Sustainable Development Goal (SDG) 4 on Quality in Education, Current Issues in Zimbabwe Higher Education, Educating for the future

G.N. Shava, T. Chasara, O. S. Hahlani

National University of Science and Technology, Faculty of Science and Technology Education, Bulawayo, Zimbabwe

Abstract: **This article discusses current issues of Education for Sustainable Development (ESD) specifically focusing on Sustainable Development Goal (SDG4) on quality in education. The SDGs form part of the United Nations (UN) 2030 Agenda for sustainable development which was unanimously adopted in 2015 by all UN member states as a plan of action for sustainable development. Special focus of the article is on Sustainable Development Goal 4, which is oriented towards the achievement of educational quality within a lifelong framework. The United Nations Sustainable Development Goals propose that ESD has the potential to increase knowledge and strategies to meet Millennium Development Goals (MDG) and the needs of society which is the specific focus of SDG4 which strives on quality education. This article critically assesses how Zimbabwe higher education works towards achieving SDG4 which seeks to ensure quality education. In this article I argue that, ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability for present and future generations. Quality, sustainable and development education supports knowledge driven economic growth strategies and poverty eradication by generating new knowledge, building the capacity to assess existing stores of global knowledge and adapt that knowledge to local use. In this article we explore the achievement of SDG4 mapping insights from structure and agency approaches and theoretical view point. The article demonstrates that critical realist theory of structure and agency perspectives can contribute towards enabling and constraining the achievement of ESD. The theoretical view point contributes towards the understanding and achievement of transformation towards sustainability and can help to ensure a deeper understanding of current issues, relating to ESD and specifically on quality higher education.**

Key terms: **Education for Sustainable Development: economic growth and development: higher education, quality education: sustainable development Goal 4: Zimbabwe.**

I. INTRODUCTION

The UN Decade of Education for Sustainable Development (UNDESD) (2005-2014)significantly highlighted the crucial role that higher education must play in the universal journey towards sustainable development (Mohauty and Dash, 2018;Boereen, 2019; UN, 2015, UNESCO, 2017b). According to the United Nations Educational Scientific and cultural organisation (UNESCO) ESD is education that allows every human being to acquire knowledge, skills, attitudes and values necessary to shape a sustainable future (UNESCO 2014). Learning to change for a better world is key

catchphrase most often associated with the term ESD. Underpinning this education movement is a commitment to rethink the purpose of education and to reorient curriculum frameworks and pedagogical practice. Tilbury (2010) tells us that ESD seeks to shift education paradigms and extend learning opportunities so that people can contribute to more sustainable futures. The key strategies for engaging learners with sustainable development is through their experience of higher education teaching and learning and is a significant encounter with critical thinking, provocative questioning and alternative ideas about our current patterns of development and our potential to devise news of living.

This article explores the specific targets within the forth UN Sustainable Development Goal (SDG4) on quality higher education. The aim of the article is to explore the complexity and current issues of providing ESDin higher education. The article draws on structure and agency theoretical viewpoints (Giddens, 1984; Bourdieu 1984) to offer deep insights into the challenges of providing for quality in higher education context. Specifically the article focus on higher education provision in Zimbabwe, examining the role that individuals (agency) play in achieving ESD targets by 2030.

The article opens with a brief overview of the UN sustainable development goals, followed by discussions of current issues in Zimbabwe higher education on ESD. A separate section focuses on structure and agency approaches underlining their contribution to ESD. Building on this theoretical viewpoint the ten specific SDG4 targets on quality education are broken down mapping insights from structure and agency theoretical view point. The article concludes with some suggestions for increasing the quality of higher education teaching and learning.

II. SUSTAINABLE DEVELOPMENT GOALS AN OVERVIEW

With the adoption of the UN Sustainable Development Goals (SDGs) in 2015, sustainable development and quality highereducation has now undoubtedly are at the very top of global agenda and current issues. According to the UN Educational, Scientific and Cultural Organisation (UNESCO, 2014) ESD is education that allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. The concepts of Sustainable

Development and Sustainability have been promoted to address global social economic and environmental challenges, including persistent patterns of absolute poverty and various terms of social and economic inequality (UNESCO, 2009). In this article I argue that sustainable development refers to the developments which take place among people that meets the needs of the present without compromising the ability of future generations to meet and achieve their own needs.

In September 2105, the UN formally adopted the 17 (SDGs) as an outcome of major global consultative process. UNDESD advocates for providing the opportunity to progress towards implementing universal quality education that fosters the knowledge, skills, perspectives, values and actions that lead towards more sustainable future (Boereen 2019). The (SDG) 4 recommends for quality education for all which has deep roots in many international declarations, among these are Universal Declarations of Human Rights`, Convention on Rights of the Child, World Declaration on Education for All, Dakar Framework for Action, Millennium Development Goals which all consider education as crucial for the well-being of individuals, nations and the world (Boerean 2019), Mohanty and Dash, 2018: UN, 2015). Considering education as a key driver for SDGs many international conferences were organised with the aim of bringing together global experience and expertise to highlight and strengthen the role of education in realising the SDGs, creating an opportunity to building upon the learning from UNDESD and recognising education as a key enabler.

The UN SDGs are not the first set of goals designed to help nations work together to achieve sustainability and development to create a clear planet and more just society. The previous agenda`s Millennium Development Goals (MDGs) were formulated in 2000 and included eight goals to be achieved by 2015:

- To eradicate extreme poverty and hunger.
- To achieve universal primary education.
- To promote gender equality and empower women.
- To reduce child mortality.
- To improve maternal health.
- To combat HIV/AIDS, malaria and other diseases.
- To ensure environmental sustainability and
- To develop a global partnership for development. (UN, 2000;Gabay, 2015).

On 1 January 2016, an ambitious new plan was launched which increased the number of goals from eight to seventeen as:

- To reduce poverty
- To end hunger
- To ensure health and we-being for all
- To ensure quality education for all
- To achieve gender equality
- To ensure clean water and sanitation
- To ensure affordable and clean energy

- To promote decent work and sustainable economic growth
- To build resilient and sustainable industry, innovation and infrastructure
- To reduce inequalities
- To build sustainable cities and communities
- To ensure sustainable consumption and production
- To take climate action
- To protect life below water
- To protect life on land
- To promote peace, justice and inclusive institutions and
- To Strengthen Global Partnership for Sustainable Development (Palmer, 2015; UN, 2015; UNESCO, 2017a).

In this article focus is on SDG4 which has 10 specific targets addressing the needs of education at all levels. The concept of lifelong learning for all is a key element of the SDG4.

The SDG4 proposes equal and inclusive education for all that is closely linked to the effective implementation of SDG16 which focuses on the promotion of peaceful and inclusive societies and most relevantly, on building effective and accountable institutions at all levels. The SDG4 advocates to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, this keeps the target that by 2030 all learners to complete free, equitable and quality education, leading to relevant and effective learning outcomes and also to ensure that all learners acquire knowledge and skills needed to promote sustainable development (Mohanty and Dash, 2018; UN, 2015; Van Den Branden, 2015). With the adoption of the SDGs in 2015, sustainable development is now undoubtedly at the top of global agenda. The sustainable development goal on education for 2030 targets to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all based on four focused areas:

- Expanded access to quality learning for all across the various levels of education
- Attention to the quality of education including content, relevance and learning outcomes across the disciplines
- Greater focus on equity for access and resources of education
- Gender equality across all levels of education with safe and supportive learning environment (UN, 2015).

Very recently (UNESCO, 2017a) ESD is placed at the centre of the 2030 Sustainable Development Agenda and has been widely acknowledged as a key enabler of all 17 sustainable development goals. Boereen(2019) tells us that sustainable education has been considered as renewable resources to be geared towards the acquisition of key competences of 21st century including Sustainable lifestyles work and habitat. In this article I argue that for Zimbabwe to achieve quality in higher education and education for sustainable development

there is need to have a system based on sustainable development policies, practices, curriculum, pedagogy and continuing education for all stakeholders, thus ESD requires for reaching changes to the way education functions in modern society. How to structure and implement quality higher education for sustainable development is a key challenge for the Zimbabwe higher education context. The other main challenge of implementing ESD in Zimbabwe is that the educational content especial in high schools and the curricula and pedagogy for ESD is not well rooted in existing school systems.

More recently, UNESCO report (2017a) advocates for ESD and quality in education to play an active role across the globe to empower all learners to take informed decisions and responsible actions for the improvement of the quality of teaching and learning. Thus UNESCO through the 2030 Agenda calls for a major reform in education systems of all countries to promote holistic and transformational education that would address learning content, pedagogy and outcomes, innovation and learning by doing and using a whole school approach to engage communities in achieving sustainable change (WEF, 2016).

Structure and agency perspectives on higher education

For this section of the article, I will focus on the SDG4 targets for enhancing the achievement of ESD. I will focus on structure and agency perspectives, especially referring to the role of individuals and higher learning institutions. The two perspectives of structure and agency will be used as a tool to further understand and unpack the ten SDG4 targets on quality education. To understand the complex reality of higher education issues, it is not enough to draw on individual or structural perspectives but a combination is recommended. This way of thinking recalls Gidden`s (1984) structuration theory which aims to understand the relationship between individuals and the structures around them (Bourdieu (1984). The bottom line of the structure and agency theoretical view point is that the individual and society are interdependent and thus both perspectives should ideally be included in understanding current issues relating to ESD and specifically on quality in higher education. The concept of structure and agency is interested in the structure of social reality and the extent to which individuals are free to act within the structure.

The new vision of Agenda 2030 seeks to transform lives through education, recognizing the important role of education as a main driver of development and in achieving the other proposed SDGs. This new vision is fully captured by the proposed SDG4. Ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all and its corresponding targets.

Quality education is at the heart of the 2030 Agenda for sustainable development and essential for the success of all SDGs. Recognising the important role of education, the 2030 Agenda for sustainable development highlights education as a stand-alone goal (SDG4) and also includes 10 targets on

education. Education can accelerate progress towards the achievement of all the SDGs and therefore should be part of the strategies to achieve each of them. The renewed education agenda encapsulated in Goal 4 is comprehensive, holistic, ambitions, aspirational and universal, and inspired by a vision behind, education is a public good.

SDG4 has been further broken down to ten targets based on the different roles to be fulfilled by different players in the institution. It is important for the players to co-operate and support each other, an idea underpinned by structure and agency theoretical view point. The targets of education 2030 are specific and measurable, and contribute directly to achieving the overarching goal. The reason for breaking the targets down into different perspectives is to increase knowledge of underlying actions that may help in reaching the targets. The ten targets are:

1. By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes (SDG4.1).
2. By 2030, ensure that all girls have access to quality early childhood development, care and pre-primary education (SDG4.2).
3. By 2030, ensure equal access for all women and men to affordable and quality technical vocational and tertiary education, including university (SDG 4.3).
4. By 2030, ensure sustainability and increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent work and entrepreneurship. (SDG 4.4).
5. By 2030, ensure ultimate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable including persons with disability, indigenous peoples and children in vulnerable situations (SDG 4.5).
6. By 2030, ensure that all youth and substantial proportion of adults, both men and women, achieve literacy and numeracy (SDG 4.6).
7. By 2030, ensure that all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and no-violence, global citizenship and appreciation of cultural diversity and of culture`s contribution to sustainable development (SDG 4.7).
8. By 2030, Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent , inclusive and effective learning environment for all (SDG 4.8)
9. By 2030, substantially expand the number of scholarships available to developing countries, in particular least developed countries, Small Island developing states of African countries for enrolment

in higher education, including vocational training and information and communication technology, technical engineering and scientific programmes in developed countries and other developing countries (4.9).

10. By 2030, substantially increase the supply of qualified teachers including through international co-operation for teacher training in developing countries and small Island developing states(4.10) (Boeren, 2019, WEF 2016, UNESCO 2017a UN 2015).

The heart of education 2030 lies at the national level to provide the necessary agency and structures which have the primary responsibility to deliver on the right quality of education and control role as custodians of efficient, equitable and effective management and financing of public education. It is important to understand that the achievement of Agenda 2030 on quality higher education in Zimbabwe depends on the individual agency who live within a structured environment which is defined by its own rates, policies and resources. The bottom line of the work on structure and agency is that he individual and society are interdependent, and thus both perspectives should ideally be included in the debate on ESD and quality in higher education teaching and learning.

III. STRUCTURE AND EDUCATION FOR SUSTAINABLE DEVELOPMENT

Archer (1995; 1996) views structure as forms of social organization, as well as the social relations that comprise them. Gidden`s (1984) structuration theory aims to understand the relationship between individuals and the structures around them. The availability of high quality learning structures and settings are vital for good quality of education. Structure comprises of roles, organisations, institutional structures, systems, policies committees, structures and positional levels within the organization (Archer 1995). Structure also includes the material conditions which would motivate action (Archer 1995; 1996; 2003). The organizational structure refers to the skeletal framework within which people carry out their work. Higher education academics direct structural changes that will establish positive conditions for teaching and learning. Giddens (1984) sees structure as what gives form and shape to social life, but it is not itself that form and shape. Structures in higher education (Madzielwana and Maphosa 2013) relates to material resources and to the recurring patterns of social behavior or to the inter relationship between different elements of society around the distribution of these material resources and patterns of behavior. Thus Archer (2003) observes that people (agency) are born into or in pre-structured context which is a product of the doings or activities they do. In this case higher education academics are actors that operate in higher learning institutions and responsible for influencing the achievement of ESD in their institutions. According to Archer (2003), byanalyzing structure, one can either focus on positional levels, roles or institutional structures which are crucial for achieving ESD. In this article I argue that investment in higher education in Zimbabwe is crucial to achieve Agenda 2030 and it should be noted that universities support the rest of the state education systems. It is doubtful that any developing country could make significant progress towards achieving Millennium Development Goals (MDGs) and more so Agenda 2030 without strong higher education institutional structures. Higher education institutions are necessary for sustainable progress in the rest of the education systems. Higher education institutions in Zimbabwe have seen little or no infrastructure improvement for the past few decades. Teaching and learning infrastructure is widely deficient due to insufficient budget and over dependent on public financing and this has greatly compromised the achievement of Agenda 2030 on ESD. Access to infrastructure such as internet, laboratory equipment and classroom space is limited in all universities, against a background of over enrolling, resulting in overcrowding which hinders critical thinking and problem solving, resulting in deterioration of quality of allocation and learning. The poor state of facilities also affects the quality of research among academics and its ability to contribute to sustainable development or societal development and progress. Zimbabwe is at risk of being further marginalized in a highly competitive world economy because its higher education systems are not adequately resourced to provide for the achievement of ESD. The cost of insufficient investment in higher education infrastructure is enormous.

In this article we argue that quality management system implementation is limited in most higher education systems in Zimbabwe due to poor higher education institution readiness for high standards, lack of funding, slow redistribution, absence of established quality improvement systems, absence of adequate conditions of quality management system implementation and the breadth of personnel experience in quality management.

Zimbabwe higher education institutions do not possess adequate infrastructure and facilities and funding needed to make them beneficiaries of global knowledge and to generate or adapt knowledge, innovation, critical thinking, problem solving which are key elements of ESD. There is little investment in research, ESD and in high priority areas such as agriculture and natural resources, applied sciences, health sciences, engineering and technology due to lack of infrastructure. This has been seen to be limiting higher education systems to integrate themselves to global knowledge networks and achieving SDG4 on quality education.

Agency and Education for Sustainable Development

Agency is defined by Archer, (1995:1996) as the reflective, creative and purposeful actions of people. It refers to the actions or the choices that people make in their daily lives which either reinforce existing structures and cultures or transform them. It is what people do as individuals or groups with what they have collectively produced. Giddens (1984) tells us that agents continuously monitor their own thoughts and activities as well as their physical and social contexts.

They realize their world by developing routines that not only give actors a sense of security but enable them to deal efficiently with their social lives. Archer (2003) argues that even though structural and cultural systems impose constraints on the actions of people, it is important to understand that people are reflexive actors. Higher education personnel are reflexive actors who play a significant role in enhancing the achievement of SDG4 on quality higher education.

The way people in organisations behave in their present may either reinforce or transform existing cultures and structures in the future. Archer (2003) argue that agency have the potential to shape the situation in which later generations of actors find themselves in by endowing various agents with different vested interests according to the positions they occupy in the structures they inherit. People have their own emergent powers which cannot be reduced to those of structure and culture. Their agency has power to shape society, and it exists independently of our wishes for what society should be like. This therefore means the achievement of ESD and especially achievement of SDG4 on quality higher education in Zimbabwe depends on the agential powers of academics who are key to the transformation process. Agency therefore is a necessary concept to interrogate in trying to understand the achievement of SDG4 in higher education. Archer (2003; Bhasker 1979; 1978; 2010;2011) argue that structure and agency operate in a dialectical relationship with one another. Higher education social change or transformation towards quality education will need to be explained by the particular structures and the particular agency involved. People`s conception or idea about social structures influence their disposition towards those structures. Social structures come about and are maintained through the people`s ideas. People always act out structural circumstances, which their actions then proceed to modify or sustain. Archer (1996) shows that social structures are the outcome of past social interaction between agents which condition the extent in which current agents find themselves, and the way in which current agents respond to their context shapes the social structures in which future agents find themselves. This therefore means that academics and their programme directors in higher education, have the capacity for causal impact through their individual properties and powers given the roles and positions they occupy and the ways in which they occupy them.

Critical realist theory of structure and agency is a paradigm which is increasingly used by a number of researchers and in this article I find it suitable to understand the achievement of SDG4 on quality higher education in Zimbabwe. The justification of it being that it takes into consideration the fact that in any setting, any entity will have cultural, structural and agential properties (Shava and Heystek 2018) that play the role of enablement or constraints. It is how they interplay with each other that lead to the variability of outcome in any situation. Archer (2003) also argues that structure and agency constitute two distinctive and irreducible properties and powers and these human reflective deliberations play a crucial role in mediating between them. Archer`s morphogenetic approach clearly distinguishes structures from agency, thereby making it easier to analyse their relationship hence offering a fruitful avenue to understand how social educational dynamics of change, power, quality transformation, causality and agency operate at all levels in higher education.

The major challenge of achieving ESD especial on quality higher education in Zimbabwe is the critical shortage of skilled academics. The shortage of skilled professionals in Zimbabwe has its roots in higher education systems that are in a crisis. Although Zimbabwe`s universities ought to be the breeding grounds for the skilled manpower which the country needs, they are plagued by critical shortages of teaching faculty and research scholars. Higher education institutions in Zimbabwe are largely unable to retain qualified faculty and research scholars (agency). Universities also face shortages of technical, administrative, and management staff that play a crucial role in supporting ESD initiatives. The shortage of qualified academics (agency) cripples not only the universities but also affects the other levels of education services, health care systems and overall economic activities. Embedding quality into higher education is a challenge given the complexity of retaining qualified personnel. Kelly and Dikkers (2016) stressed the importance of effective leadership, adequate qualified staff resourcing, clarity of policies and commitment to achieve ESD, communication and feedback, planning and managerial commitment and staff training and development as key to achieving quality in higher education teaching and learning.

Zimbabwe higher education is not in a position to provide for quality higher education and ESD, the root cause of the main challenges lie in the lack of qualified agency or faculty academics and the debilitated institutional capacities due to lack of maintenance. Zimbabwe higher education institutions are severely affected by brain drain due to poor working environments. The other challenge facing higher education implementation of the 2030 global agenda on quality education, are the university structures and agency that remain highly inflexible and resistant to change, financial support is also lacking due to lack of management commitment and ESD cannot be achieved in the absence of ESD in universities` vision and strategic plan. The road to greater integration of ESD within Zimbabwean higher education institutions has been a rocky and circuitous one and often strewn with resistance to change emanating from top management and the majority of academics who are retired and cannot use current methods of teaching and learning. The history of ESD in Zimbabwe shows that little can be achieved due to lack of motivation among academics and very few academics are prepared to face the sometime task of breaking down the various barriers to the implementation of ESD leading to quality teaching and learning. The lack of commitment and financial support on the part of government has also meant little progress in the implementation of ESD. The regular changing of heads of ministry of higher education has affected the implementation of ESD with different ministers coming up with different policies and strategies. The SDGs and ESD

call for inclusive and accessible quality education, might be difficult to achieve if academics are unaware of how to achieve this through their work and more so in the absence of university vision statement on ESD.

IV. ZIMBABWE HIGHER EDUCATION TRANSITION TOWARDS SUSTAINABILITY AND QUALITY TEACHING AND LEARNING

As ESD requires far reaching changes in the way education is delivered, UNESCO sponsored the UN DESD from 2005-2014 and the Agenda 2030 Incheon Declaration to create greater momentum worldwide to bring the collective weight of educational resources to bear on the delivery of education and learning that lead to a more sustainable life in future. Higher education in Zimbabwe has over the past years faced multiple challenges associated with the transition towards sustainability and quality in teaching and learning. The 2030 global goals brought education and sustainability together with world stage nominating targets and objectives which were designed to empower education systems as agents of change towards the campaign against poor quality education. The UN DESD 2005-2014 together with the Incheon declaration 2030 global goals provides a significant platform to enhance the profile of ESD in both formal and informal learning spaces and ultimately to assist in transforming our future into a more sustainable one. The UN DESD 2005-2014, declared by the international community in response to a recommendation made at the world summit for Sustainable Development, intends to take these discussions to yet another level and ensuring all countries including Zimbabwe to move towards the transition leading to sustainability in higher education. Considerable discussion on the necessity, basic concepts and objectives of ESD has taken place in Zimbabwe and the international community and the importance of passing ESD to future generations has been widely recognized. Zimbabwe is facing the most important challenge of figuring out how universities that are at different stages of development will be able to implement ESD in order to make it a success.

In Zimbabwe ESD is acknowledged by both policy makers and scholars as fundamental for sustainable development. In Zimbabwe UNESCO established the **Sustainability Starts with Teachers** capacity building programme for Teacher Educators on Education for Sustainable Development. Universities and Teachers Colleges arguably play a significant role in fostering a deep understanding of sustainability among students. In tandem with a growing international focus on ESD a wide range of initiatives have been developed in the Zimbabwean higher education landscape to facilitate the adoption of ESD. The sustainability starts with teachers agenda acts as a driver for transforming higher education in order to respond to African sustainable development concerns, and 21st century concerns and challenges. Insights that are gained from the ESD changes projects are meant to be feed into the Southern African Development Community (SADC) region`s intentions to strengthen education and sustainable

development, and the international UNESCO Education 2030 programme. The ESD change projects adopted in Zimbabwe will contribute to national implementation of Sustainable Development Goal 4, quality lifelong learning and education, target 4.7 which requires educators to integrate ESD into education programmes and institutions. The ESD change project initiated in Zimbabwe higher education system has the following qualities which serve as guideline for conceptualizing and planning the ESD change project.

- Respond to and potentially contribute towards relevant national and institutional policies and strategies.
- Aligned to national institutional curricula frameworks and potentially contribute towards curriculum innovation.
- Has clear learning ESD thrust, addressing ways of teaching and learning that are transformative, and that develop critical and creative competence, such as social learning, expansive learning, transformative and trans disciplinary research and learning, drawing and contributing to plural ways of knowledge, creativity and innovation.
- Enhance inter-departmental engagement and communication, co-designed and jointly implemented since ESD cannot be solved by using a single discipline approach.
- Has a whole institution approach, striving to integrate sustainability principles in campus facilities and management, teaching content and methodology and partnerships and in working with external stakeholders.
- Focus on a variety of learning domains; cognitive learning objectives, socio-emotional learning objectives, behavioural or action oriented learning objectives, transformative social learning objectives or outcomes.
- Fosters lifelong learning, in line with the opportunities and challenges of the knowledge society. This is premised on the fact that society is continually transforming and requires life-long learning through the acquisition and development of learning to learn competencies, critical thinking and creativity, flexibility and adaptability as well as problem solving skills and attitudes.

Universities are also directing ESD innovations by working with teacher education colleges to create change. For example, as part of the ESD, Zimbabwe universities have joined the Southern African-Nordic, which is committed to advance strategic, multilateral academic collaboration between institutions in the Southern African and Nordic regions seeking to address new local and global challenges of innovation and development (see SANORD) activities and research theme group projects.

Zimbabwe higher education through the sustainability starts with teachers project is an action learning programme centred

on a contextually defined ESD Change project. The project is run by higher education institutions with a community of practice made up of a group of people who are willing to work together on a practice, and to learn from each other. The purpose is to develop innovative, exemplary ESD practices that can be more widely shared in the SADC region and internationally with Africa, and the UNESCO and SARUA networks and structures. The change projects that Zimbabwe higher education seeks to undertake are based on the following 17 Sustainable Development Goals.

- *Goal 1:* End poverty in all its forms everywhere.
- *Goal 2*: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- *Goal 3:* Ensure healthy lives and promote well-being for all at all ages.
- *Goal 4:* Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- *Goal 5:* Achieve gender equality and empower all women and girls.
- *Goal 6:* Ensure availability and sustainable management of water and sanitation for all.
- *Goal 7:* Ensure access to affordable, reliable, sustainable and modern energy for all.
- *Goal 8:* Promote sustained, inclusive and sustainable economic growth, full productivity employment and decent work for all.
- *Goal 9:* Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- *Goal 10:* Reduce inequality within and among countries.
- *Goal 11:* Make cities and human settlements inclusive, safe, resilient and sustainable.
- *Goal 12:* Ensure sustainable consumption and production patterns.
- *Goal 13:* Take urgent action to combat climate change and its impacts.
- *Goal 14:* Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- *Goal 15:* Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reserve land degradation and halt biodiversity loss.
- *Goal 16:* Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective accountable and inclusive institutions at all costs.
- *Goal 17:* Strengthen the means of implementation and revitalize the global partnership for sustainable development (UN, 2015).

All higher learning institutions are invited to map out as a matter of concern in their local context to identify the matters of concern and start the change project.

In Zimbabwe higher education context ESD is acknowledged as fundamental for achieving the 17 sustainable development goals. Zimbabwean higher learning institutions have arguably played a significant role towards the transition to achieving ESD and the SDGs in general despite the multiple challenges the universities are facing. The policies and guiding principles for adopting ESD have been echoed in several higher education conferences in Zimbabwe and in other research related gatherings.

ESD has been initiated in the Zimbabwean higher education context but as is characteristic of other African countries its activities tend to face challenges given the fact that higher education institutions are compared to huge oil tankers due to their size, slow pace to travel and inability to turn quickly. In terms of teaching, ESD seems not to greatly figure and even environmental education is only offered on an optional basis at some pedagogical faculties.

V. CONCLUSIONS AND RECOMMENDATIONS

This article has used the critical realist structure, agency perspective to structure a discussion on the implementation of ESD, specifically focusing on (SDG4) on quality higher education in Zimbabwe. Assessing the progress in the implementation of ESD in Zimbabwe higher education and hopefully the entire African region is an ambitious undertaking particularly since many higher learning institutions are still trapped in definitional disputes or see ESD as primarily the concern of faculty of education or formal educators. The need to position ESD on a multi-disciplinary approach and within frameworks relevant to all stakeholders across Zimbabwe is crucial. To develop a holistic and consistent sustainability oriented higher education system in Zimbabwe, the greening which is a more direct approach of higher education should be undertaken over a relatively wide area of university life. Recognizing that the roles of universities in Zimbabwe are changing rapidly in a country that is facing economic growth challenges and several sustainability challenges, Zimbabwe universities have embraced ESD as a major guiding principle for its journey forward and to achieve SDG4 on quality education. The main challenges of implementing ESD are emanating from the structural and agential conditions in the universities. In most universities in Zimbabwe, it is quite clear that he traditional discipline based structuring of knowledge, teaching and research are there to stay. There is total resistance to change. This is a major challenge for the universities when implementing learning for sustainable development in universities. In Zimbabwe higher education systems there are also significant barriers in terms of staff awareness, expertise, apathy, lethargy and institutional commitment to further progress the sustainability embedding process and progress. In all universities in Zimbabwe academics and institutional structures favor status quo and there is substantial inertia

towards external drivers that are linked towards transforming the education system. Most academics would prefer to teach the way and using the same methods they were taught during their undergraduate teaching which is more than sixty years ago. However, some shifts in perception towards understanding ESD as a learning imperative seem to be evident in some universities that are seeking to transform their education systems in line with the 2030 global agenda for sustainable development. The proliferation of new technologies in higher education teaching and learning and competition from alternative sources provides a tiny flotilla of ESD boats may not survive the tide of global change. As the old saying goes "you can go with the flow" and this has been clearly played out in Zimbabwe higher education and in the lack of systematic shifts towards ESD in higher education. From the key issues raised in this article I can conclude that if Zimbabwe is to achieve sustainable development goals, especially SDG4 on quality education higher education has to adopt ESD as a process and mechanism for making the education system robust, progressive and sustainable. There is need to adopt an education system or an organization that promotes the awareness of the complexities, diversities and uncertainties of the surrounding world and promote changes through ESD. Strategies can be considered as reflexive in relation to social movements. The primary purpose of adopting ESD is to build up an institutional culture that would improve learning and help students to become responsible individuals by fostering sustainability for the sake of quality education, equality sustainable consumption and practices to protect our environment and make Zimbabwe a place of safe and sustainable habitat.

VI. RECOMMENDATIONS

Having explored the 10 SDG4 targets, reflecting on structure and agency perspectives, a number of overarching and ambitions recommendations are made for further discussions among researchers and policy makers. As the target year for the achievement of the 2030 Agenda with its 17SDGs is approaching, Zimbabwe higher education needs to adopt new forms of governance, education, learning and capacity building in order to bring about reform and transformation. Zimbabwe should seek to improve the basic unit of the education system that emphases the human efforts (agency) and material conditions and equipment (structure) which could collectively improve students` learning, teachers performance and school culture. Literature on ESD and SDGs for 2030 advocates for whole institutional approach to bring sustainable development in the institutional vision, routines and structures, professional knowledge creation and pedagogical practices.

Kelley and Dikkers, (2016) argue that education institutions are more likely to be successful in implementing ESD if they manage to attract high-quality staff and educators (agency) engage in effective and efficient educational management and stay on top of their finances and reach out to local communities to make their educational offers known, this is likely to be important in relation to SDG4.3. Ensuring sufficient funding to invest in higher education and the refurbishment of infrastructure is essential and a common theme across all SDG4 targets.

Evidence from literature teaches us that participation in education and high levels of educational attainment correlates with a wide range of indicators concerning good health, well-being, active citizenship and employment. The implementation and maintenance of high-quality education systems across the glove is therefore highly recommended. The benefits of participating in high quality education can be both monetary and non-monetary, and occur at the individual and societal levels. Many of the SDGs and their targets may be easier to achieve when strong investment and accessible systems of education and training are put in place, leading to stronger knowledge based infrastructure.

In Zimbabwe there is need for stronger and increased commitment to invest in quality education and sustainability. There is also need to provide incentives as well as professional development opportunities for academics, senior management in higher education and education administrators to take note of the changes required for higher education to make a contribution to the SDGs achievement. In Zimbabwe there are no programs offering sustainability training for academics and higher education senior management. Such training programs could be the key to scaling up practice and joining up the dots within and across institutions so that sustainability becomes a central component of the culture of all higher education institutions in Zimbabwe. Many of the SDG4 targets may be easier to reach when strong and accessible systems of higher education and training are put in place and creating a culture of quality teaching and learning in higher education. Access to quality higher education may play a pivotal role in reducing social inequalities, poverty and literacy problems. There is also need for Zimbabwe to focus on, professional development for academics, introduce sustainability knowledge as a critical concern in research and teaching, staff training, institutional support and campus student life services outreach and forming partnerships both locally and globally to enhance sustainability and most important the inclusion of ESD visions in strategic plans and mission statements. Tilbury (2011) stresses the need for different views of pedagogy that includes active and participatory learning, critical thinking, discovery learning and management that is spread across educational systems and developing synergies though ESD across communities and universities. In teacher education is particular, research into commonly adopted ESD pedagogies should be given high priority. higher education should play a key role and contribute significantly to ESD in the development of appropriate knowledge and competences.

The education of educators in higher education should be considered as a cornerstone in the transition of ES towards sustainable development and as key element in effectively implementing ESD in curricula and educational programmes.

Boereen (2016) tells us that teachers are vital players in the education arena. They facilitate learning and put education policies into practice. From a structure and agency perspective, teachers act as vital bridge builders between society and individual agents. The SDGs call for inclusive and accessible education for all, but this might be difficult to attain if teachers are not well trained and unaware of how to achieve this through their own work. As outlined in the tenth target SDG4.10 there is a pressing need for teachers in Zimbabwe and the entire developing world to be well developed.

Finally, because of their intellectual capacity and hence their role in the knowledge society, universities the world over are considered to be key actors in achieving a sustainable future. That being the case governments should make adequate investment in the infrastructures of higher education and training as well as investing in continuing professional development of academics in relation to access, inclusive and quality education.

CONFLICT OF INTEREST

This was a study carried out as a desk top. There is no conflict of interest in this study.

STATEMENT OF DATA AVAILABILITY

Data for my study is available on the drafts that I prepared and also on my soft copy documents that I have kept. Notes for the manuscript are available

REFERENCES

[1] Archer, M.S. (1995). *Realist Theory: the Morphogemetic Approach*. Cambridge: Cambridge University Press.
[2] Archer, M.S. (1996). *Culture and Agency: The place of culture in Social Theory*. Cambridge: Cambridge University Press.
[3] Archer, M.S. (2003). *Structure, Agency and the Internal Conversation*. Cambridge: Cambridge University Press.
[4] Bhasker, R. (1978). *The possibility of Naturalism*.2nd ed. Sussex.HernelMermpstead; New York. The Harvester Press The Harvester Press, Routledge.
[5] Bhasker, R. (1979). *The possibility of Naturalism* 1st ed. Sussex.Hermel Hempstead: New York. The Harvester Press; The Harvester Press: Routledge.
[6] Bhasker, R. (2011). *Reclaiming Reality: A Critical Introduction to Contemporary Philosphy*Oxon: Routledge.
[7] Bhasker, R.(2010). *Contexts of Interdisciplinary: Interdisciplinarity and Climate Change. In Interdisciplinarity and climate change: Transforming knowledge and practice for our Global future*. Edited by Roy Bhasker, Cheryl Frank, Karl G. Hoyer, PelterNaes, and Parker Janneth, 1-23 Abigdon Oxen.
[8] Boereen, E (2019). Understanding Sustainable Development Goal (SDG) 4 on quality education for Micro, Meso and Macro perspective International *Review of Education* 2019(65) 277-294.
[9] Boereen, E. (2016*). Lifelong learning participation in a changing policy context.An Interdisciplinary theory*. London: Palgrave MacMillan.
[10] Bourdien, P. (1984). *Distinction.A social critique of the judgment of taste*.London Routledge.
[11] Gabay, C. (2015) Special forum on the millennium development goals: Introduction. *Globalisations,* 12(4) 576-580.
[12] Giddens, A. (1984). *The Construction of society*: Outline of the theory of Structuration. Cambridge. Blackwell policy Press. http://unesdoc.unesco.org/uhs/cgi-bin/ulis.plca catno-191442 & set = 4D 934944 -3-1 & gp=&lin=1 & 11=CAgenda/education-for-sustainable development.
[13] Kelly, C. &Dikkers, S. (2016). Framing Feedback for School Improvement Around Distributal Leadership. *Educational Administration Quarterly*, Vol 52 No 3 pp. 392-422.
[14] Madzielana, N P O Maposa, C.(2013). The Influence of Context in the South African Higher Education System: A Social Realist Critique. *Journal of Sociology and Social Anthropology*.4 (3).175-181.
[15] Mohanty, A & Dash D. (2018) Education for Sustainable Development. A conceptual model of sustainable education for India.*International Journal of Development and Sustainabilty*.Vol 7(9) 2242 – 2255.
[16] Palmer, E. (2015). Introduction.The Sustainable development goal forum *Journal of Global Ethics,* 11 (1) 3-9.
[17] Shava.G. and Haystek J. (2018). Agency and Structure: Principals` Ability to Bring about Sustainable Improvement in under performing schools in South Africa. *Africa Education Rewiew*http://doi.org10.1080/18146627.2017.
[18] Tilbiry, D. (20111) *Education for Sustainable Development: An expert Review of processes and learning*. Paris. From http://www.unesco.org/new/en/education/themes/leadingikenternational
[19] UN (2015) *Transforming our world: The 2030 agenda for sustainable development*. New York, UN From htt://sustainabledevelopment.un.org/content/documents/2125203% 20 Agenda for sustainable20 development 2020 Development,,, web pdf.
[20] UN (United Nations) (2000).*United Nations Millennium declaration*.A/RES/55/2. New York: United Nations. From http://www.un.documents.nee/a 55r2.htm
[21] UNESCO (2009a) *Learning for a sustainable world: Review of Contexts structures for Education for Sustainable Development,* Paris, UNESCO. From: http://www.Unesco.org/education/justpublished-desD 2009.pdf.
[22] UNESCO (2014) *Education for Sustainable Development*.fromhttp://www.unesco.de/site/default/files 2018/unesco-education for sustainable development-goal pdf.
[23] UNESCO (2017a) *Education for Sustainable Development Goals: Learning objectives*. Paris.UNESCO. From http://www.unesco.de/site/default/files 2018/unesco-education for sustainable development-goal pdf.
[24] Van Den Branden, K. (2015) Sustainable education: exploiting students` energy for learning as a renewable resource. *Sustainability,*Vol (7) 5471-5487.
[25] WEF (World Education Forum) (2016) Incheon declaration and Framework for action for the implementation of Sustainable Development Goal 4.*Towards inclusive and equitable quality education and lifelong learning opportunities for all.*Education 2030 Paris UNESCO.From http://unesco do. Unesco.org/images 10024/00240056/24556epdf