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Education with Production or Education Pragmatism as Solution to the Skills Shortage in Zimbabwe: Policy with Continuity?

MARGRET BHOWA¹ AND NICHOLAS ARIBINO²

Abstract

Zimbabwe has had an education policy foraging because of policy failure. The Ministry of Primary and Secondary Education has been shifting from one policy to another to revitalise skills development in learners, but there has not been much success in these adopted policies through the years. This article critically explores the education with production (EWP) policy that was adopted in Zimbabwe after independence, between 1984 and 1985, in search of potential solutions to the skills shortage in the country. The article is based on the argument that the subsequent education policies that Zimbabwe has been changing lacked the aspects that empowers graduates with job-relevant skills that industry requires to revitalise production. The study uses a qualitative methodology with a case study research design. To craft the discourse for this study, the study engages secondary data. The study reveals that post-colonial governments in Africa have tried to decolonise their education systems through development of science-based curriculums to foster national development. The study also reveals that Zimbabwe has tried to align the curriculum to the needs of industry, introducing vocational studies and aligning innovation and entrepreneurship with the curriculum to develop EWP. Emphasis was on including more practical subjects such as Building, Metalwork, Carpentry, Fashion and Design, Food and Nutrition and Agriculture in the curriculum for future industrial development and enhancement of entrepreneurial

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skills. The study concludes that for the country to embrace an education that produces graduates with graduate attributes and job-relevant skills to meet the country's industrial demands, vocational training in primary and secondary schools is recommended.

Keywords: foraging, revitalisation, post-coloniality, science-based curriculum, policy continuity

INTRODUCTION

Zimbabwe has had policy migration in the education sector since independence with most of the education policies adopted striving to bring about social, political and, more importantly, economic change in the country. The question of indigenisation and economic empowerment in Zimbabwe is one whose import traverses both the country's history and the present (Nkala, 2019). It could be traced to Zimbabwe's almost 100 years of settler colonialism during which indigenous people were subjected to severe economic, social and political disenfranchisement (*ibid.*). Fisher (2010) observes that white dominance had significance for the future. The native Africans became subject to subjugation and as recipients of an education system that favoured the whites, not the natives. As it were, on attaining independence in 1980, the new Zimbabwean government inherited an economy that was structurally configured to reproduce and reinforce the rigid social, economic and racial relations of privilege and poverty (Nkala, 2019). It was an economy veritably and unassailably dominated by white settlers and international companies, while systematically excluding indigenous people and consequently condemning them to abject poverty (Sachikonye, 2012).

Mandaza (1986) branded post-colonial Zimbabwe as a post-white-settler-colonial state, characterised by captured economic and political domination by the white-settler minority at the dawn of independence and thus the overwhelming strength of the forces of continuity. Zimbabwe experienced some reforms in its education system, which can be categorised as pre-colonial, colonial and post-

colonial education (Zvobgo, 1986; Mapara, 2009). The post-colonial can be further divided into two: Education 3.0 and Education 5.0, the former being tertiary education that focuses on three pillars, namely research, teaching and community service, while Education 5.0 focuses on five pillars, which are research, teaching, community service, innovation and industrialisation (Ministry of Higher and Tertiary Education, Science and Technology Development, 2018). The curriculum shifts from preparing students for white- and blue-collar jobs to preparing them for job-creation by using generated knowledge for the creation of goods and services (Muzira and Bondai, 2020).

Education with production would be taken up by all students, regardless of their academic or social standing. It was non-segregatory, leaving no one and no place behind. This policy, if it was not demonised, could have taken the nation far. It was a pro-development policy that taught production processes, marketing dynamics, pricing, understanding industry and entrepreneurship. Such innovations in agriculture as the use of fertility trenches and the *Pfumvudza* farming method, have been very useful to combat climate change.

Education can be used to safeguard the culture of a nation from foreign cultures and it can also be used as a vehicle to create solutions to the economic problems bedevilling the economy of a country by encouraging innovation, production and a work ethic. The need to create an education that fosters production while closing the skill shortage gap in Zimbabwe in the 21st century, has never been more important. The study explores the creation of EWD, while searching for solutions to the skills shortages that have been imposed by the technocrats' exodus due to the economic hardships that the country has endured since the year 2000.

Zimbabwe, like many developing countries, faces a critical skills shortage that hampers economic growth and development. This gap

exists across various sectors, including natural and applied sciences, engineering and technology, medical and health sciences, agriculture and digital skills. This situation is further complicated by the brain drain, where skilled professionals leave the country seeking better opportunities elsewhere. To address this challenge, there is a growing recognition of the need for taking up EWD with a more positive attitude. This approach aims to bridge the gap between education and the workplace. The study aims to come up with a framework for EWD and offer solutions to the country's skills shortage. The study layout consists of an introduction with a background to the study, a conceptual framework, a literature review, along with the study objective, the research methodology, the findings of the study, a discussion of the study, and, finally, a conclusion and recommendations.

CONCEPTUAL FRAMEWORK

The study uses the concept of life-long learning, as conceptualised by Harrison and Vanbaelen (2016), as constitutive of all activities undertaken throughout life to improve knowledge skills and competencies within a personal social civic and employment-related perspective. Rainbird (2000) observes that lifelong learning aims to influence the inexperienced in changing career fields, focusing on the demands of individuals taking self-responsibility in their learning process.

The study infuses the concept of lifelong learning with the concept of technology and entrepreneurship in the development of an education that produces innovation and industrialisation in Zimbabwe. Nieuwenhuizen (2021) describes the concept of entrepreneurship as the emergence and growth of businesses, a process that causes changes in the economic system through innovations of individuals who respond to opportunities in the market. Ndedi (2009) articulates that entrepreneurship is the willingness of individuals to take calculated risks, both personal and financial, by doing everything possible to fulfil one's goals and objectives. Pedzisai *et al.* (2014)

contend that the education system, the vehicle of social transformation, should suit the prevailing societal interest development needs and aspirations by enhancing learners' achievements. Technology as word-root is traditionally refers to art or skill (Skrbina, 2015).

The contemporary use of words incorporating this root implies that a certain amount of skilfulness or artistry must be involved in what they refer to (Le Shun, 2019). Technology is a system created by humans that uses knowledge and organisation to produce objects and techniques for the attainment of specific goals (Volti, 2009). There are opportunities for society to evolve with the digital technology era and with advances in Artificial Intelligence (AI) techniques, there is the potential for personalised learning experiences for people of all ages and challenges (Obschonka and Audretsch, 2020). Offering entrepreneurship and technological lessons in schools through lifelong learning can address the challenges of unemployment and poverty in Zimbabwe, as these can teach children to be skilful and able to take risks in production while developing new products. The use of these concepts in the education system of Zimbabwe can be an improvement in the skills for students adding the graduate attributes for graduates with 21st work-related capabilities.

LITERATURE REVIEW

This section presents the literature review of the study to situate the study within the historical context to understand the role of education in the improvement of economies through the production and enhancement of skill sets. The study explores the creation of education for production, while searching for solutions to the skills shortages that have been imposed by the technocrats' exodus due to economic hardships the country has endured due to multifaceted internal and external factors. Education policy increasingly presents a view of education that has, as its main purpose, the promotion of a knowledge economy where earning power is related to knowledge management (Peters, 2001). Industrial growth in any country is

important to boosting economic growth and citizenry welfare. Therefore, to meet the needs of industry, competent human capital should be built, ensuring that tertiary education graduates have job-relevant knowledge, skills and attitudes as exit competencies (Bawakyillenuo *et al.* 2013; Nusantari *et al.* 2020). A knowledge economy premised on higher and tertiary education as a major driver of economic competitiveness, is important for sustainable development, in both industrialised and developing countries (World, 2019).

Building knowledge bases through research and the formation of human capital are some of the means identified that tertiary education contributes to socio-economic development (OECD, 2008). Building a strong sustainable economic development for a country is dependent on the tertiary education which the students receive as exit competencies. The development in the fields of science and technology catching up with the world's rapidly changing harmony, is seen as very important for the development of societies and for societies themselves (Dogan and Varank, 2014). Elsewhere, international research Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS) show that, with the view to form a strong socio-economic development base, Singapore created a highly effective school system evidenced by high levels of student achievements in science mathematics and literacy (Deng, 2010; Tan, 2018).

Education with P/production is a concept that is gaining traction in Zimbabwe's education system, and for good reasons. Its importance lies in its capacity to address the skills gap that has grown over the years. Zimbabwe faces a skills gap where graduates might lack practical knowledge for the job market. EWP aims to bridge this gap by integrating practical skills development alongside theoretical learning. Students can gain experience in agriculture, carpentry or other productive activities. EWD enhances self-reliance and sustainability and equips students with the ability to produce food, goods or services. This fosters self-reliance and promotes a sense of

entrepreneurship. In a challenging economic climate, these skills can be invaluable. Schools that embrace EWP can become community development hubs. Students can use their acquired skills to contribute to local projects, improving food security or infrastructure. EWP can make learning more engaging and relatable. Students can see practical applications of what they are learning in theoretical subjects, potentially leading to better academic performance.

In an interview in March 2024, Nziramasanga, said,

“There are several challenges that can be faced in the implementation of EWP and some considerations must be made to come up with solutions. Resource availability for implementing EWP effectively, such as land, tools and qualified instructors, should be equitably distributed and equal access to these resources across schools is crucial.”

Finding the right balance between theoretical education and practical skills development is important. The curriculum needs to be adapted to accommodate EWP activities without compromising core subjects. Teachers need training on how to effectively integrate EWP into their lessons. This might involve collaboration with community experts in specific skills.

Nziramasanga went on to say,

“Overall, education with production has the potential to transform Zimbabwe's education system by making education more relevant and practical, equipping students with valuable life skills and promoting self-reliance and community development. While challenges exist, addressing them can lead to a more robust and empowering educational experience for Zimbabwean students.”

Education systems in developed countries focus on preparing students for life and work in the 21st century by developing generic skills like critical thinking collaboration, creativity and communication (the 4Cs) (Matorevhu, 2023). This type of education also includes technological and multicultural literacy, civic and management skills and generic skills referred to as graduate attributes or 21st-century

skills. They are lifelong skills not specific to any class or subject that students need to learn to apply to life (Deng, 2010). These skills are transferrable in all fields and purposes and essential in a wide range of tasks and occupations which the graduates undergo in life, hence that is what is needed in an education system if it is to enhance skills to cover the skills shortage and increase production. Trachtenberg *et al.* (2018) posit that schools provide sustainable learning to communities that lasts and is retained and may be transferable after exposure to it and may involve the process of learning to learn. Education or skills can be transferred to communities through schools, while enhancing innovation and production for a nation.

Ghazalan *et al.* (2019) observe that in Malaysia, the Ministry of Higher Education realised that unemployment would continue if life-long learning was not merged with something that would act as a pull factor, hence entrepreneurship was partnered with life-long learning to produce graduates that are not job seekers but job and opportunity creators. Kapoor *et al.* (2018) are of the view that European labour markets are changing constantly because of this change. Skills and qualifications preferred by businesses are also changing and to handle these changes, people need to be prepared and flexible in acquiring basic skills, including literacy and numeracy, foreign languages, digital skills and international social competencies. Many educators lack digital skills, so they must proceed with their professional development to ensure an efficient learning process (Hamburg, 2023). Vocational education training is one other form of education which can produce a particular human capital with specific skills needed by industry as education backers uphold its ability to create adaptive universal human capital capable of responding to economic and labour needs (Oketch, 2007).

Zhao (2021) alludes to modern technical education in North East China and its influence on industrial development. Since 1932, the technical and vocational education has positively influenced the industrial growth of the region. Zhao (*ibid.*) reasoned that in early

1915, the vocational education and apprenticeship approach became an operative successful training model for new technical talents, Its role was to identify and sharpen new technical talents in the education system. Zhao (*ibid.*) alludes that an apprenticeship of learners towards handcraftsmanship and traditional apprenticeship as a tool which has driven even Japan from an agrarian economy to an industrial economy due to innovation resulting in the creation of jobs as witnessed by an increase in jobs and rise in demands for technical personnel in the industry. Ren *et al.* (2021) posit that there is a good relationship between industrial development and vocational education as there is a surplus of aptitudes, talents and skilled labour in the industry and this raises the economy. Ren *et al.* (*ibid.*) allude that education in practical education and apprenticeship match well with industrial development, therefore, education has served its purpose as the spark for industrial development. Concerning the Danish education system, Bjaelde *et al.* (2018) observe that the use of Continuous Assessment in Higher Educational Institutions has a paramount role in transforming and making the education system effective.

Post-colonial Africa has been marred by curriculum reforms in search of education systems that do away with colonial legacies of economies reliant upon former colonial masters. Ogunniyi and Rollnick (2015) observe that it is worrying that most of the challenges prevalent before the independence era are still around today as the clamour for independence was based on the need for economic liberation and mass indigenous production. Curricula reforms are still ongoing worldwide and if teachers are not well prepared during either pre-service training or in-service training, curriculum innovation implementation may not be successful (Im *et al.*, 2016). South Africa introduced a post-apartheid curriculum that was deemed too complex for teachers to implement and was replaced by a more conservative content-centred curriculum (Nakedi *et al.*, 2012). There is need for a decolonised education system that focuses on production and skills shortage solutions through the production of

students with graduate attributes. A science-based education system that focuses on the eradication of poverty through bolstering production and producing students with competent 21st-century work skills is important for developing countries such as Zimbabwe to foster socio-economic development.

RESEARCH METHODOLOGY

The study uses a qualitative methodology with a bias towards the case study research design to explore the development of education for production to solve the skills shortage that Zimbabwe is currently experiencing. Crowe *et al.* (2011) argue that a case study design is a research approach used to generate a multi-faceted understanding of a complex in its real-life context. Priya (2021) alludes that a case study design is an appropriate research design when the researcher wants to gain concrete, contextual and in-depth knowledge about a specific real-world situation. To craft the discourse to understand the creation of an education for production reliant upon improving the skill set of students in Zimbabwe, the study engages secondary data. The study uses narrative analysis as a data analysis method.

FINDINGS

Zimbabwe, like many other developing countries, faces a critical skills shortage which hampers economic growth and development. Many post-independence African governments have been implementing innovative science education curricula since the beginning of the independence era in the 1960s, with the view to improve economies of their countries (Matorevhu, 2023). However, rapid fundamental changes in many African education systems aiming to address imbalances, created gaps between demand and supply of relevant high-calibre science teachers, since few teachers irrelevant to socioeconomic needs are being produced (*ibid.*). As a result, teacher education institutions in Africa, including Zimbabwe, have not been able to produce enough relevant science teachers for respective education systems to meet national socioeconomic needs (*ibid.*).

ALIGNING CURRICULUM WITH INDUSTRY NEEDS

The Sunday News (11 June 2023) alludes that as the world rapidly evolves and embraces the Fourth Industrial Revolution (4IR), it must be essential for educational systems to keep pace with the changing demands of the future of work. The newspaper posits that curriculum reforms should not be a one-time endeavour but, rather, an ongoing process that embraces continuous research. This can be solved by the development of a research-based curriculum which ensures that educational practices are informed by local research findings that provide valuable insights into the needs and aspirations of Zimbabwean learners, human resource needs and local contexts.

The Sunday News (ibid.) alludes that curriculum reform should equip students with the skills and knowledge needed to thrive in a globalised workforce, making Zimbabwe able to produce skilled professionals for the global market. *The Herald* (29 July 2021) observes that the Ministry of Land, Agriculture, Fisheries, Water and Rural Resettlement has launched the Agricultural Education for Development 5.0 curriculum for colleges as the government seeks to transform the agriculture sector. *The Herald (ibid.)* quotes the responsible minister Dr. Anxious Masuka, as saying,

“The new curriculum is expected to respond to the needs of the economy and provide learners with skills, knowledge and competencies important for the labour market, personal development and active citizenship. It focuses on training, business advisory, research, innovation and entrepreneurship.”

PROMOTING TECHNICAL, VOCATIONAL AND EDUCATIONAL TRAINING

Investing in technical and vocational educational and training (TVET) institutions and programmes equips individuals with technical skills needed for specific jobs. Encouraging greater access to, and recognition of, TVET qualifications. Zendera (2013) observes that the transfer of knowledge, therefore, through TVET, coupled with creative skills and career guidance, can raise the innovative capacity of Zimbabwe, allowing the country to have innovative quality technological solutions for its context and export and keep up with

the developed world. Mhlanga *et al.* (2021), indicate that TVET has emerged as one of the most effective human resource development strategies that Zimbabwe needs to embrace to train and modernise the technical workforce for rapid industrialisation and national development as the large number of graduates coming out of the school system are unemployed although opportunities for skilled workers do exist in the economy.

Matsikure *et al.* (2023) indicate that incorporating inclusive TVET in Zimbabwe education institutions can create an environment enabling all learners with their diverse needs to attain technical and vocational education. Dube and Xie (2018) observe that most of the young people in Zimbabwe lack the skills and knowledge that they need to change their lives because of the economic situation. Through vocational training centres, students are trained in different fields giving them skills to use whether they choose to start their own business or to seek employment.

FOSTERING ENTREPRENEURSHIP AND INNOVATION

Encouraging educational programmes that promote critical thinking, problem-solving and creativity should be at the heart of the country's skills development thrust, providing support and resources for young entrepreneurs to develop innovative solutions for local challenges. Nani (2016) posits that there is need to establish entrepreneurial centres to allow learners to identify business ideas, incubate these ideas and implement them into businesses with the mentorship of captains of industry, as such centres will not only equip learners with relevant entrepreneurship skills, but also allow for flexibility, creativity and innovation learning. Dumbu (2014) observes that Open and Distance Learning institutions should design short courses in entrepreneurship, compulsory courses for entrepreneurship in all faculties and a higher education curriculum to provide options for entrepreneurship development among university students. Dumbu (*ibid.*) argues that universities must develop curricula to suit the

needs of the current economic status of the country which is characterised by high university graduate unemployment.

Garwe and Thondhlana (2022) argue that the curriculum development unit should include areas of entrepreneurship left out and that entrepreneurship was to be linked with Science, Technology, Engineering and Mathematics (STEM) aspects to spearhead economic development. Munyoro *et al.* (2023) observe that there is need to make entrepreneurship compulsory in all Zimbabwean universities and the focus should be on engineering and other non-business departments and training their lecturers on how to teach entrepreneurship education. Muzira and Bondai (2020) argue that Zimbabwe's target is to re-engineer and revive industry through modern technology, while teaching innovation and industrialisation. Dzenga *et al.* (2019) allude that the year 2019 saw Zimbabwean higher and tertiary education bridging the gap between classroom and industry, moving from theory to practice. The country launched innovation hubs in state universities to improve innovation.

Muzira and Bondai (2020) observe that Zimbabwe introduced Education 5.0 so that higher education institutions would produce graduates who are entrepreneurs equipped with innovative ideas to set up industries rather than job seekers. This was to bridge the mismatch between the skills and the industry requirements. *The Sunday Mail* (24 December 2023) postulates that for Zimbabwe to re-ignite the flames of progress, the country must foster a culture of entrepreneurship and embrace innovative approaches. Ndofirepi and Rambe (2018) observe that to enrich potential entrepreneurs, educators and policy-makers should address various aspects of the entrepreneurship education value chain from content creation, delivery strategy, enhancing practical orientation of the subject and developing lasting relations with industry long before entrepreneurship starts, as these affect students' willingness to engage in future entrepreneurship.

UTILISING TECHNOLOGY IN EDUCATION

Introducing technology-based skills development programmes equips individuals with the digital literacy necessary in today's economy. *The Chronicle* (Date and Month 2021) indicates that Wi-Fi is a cost-effective and easy-to-implement solution in schools and universities in Zimbabwe.

Maune (2023) observes that higher education students in Zimbabwe, face challenges due to high data costs and inadequate funding. State-owned universities struggle to provide online learning, while local colleges struggle to purchase or subscribe to platforms like Microsoft Teams, Wiseup and Moodle. *The Standard* (21 May 2023) indicates that making sure that teachers know how to use technology is as much an investment in student learning as it is providing the education technology itself as the government's technological inclusion bracket continues to grow, with the latest project affecting schools across the country following laptop donations. There is a gap on the use of technology in Zimbabwe as the country lags behind in the provision of technological adoption due to high costs of technological platforms.

POTENTIAL BENEFITS OF "EDUCATION WITH PRODUCTION"

Reduced brain drain encourages skilled professionals to stay and contribute to national development. Lekhethe (2023) observes that an education that enables innovation, industrialisation and entrepreneurship can empower students with practical skills apart from learning theory, which equips the learner with relevant knowledge. Alharbi (2023) indicates that a practical education such as Education 5.0, that aims at production, can help and facilitate the graduates with the most important and long-life knowledge based on learning skills with hands-on training experience. Muzira and Bondai (2020) observe that education, with, or for production, can match the curriculum to the Zimbabwean culture and the country's development needs. *The Herald* (5 August 2020) indicates that education for production can accelerate Zimbabwe's industrialisation

and modernisation through the addition of proper skills to citizens and students.

CHALLENGES AND CONSIDERATIONS

Implementing effective reforms in the education system requires collaboration between government, industry and educational institutions. Zendera (2013) posits that one factor militating against the effective implementation of TVET provision in schools is the general lack of professional specialist teachers. Dzinotyiweyi (2020) observes that the main challenges to the use of education technology is limited power supply, limited or low broadband coverage in rural and remote areas and lack of equipment.

DISCUSSION

Zimbabwe has been implementing the curriculum in the education system to suit innovation, the need for industrialisation and accelerate industrialisation to improve production. The study reveals that changes made in the African post-independence education system have not been able to address the imbalances between demand and supply. The education system in Zimbabwe failed to create industrialisation or innovation as graduates from the system lacked graduate attributes. This has had Zimbabwe hoping for one education curriculum to address the imbalances created by colonialism, that is creation of curriculums which had Zimbabweans training for jobs related to community service.

The study reveals that the curriculum in Zimbabwe needs to be aligned with the needs of the industry for practical training and work-based learning, equipping students with 21st-century work-related training. The study shows that, to create an education for production in Zimbabwe, the curriculum needs to be aligned with the needs of the industry by embracing the 4IR as the education system needs to keep pace with the demands of the future of work. Technology-based advancement in the development of industries has been trending across the world in all sectors from agriculture to

combating climate change through intelligent agriculture initiatives. There is need to equip students with continuous knowledge and skills to thrive in the globalised workforce market. In support of these findings is the conceptual framework of life-long learning infused with entrepreneurship and technology as observed by Ott *et al.* (2014), that life-long learning with entrepreneurship can equip students with skills for the 21st-century globalised workforce needs.

The study brings to light the curriculum needs to respond to the requirements of the economy and provide learners with skills and knowledge to be competent, while focusing on research innovation, entrepreneurship and business advisory. This can create an education for production through innovation in various sectors and entrepreneurship can be taught to sectors like agriculture to accelerate agro-based entrepreneurship. In support of the study, Nani (2016) observes that preparation is the key element for creating potential entrepreneurs because opportunities are seized by those who are prepared for them and, as such, the curriculum needs to prepare the students for entrepreneurship and the needs of the industry.

The study shows that there is need to promote TVETs in the education system in the Zimbabwean curriculum to foster the development of education for production, while creating a workforce that is innovative and industrious. The TVET's alignment with the curriculum will promote the education system of the country to keep up with globalised demands of industrialisation, while bringing innovative quality technological solutions for the country's needs and export of talent to keep up with the demands of the developed world. The TVETs alignment to the curriculum can be a solution to the needs of the Zimbabwean industry as it can create effective human resource development through the modernisation of the technical workforce for rapid industrialisation and national development through raising production. The alignment of the TVETs to the curriculum in Zimbabwe can be a solution to the skilled

shortages that the country is experiencing as many graduates that are produced by the education system lack graduate attributes, leading to unemployment as there remains a mismatch of what the industry needs and what the curriculum teaches. The study reveals that the incorporation of TVETs in the curriculum can create an environment enabling all learners with diverse needs to attain technical and vocational skills. The addition of TVETs to the curriculum can bridge the gap created by the shortage of skills in various sectors of industry in Zimbabwe. Similar to the study is Woya (2019), who observes that higher education should add value through developing job-related skills and competencies and TVETs are the way to add skills to graduates.

The study shows that to create an education for production, there is need to create educational programmes which promote critical thinking, problem-solving and creativity through entrepreneurship to develop innovative solutions for the challenges bedevilling the country's economic performance and production. The study shows that to align entrepreneurship in Zimbabwe, there is need to align the curriculum with entrepreneurship through the creation of entrepreneurial centres to allow learners to identify business ideas and incubate them under captains of industry, allowing innovation through the cultivation of new ideas.

The study posits that all institutions of higher learning should make entrepreneurship modules compulsory. Universities must develop a curriculum to suit the needs of the current economic status of the country to create opportunity creators with an innovative mindset, rather than opportunity seekers. In support of the study is Murawski (2014), who observes that critical thinking is the lifeblood of workplace skills, including problem-solving, decision-making and opportunity creation. The equipment of students with critical thinking can enable students to face real-world problems. In support of the study is the conceptual framework the life-long learning as observed by Sader and Gabela (2017), that the problem of skills

shortage arises mainly from lack of sufficient education with critical thinking and skills required by modern-day employers, hence lifelong learning equips students with critical thinking.

The study alludes that to create an education for production in Zimbabwe, there is need to utilise technology in the education system to introduce the students to technology-based skills development programmes to equip individuals with digital literacy. The study reveals that the use of technology in the education curriculum of Zimbabwe can help the country take advantage of the best learning practices and tailor it to make it locally relevant and feasible for the schooling system. In a similar study, Le Shun (2017) posits that schools in developing countries must exploit technology to create graduates who have competent digital skills. The study shows that there is a gap in the use of technology in Zimbabwe as the cost of connectivity is high for most educational institutions. To align the education system, there is need for the provision of cheap Internet services and liberalisation of the telecommunications sector to smoothen its alignment with the education sector. To align the education curriculum to technology for production, Zimbabwe must embrace international players in telecommunications to allow for access to cheap Internet services, even to rural schools to bridge the rural-urban divide on the quality of education. Consistent with the study is Mazikana (2023), who observes that schools in rural Zimbabwe Mbire District are affected by the lack of technological infrastructure such as Wi-Fi, with students lacking computer literacy.

The study reveals that education for production has potential benefits in that education for production can improve productivity and competitiveness in graduates while revitalising the manufacturing industry in Zimbabwe as education favours industrialisation and innovation. Education for production can create students with graduate attributes, making them ready for the global economy's demands and, positioning the country to keep up with the pace of global industries. The EWP can create a curriculum that

matches the demands of the industry and revitalise the manufacturing industry, while bridging the skills shortages that Zimbabwe has undergone due to the mass exodus of skilled labourers. In support of the study are Pedzisai *et al.* (2014), positing that the education system can be a vehicle for transformation and it should suit the prevailing societal interest development needs and aspirations by enhancing learners' abilities through creating an innovation enabling environment .

The study alludes that to implement effective reforms in the education system, there is need for collaboration between government, industry and educational institutions. The study shows that the factors militating against effective implementation of TVETs provision in schools to accelerate the education of production and innovation is lack of professional specialist teachers, as most of the teachers teaching TVETs in schools are not qualified. The challenges to the provision and the embracing of the 4IR in Zimbabwe is the limited broadband infrastructure in most rural and remote , signalling the gap between rural and urban quality of education, with most rural student disadvantaged from vocational skills and innovative ideas widening rural unemployment. In support of the study is Mazikana (2023), who observes that Zimbabwean schools have been affected by the lack of teachers for practical courses as most of the skilled people in Zimbabwe are leaving the country in search of greener pastures, causing a brain drain in various sectors, not only the education sector.

CONCLUSION AND RECOMMENDATIONS

"Education with/for production" holds promise as a viable solution to address the skills shortage and contributes to Zimbabwe's economic development. Adopting this approach, the country can equip its workforce with the necessary skills and knowledge to drive innovation, entrepreneurship and sustainable growth. However, successful implementation requires overcoming existing challenges and fostering collaboration among stakeholders for a long-lasting

impact. The study concludes that there is need for Zimbabwe to embrace and implement an education curriculum for production that specifically deals with equipping graduates with graduate attributes to enable the country to move forward.

The study recommends the creation of vocational classes in rural areas to equip rural students with employment skill set that can enable them to create employment opportunities. There is need to create innovation hubs in every province and open them to the general public with innovative and industrious skills to create. There is a need for availing of cheap Internet coverage in rural and remote areas through the inclusion of foreign multi-national companies to reduce over-pricing by local players.

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