosophy.
5. MoPSE ensures that this transformational model is clearly explained and foundations are laid so that when learners get to the tertiary education level, they are not lost but are only furthering their knowledge of the Education 5.0 philosophy.
6. MoPSE puts in place proper infrastructural and financial resources in place to nurture creativity, scientific inquiry and entrepreneurial skills among learners which are the prerequisites for the provision of goods and services at the tertiary level.
7. MoPSE aligns its curricula with the MHTEISTD to create an enabling atmosphere where learner experiences dovetail with the learning dictates and learning discourse of the Education 5.0 philosophy.

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