Journal of Popular Education in Africa: **ISSN 2523-2800 (online)**
October, November & December 2024, Volume 8, Number 10, 11 & 12
Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District

By

Mapenzi Mavis, Muzenda Denias and Muparuri Piet.
Great Zimbabwe University
Email muzeden@gmail.com
Cell 0772748198

Abstract

The study sought to examine teachers' perceptions on challenges of implementing education 5.0 at selected five primary schools in Mutoko district. A mixed methods approach was used, where a multiple case study research design formed the basis of the inquiry. A sample of (N=25) participants, specifically teachers was randomly selected, with 5 teachers from each school. Stratified systematic random sampling was used to select five schools from a total of 50 schools. Questionnaires, semi-structured interviews and observations were used to solicit for data. The findings revealed that teachers had mixed perceptions regarding challenges of implementing education 5.0. Younger teachers who constituted 60 %, perceived it as a useful game changer in promoting problem solving skills and enhancing school technology leadership whilst 40% old - aged teachers regarded it as not useful. It antagonised with their old way of doing things, something that they were not prepared to let go of. In terms of perceived challenges, funding problems topped the list, followed by lack of appropriate expertise, large class sizes, negative attitudes and time constraints. Thus, the study recommends the need for adequate funding towards physical and social development, incentives, robust human capital development, and investing in strategic partnerships in order to foster positive perceptions and effective implementation of education 5.0.

Key words: Zimbabwe, Education 5.0, perception, implementation, challenge

Journal of Popular Education in Africa: ISSN 2523-2800 (online)
October, November & December 2024, Volume 8, Number 10, 11 & 12
Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District

By

Mapenzi Mavis, Muzenda Denias and Muparuri Piet.

Introduction and Background

Education and business are inseparable; and technology provides the edge in bothareas (Alhabi, 2023). The blend of education and technology will embrace the maximum benefits of academic learning and development of competences needed to stir innovation and industrialisation. Lantada (2020) argues that following the realisation that the previous education standards vis a-vis education 1.0; 2,0, 3, 0 were not robust enough to promote the development of a skill-set and competences to match the needs and demands on the market , education 5.0 was the way to go. The belief was that it could bring the much-needed turn around and competences to solve problems that humankind face on daily basis. Nonetheless, Munikwa and Mapara (2022) assert that the implementation of education 5.0 the world-over has not been free from challenges. Education 5.0 according to Muzira and Muzira (2020) is a curriculum premised on five basic pillars which include research, teaching, community service, innovation and industrialisation. Lantada (2020) regards it as an educational blue print which seeks to impart knowledge and skills which can be used to produce goods and services thereby addressing various problems. Above all, it prides in the development of skills which are in line with the needs and demands of the modern market (Moleka, 2022). By doing so, it stimulates positive developments in all sectors of the economy.

In Zimbabwe, the drive for education 5.0 can be traced back to the 1980s when Honourable Dzingai Mtumbuka who was Minister of Education and Culture by then argued that theory- based education was arsenic and needed to be phased out (Zinhuku, 2022). Munikwa and Mapara (2022) assert that the response action came in the form of the Nziramasanga Commission of Inquiry of 1999 which added impetus towards transforming the education towards producing goods and services. However, at this juncture, not much physical action was visible on the ground. A breakthrough only came in 2019 when the new Minister of Higher and Tertiary Education, Professor Amon Murwira emphasised the need for education to yield goods and services.

Statement of the problem

Government of Zimbabwe's vision on education 5.0 is inclined towards equipping graduates with skills that empower them and promote innovation towards societal development through transformative science. Education 5.0 has the potential to create new jobs, reduce unemployment and foreign currency through the beneficiation of raw materials. The introduction of education 5.0 at primary schools A, B, C, D and E seems to be a noble idea to foster the development of the skillset and competences needed for modern times yet there is no solid evidence of implementation.

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Education 5.0 focuses on developing 21st – century skills such as critical thinking, creativity, and problem- solving rather than just rote learning and adds immersive experience in the classroom. However, with the dynamics in the needs and demands of the market, a huge number of teachers have been not sure about which interventions to take. On many occasions, they have been found wanting, hopping from one intervention to another but without much success. The situation has been worsened by the fact that there has been no commensurate physical, social and human capital development. As a result, adhoc implementation of education 5.0 has been a norm. Thus, the paper intended to investigate the teachers' perceptions on challenges faced in the implementation of education 5.0 at five selected primary schools in Mutoko District.

Main research question

To investigate the challenges of implementing education 5.0 at selected five primary schools in Mutoko district

Sub research questions

(I) To examine teachers' perceptions on education 5.0 at five selected schools.
(II) To assess teachers' perceived challenges undermining the implementation of education 5.0 at five selected schools

Conceptual framework

A conceptual framework according to Creswell and Poth (2017), is an analytical tool through which phenomenon of interest is scrutinised. In this case, it was contextualised as factors which urge or repel the adoption and effective implementation of education 5.0. These can be individual, resource related or innovation related. It is through these lenses that the nexus between and amongst teachers' perceptions regarding the implementation of education 5.0 at five selected schools in Mutoko district is established, organised and analysed.

Theoretical Framework

Smith's 1960's Human Capital theory underpins the study. Jabri and Jabri (2022) underscore that the theory emphasises that refining human capabilities is imperative for enhanced productivity. The same applies to education 5.0. Zinhuku (2022) posits that they are critical towards the existence, growth and resilience of educational institutions. For teachers to perform exceptionally well in the implementation of education 5.0, they have to be in possession of the right skills, knowledge, support, physical and social infrastructure as well as resources (Lantarda, 2022). It gives them the strength to unlock their potential. The reverse is true when they lack in the alluded facets. This makes the theory compatible with the study.

Literature Review

Teachers' perceptions on the implementation of education 5.0

Education 5.0 came along with many implications to teachers. It has aroused varied perceptions globally. With more investment towards education 5.0 in developed countries, it has also led to positive attitudes which in turn translated to positive perceptions. This has seen teachers being

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

upbeat about embracing the initiative. Alharbi (2023) used a comparative survey to investigate the implementation of education 5.0 in developed and developing countries focusing on Malaysia, Saudi Arabia, Sri- Lanka and Zimbabwe. In Malaysia and Saudi Arabia, the teachers had high hopes and faith in education 5.0 since the initiative was backed by adequate infrastructural (physical and social) and financial investments. Most of the teachers had deep knowledge regarding the initiative hence it gave them reason to be confident and keen to participate in the education 5.0. Most importantly, it stirred positive attitudes. Coupled with high levels of perceived usefulness of the initiative, many viewed the switch to education 5.0 as instrumental towards fostering the development of skills that meet the need and demands of the market.

For developing countries, the issue of teachers' perceptions towards education 5.0 remains a mixed bag as some view it as a noble initiative which lacked the utmost funding. Alharbi (2023) discovered that in Sri-Lanka, a relative huge number of teachers applauded education 5.0. They were aware of the benefits associated with it and hence they were enthusiastic about it. Change emanating from education 5.0 was understood as a turning point in the realm of skills development. However, inadequacy of funding, infrastructural availability in terms of quantity and quality remained a cause of despondency. The general hype about education 5.0 was more common amongst the young teachers whereby about 70% of the young teachers had interest in education 5.0. Education 5.0 came along with innovation and use of technology; aspects which they had interests in, (Alrhabi, 2023), hence, it stirred positive perceptions amongst younger teachers than old age teachers. This shows that perceptions towards education 5.0 have not been uniform. Similar insights were also established in Kenya by Anealka (2018) where negative perceptions have been also attached to infrastructural inadequacies. A huge number of teachers thought that resource and funding constrain were anticipated as they have proved to be inherent features of the education system in developing countries.

In Zimbabwe, Munikwa and Mapara (2022) discovered that education 5.0 has stirred mixed feelings and opinions across the teaching divide. Generally, positive attitudes and high levels perceived usefulness have been commonly experienced amongst young teachers than old age. The old age teachers have been in the system for many decades and the idea of bringing change of this nature did not sit well with them. In fact, their flexibility to adopt new things and approaches has proved to be low. This stems from the fact that they have been familiar with the old way of doing things, hence, the idea of a sudden switch to education 5.0 has been problematic. As a result, this has seen many of old age teachers showing negative attitudes towards change regardless of the fact that change in the form of education 5.0 was imminent. Muzira and Bondai (2021) argue that the general positive perceptions amongst the young were caused by the fact that they have been quick to keep abreast with technological advancement. Education 5.0 was closely linked to technology/ innovation; it was a plus factor for the young teachers since they would exploit their technological skills in all components of education 5.0. Hence, this created huge discrepancies in the perceptions towards education 5.0.

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Challenges undermining the implementation of education 5.0

The nature of challenges confronting education 5.0 differs from one context to another. Thus, challenges associated with education 5.0 in different contexts are reviewed in the forthcoming section.

Funding Constraints

Studies by (Moleka 2023; Munikwa and Mapara, 2021) showed that funding problems have been inherent in many educational institutions globally. Without optimum funding, the possibility of meaningful physical, social and human capital development has been undermined. Alhabi (2023) used a survey to examine the implementation of education 5.0 in developed and developing countries, with Malaysia and Saudi Arabia emerging from developed countries whilst Sri-Lanka and Zimbabwe represented developing countries. Serious discrepancies in funding were noted between developed and developing countries. Funding constraints were found to be a perennial problem in the developing countries. Although Sri-Lanka and Zimbabwe have been keen on implementing education 5.0 as evident in the restructuring of the curriculum and infrastructural development, funding constraints remained visible. Likewise, Lantarda (2022) confirmed the same predicament in Rwanda whilst Moleka (2022) discovered similar trends in Kenya. Be that as it may, the extent of the funding constraints varies from one school to another and from time to time, hence motivated the study to find out whether this was part and parcel of the challenges encountered in implementing education 5.0 at the five selected schools or not.

Lack of expertise

Successful implementation of education 5.0 is a function of expertise; which usually comes from additional training yet most of teachers, administrators and stakeholders have been found wanting in that area (Alhabi, 2023). Zinhuku (2021) corroborates that educational/curriculum implementation ought to be preceded by appropriate training and follow up sessions during the execution of the initiative. However, literature from (Alhabi, 2023; Moleka, 2022) reveal that scant knowledge about education 5.0 has been a norm amongst teachers in third world countries. This suggests that without the optimum training and subsequent knowledge, most of the stakeholders remain clueless about education 5.0, hence, curtailing their ability to implement it. Lantarda (2020) discovers that absence of tailor-made ICT and trainings has undermined teachers' transition to the digital demands of education 5.0. On many occasions, teachers' innovation and problem- solving and school technology leadership leave a lot to be desired. Locally in Zimbabwe, (Munikwa and Mapara 2022; Muzira and Muzira 2020) established that teachers and other stakeholders have not been exposed to relevant training before and during the implementation of education 5.0. Hence, many have not been flexible to foster effective implementation of education 5.0. Trial and error methods and initiatives have been a norm lately (Mareiva and Mabika, 2022). However, skills gap remains a varied phenomenon amongst the teachers from time to time. As such, it provided impetus for the study to establish whether this is one of the challenges undermining the implementation of education 5.0 or not.

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Negative Attitudes

Whenever a new initiative is introduced, people tend to be resistant to embrace it (Dervojeda, 2021). The same has happened with the introduction of education 5.0. Gupta and Bhaskar (2023) reiterate that some of the negativity emanate from lack of training and the general misconceptions regarding education 5.0. For some, it meant more workload and responsibilities, hence stirring negative attitudes. Anealka (2018) discovered that negative attitudes suppressed the teachers' readiness to accept the initiative. With low levels of acceptance, it meant that readiness to implement was also low. Lack of consultation prior to the implementation was responsible for negativity amongst teachers in Kenya since they felt let down by the system. In Zimbabwe, Muzira and Bondai (2021) discovered that education 5.0 was not backed by appropriate trainings and resources, hence, it caused negative attitudes. Teachers felt taken for granted. Nonetheless, Munikwa (2021) believes that the cause and extent of negativity varies from person to person depending on the circumstances. Therefore, it made it sensible for the study to find out if this is one of constraints to the implementation of education 5.0 at primary schools in Mutoko.

Time Constraints

The implementation of education 5.0 is time dependent (Jabri and Jabri, 2023). However, considering the vastness of the components and demands of the initiative, time has proved to be a limiting factor. Studies by (Alhabi, 2023 and Moleka, 2022) attest to the fact that time constraints have been noted even in Malaysia and some parts of Saudi Arabia. The anomaly has been more serious in third world countries such as Sri-Lanka and Zimbabwe. Education 5.0 came along with structural changes to approaches, content, assessment methods and others which made it difficult for effective implementation to materialise without extra human capital. Anealka (2018) adds that the same problem has been also common in Kenya and Nigeria. The introduction of education 5.0 meant more responsibilities and manpower, yet on many occasions, schools were operating with serious teacher shortages. Thus, the existing manpower was overburdened with responsibilities and mostly failed to meet the demands of education 5.0. Muzira and Bondai (2021) discovered that with more workload and responsibilities but without additional time, implementation of education 5.0 has been very problematic. Despite the fact that implementation has been problematic, the extent to which teachers and other stakeholders cope with time constraints in implementing the initiative differs across the Zimbabwean divide.

Research Methodology

A mixed approach was employed in executing this study. The mixed approach design was found suitable to study the challenges faced in the implementation of education 5.0 at five selected primary schools in Mutoko district. Johnson and Christensen (2017) defines the mixed research approach as one which combines both qualitative and quantitative methods in a single study in order to provide a broader and complete picture of the problem. This provided a rich platform for the researcher to be immersed in issues related to education 5.0 allowing swift collection, synthesis and analysis of numerical and non –numerical data such as feelings, cues and perceptions on the challenges faced in the implementation of education 5.0.The selection of five

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

schools was achieved through stratified systematic random sampling, where every 10th school was picked. Mutoko is about 150 kilometres North East of Harare. The interpretivist paradigm was used to better understand beliefs and values of those involved in the implementation of education 5.0. Data triangulation allowed better understanding of the subject matter. A sample of (N=25) participants was the mainstay of this study. 25 teachers were selected randomly, with 5 from each school. 25 Questionnaires and 10 semi-structured interviews and observations generated the data used in the inquiry.

Presentation of Results
Teachers' perceptions on education 5.0
(N=25)

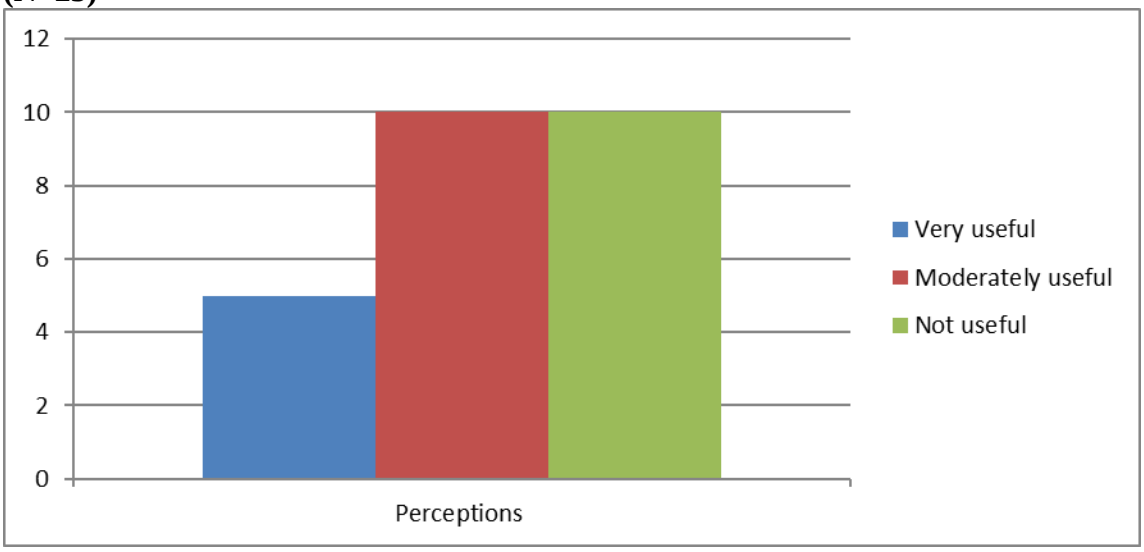

Figure 1.2. Teachers' perceptions regarding education 5.0

We established that teachers had mixed perceptions regarding education 5.0. 5 (20%) participants viewed education 5.0 as a very useful initiative whilst 10 participants (40%) perceived it as moderately useful in their career development as well as the learner's skills development, promoting school technology leadership, research and problem- solving skills amongst teachers and learners. However, 10 (40%) regarded it as not useful. They regarded it as laborious and a total departure from their old way of doing things whilst technology phobia was equally a concern.

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Table 1: Perceptions on challenges faced in the implementation of education 5.0 (N=25)

Perceived challenge	Frequency	Frequency %
Funding	25	100
Lack of expertise	22	88
Large class sizes	20	80
Negative attitudes	18	72
Time constraints	18	72

Source: Field Data 2024

Table 1 illustrates that the researchers established that 25 participants (100%) perceived funding constraints as the major challenge whilst 22(88%) regarded lack of expertise as another cause for concern. Large class sizes attracted 20(80%) whereas negative attitudes and time constraints had 18(72%) apiece. The discrepancies in the statistics suggest that teachers had perceived the challenges faced in implementing education 5.0 differently.

A qualitative insight into teachers' perceptions on challenges of implementing education 5.0 at five schools

A Physical infrastructure, tools and instructional materials fall short of the required standard. We do not have adequate ICT resources. Teachers have not been able to get the training in line with education 5.0. Time is also a concern since education 5.0 requires ample time yet the timetable is already strained.

B Funding constraints are evident in obsolete physical infrastructure and none existence of ICT, learning material and tools. Large class sizes make it difficult for teachers to cater for all learners on one goal.

D Time constraints are also a problem since education 5.0 comes with more content and demands but with no addition of time to the overstretched timetable.

E Resistance to embrace change has proved to be serious since it is a tiring initiative. Large class sizes exceeding 50 learners leads to high teacher student ratio. .

We found out that while quantitative methods provided apt quantified data, interviews and observations brought about rich qualitative facts regarding teachers' perceptions on challenges of implementing education 5.0. There was a consensus on the fact that teachers had mixed perceptions towards education 5.0.

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Discussion

Teachers' perceptions on education 5.0

We found out that teachers had mixed perceptions on education 5.0. 60% of the teachers, who were younger, regarded it as a useful, progressive and befitting transition from education 3.0, which could bring about more opportunities for the sustainable production of goods and services (industrialisation). Likewise, its propensity to promote school technology leadership, research and problem- solving skills amongst teachers and learners was immense. Contrarily, for the elderly teachers (40%), it was not a worthwhile initiative since it antagonised with their old-school principles of teaching and learning. With mixed perceptions, it implied conflicting of interests which in turn had a serious negative implication on the implementation of education 5.0 at the five selected schools.

Challenges faced in the implementation of education 5.0

While perceptions regarding the challenges of implementing education 5.0 differ from person to person, there was a general finding that teachers at the selected five schools encountered similar challenges. Some of the noted challenges include but not limited to:

Funding constraints

It was established that funding problems have been inherent at schools A, B, C, D and E. Understaffing, absence of ICT, books, and classrooms were common yet their existence is handy with various components of education 5.0 such as research, teaching, innovation and industrialisation. Without adequate funding, it stifled the schools' potential to successfully implement education 5.0.

Lack of expertise

We found out that effective implementation of education 5.0 directly depended on expertise; which usually comes from additional training yet 88% of teachers lacked the appropriate expertise to turn around the implementation of education 5.0. This was compounded by lack of exposure to timely, tailormade training prior and during the initiative as well as refresher courses. Hence, most of the teachers have been clueless about the components and how best to implement them. Lantarda (2022) supports that lack of expertise is a disservice to the implementation of any educational initiative. Thus, we learnt that with lack of expertise, teachers' potential was undermined.

Negative attitudes

While negativity was found to be rife amongst teachers, it was more evident in older teachers due to low perceived usefulness of the initiative and reluctance to shift from the old school way of doing things. Doubts were common whilst others disliked the fact that it meant more responsibilities in planning, mobilisation of resources, actual implementation, monitoring and remediation. This discouraged many teachers from actively participating in the implementation.

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

Large class size

It was learnt that large class sizes exceeding 50 learners have been a norm at all five schools and that translated to high teacher-pupil ratio (1; 50). Resultantly, this meant more workload and inability to meet the expected targets and demands of education 5.0 especially when it comes to research and innovation. Superficial execution of the components of education 5.0 has become the order of the day.

Time constraints

We learnt that time constraints undermined the implementation of education 5.0. Education 5.0 implied more concepts, approaches and depth yet no commensurate time was invested in the initiative. This has seen rushed implementation with little effort towards excellence. With the school timetable already overstretched, it has been impossible for more time to be channelled to all demands of education 5.0. Hence, effective implementation of education 5.0 was jeopardised since time constraints were inherent.

Conclusion

We learnt that teachers had different general opinions regarding education 5.0. Younger teachers regarded it as a useful, progressive and befitting transition from education 3.0, which could bring about more opportunities for the research, industrialisation and innovation and community development. For the elderly teachers (40%), it was worthless initiative which antagonised with their old-school principles of teaching and learning. While perceptions regarding the challenges of implementing education 5.0 tended to differ from one teacher to the other and from time to time, we established that teachers at the selected five schools had similar perceptions. Without adequate funding, incapacity to foster education 5.0 becomes a norm. Likewise, lack of expertise, negative attitudes, large classes and time constraints cannot be taken for granted in undermining the swift implementation of education 5.0.

Recommendations

From the findings and discussions above, the study concludes that, in order to implement education 5.0 successfully, there is need for the optimum funding towards education 5.0. Also, there is need for ensuring teachers welfare is appropriately catered for in all the facets for them to be flexible to implement education 5.0. There is need for optimum investment towards ICT infrastructure since education 5.0 and technology work hand in glove.

To add on, there is need for appropriate training to the implementers so that teachers will be equipped with the vital skills needed to promote effective implementation of education 5.0. Parents and guardians also need to be educated so that they can be able to complement teachers efforts in implementing education 5.0.

There is need for the Ministry, school authorities and community as well as the private sector to join hands in all matters regarding funding of education 5.0. This provides unity of purpose towards funding and social and emotional support needed for the effective implementation to materialise.

Citation: Mapenzi, M; Muzenda, D & Muparuri, P. (2024). Teachers' Perceptions On Challenges Of Implementing Education 5.0 At Five Selected Primary Schools Of Mutoko District. *Journal of Popular Education in Africa.* 8(10), 141 – 151.

References

Alharbi, A. M. (2023) Implementation of education 5.0 in developed and developing countries: A comparative study, *Creative Education*, Vol 14, 914-942.

Canada, G. (2010) *Bringing change to scale: The next big reform challenge*, New York: Public Affairs, Perseus Books Group.

Creswell, J, W. (2014) *Research design: qualitative, quantitative and mixed methods approach* (4th Ed.), Sage Publications, London.

Dervojeda , K . (2021) Education 5.0 Dehumanizing education in the age of machines.

Jabri , M . and Jabri , E . (2022) *Managing organisational change*, Bloomsbury Publishing.

Johnson, R.B. and Christenson, A. (2017) Mixed methods research: A research paradigm whose time has come, *Educational Res*, 33, (7) 14-26.

Gupta, P and Bhaskar , P ," Teachers intention to adopt virtual reality technology in management Education , *International Journal of learning and change* , Vol 15 , No 1 , pp 28-50, 2023 .

Lantada, A. D. (2020) Engineering education5.0: Continuously Evolving engineering education, *International Journal of Engineering education* , Vol 36, No 6,

Maireva , C . & Mabika , P . (2022) *Role of Higher Education Institutions in Human Capital Development*, Transformation Human Resources Management in Zimbabwe Solution the Public Sector in the 21st Century (pp5-20) . Singapore.

Moodley, G. (2013) *Implementation of the new Curriculum and Assessment Policy Statements*: Challenges and Implications for teaching and Learning**,** South Africa.

Moleka, P. (2023) *Dispelling the limitations of education 5.0 and outlining the vision of education 6.0.*

Munikwa, S. and Mapara, J. (2022) Grappling with education 5.0 curriculum development in Zimbabwe higher education: The case of Chinhoyi University, *Journal of African Education*, Vol 3, No 2.

Muzira, D. M. and Bondai B. M (2020) Perceptions of educators towards the adoption of education 5.0: A Case of a state university in Zimbabwe, *East African Journal of Education and social sciences,* Vol 1, Issue 2.

Muzira D, M. & Muzira, R. (2020) An Assessment of Educators' Level of Concern on the Adoption of Education 5.0: A Case of One University in Zimbabwe, *British Journal of Applied Science & Technology* , 39, 17, 22-32.

Ministry of Higher and Tertiary Education Science and Technology Development Doctrine. The Modernisation and Indrustrialisation of Zimbabwe through Education Science and Technology Development.

Parmar , J . , Chouhan , S . , Raychoudhury , V . and Rathyore, S . , "*Open –world machine learning : applications , challenges and opportunities* , "ACM Computing Surveys Vol 55 , no . 10, pp 1-37, 2023.

Sharma , S. (2021) Entrepreneurship Development, PHI Learning Pvt. Ltd.

Zinhuku, P. (2021) The dawn of education 5.0 philosophy: Implications on musical arts pedagogies in universities, Zimbabwe, *Journal of educational Research*, Vol 1, Issue 2.