Intellectual Output for Innovation and Enhancement of Socio-Economic Transformation

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1.0 Introduction

It gives me tremendous pleasure and an immeasurable satisfaction to be here today at the Zimbabwe Open University International Research Conference for a variety of reasons. Let me focus on four of these reasons to support this assertion.

First, even though I have been to this beautiful country a number of times, I have not until now, had the fortune to visit the Zimbabwe Open University (ZOU), in spite of the several previous invitations, which for one reason or the other, I was unable to honour. Thanks to the persistent effort by the vivacious and result-oriented Vice Chancellor, Professor Primrose Kurasha, I have finally made it and we can all be happy, while our worries and anxieties are now consigned to obscurity.

Second, any university worth its salt must of necessity engage in the three pillars of academia which are fundamental to the dominant culture of a traditional university. These are teaching, research and scholarship which characterise what is known as the collegial culture in traditional universities. We shall further discuss this later in this paper. But suffice it to say that many traditional universities are made famous mainly through their research output, the patents and intellectual property they get therefrom, and the ranking they receive on the league table of world-class universities in the current global rankings of universities.

Third, from the information reaching me, the International Research Conference (IRC) has become an integral part of the annual calendar of ZOU since 2011. The most interesting and rewarding aspect of the activity, is not just holding the annual conference for its own sake, but that it is used as a practical avenue for capacity building in research for the staff of the university. I gathered that from the previous conferences 'about 200 upcoming ZOU researchers have been exposed to an academic forum where they have been inspired to pursue scholarship'. Furthermore 'at least 50 seasoned ZOU researchers have been encouraged through this annual conference to share best practices in the realm of ODL'.

I therefore commend the effort of the ZOU for the forward-looking decision which, I can assure you, will in several years to come begin to yield gigantic dividends of unimaginable proportions to the individual, to the university and to the larger community locally and globally. Not many single mode Open and Distance Learning universities have got this foresight. Indeed, by the nature of ODL, the priority has always been to develop or and build on the instructional design and delivery integrity of the institution, at the disadvantage of research. That your university is attempting to excel in all the three pillars of a university culture is noble and commendable and worthy of praises being showered on the Vice Chancellor, management and staff of the University. I do hope that the Ministry of Higher and Tertiary Education, Science and Technology Development, would note this and reward ZOU appropriately and adequately through an enhanced budget specifically for research.

Fourth, is that I am really pleased that the orientation you have given to the research conference is to move it away from the esoteric to how research and its results can truly transform the society. In the contemporary society we live in, what is required are the tangible results of research which could immediately be ploughed into development to transform the society. I am therefore quite impressed that the Theme of this year's conference is addressing the ***Intellectual Output for Innovation and Enhancement of Socio-Economic Transformation***. Needless to say that the sub-themes seemed to have adequately taken care of the various areas in which transformation is required. They range from agriculture; tourism; environment; ODL to commerce and industry; and Science, Technology, Engineering and Mathematics (STEM).

Importance of Research

The importance of research, especially to developing countries, cannot be overemphasised. Research contributes to the existing reservoir of knowledge and makes a nation a part of the knowledge economy; it catalyses the social and economic transformation of a nation; provides the evidence that policy makers, technocrats and development programme planners require for planning; provides solution to operational and planning problems in business, government, and industry; and provides an avenue to satisfy the intellectual curiosity of humans.

All these can only be possible in an environment where education is used and regarded as the basis for sustainable development, be it local or global.

2.0 Education and Development

There is no gainsaying the fact that education is the propelling power of development in any nation or community. Whether political, socio-economic and other forms of development, no nation can make any appreciable progress without recourse to education which is the pivot on which all development sit. The justification for the use of education as a veritable tool to catalyse socio-economic development does not require any long argument or star gazing. The logic is quite simple: no development can meaningfully take place in any country unless you build the assets in human resources. Indeed, it was the Late Nelson Mandela, an anti-apartheid revolutionary, a Nobel Peace Prize Laureate, and former President of the Republic of South Africa, who alluded to this when he said that:

"Education is the most powerful weapon which you can use to change the world. No country can really develop unless its citizens are educated."

Unfortunately, its implementation has become a nightmare for many developing, especially the Sub-Saharan, countries where hap-hazard policy formulation and execution, coupled with either the absence or the lack of enforcement of ineffectual, laws and regulatory activities, to guide educational development.

In a number of African countries, whereas the cascading effects of all the levels of education are known to establish a composite whole in the implementation strategies of education for national development, each level is often taken in isolation of others. Furthermore, the apex of the system, being tertiary education, is often treated with planning that is not consistent with or designed for long-term success.

The literature has copious accounts of how nations have used education to directly raise the level of the living conditions of the citizenry of a nation, catered for their economy and drastically improve the other sectors. As succinctly stated by Acemoglu and Robinson (2012), there is a clear relationship between a country's institutional governance frameworks, economic policies, incentive structures on the one hand, and its economic progress on the other hand as determined by the education offered its people. The lack of appreciable development in Africa as compared with other continents of the world is easily adduced to the low level of attention given to education.

Indeed it is on record that, in the 80's, the World Bank's Structural Adjustment Programme which was sold to Africa and other developing countries was for higher education to be relegated to the background or indeed discarded and instead to focus and give priority attention to basic and primary education only. As discussed by Samoff & Carrol (2004) and reviewed by Obanya (2010) the structural adjustment emphasised

- Priority to basic education, as Africa's 'genuine area of need'.
- Considerable reduction in funding for higher education,as it has a low level of 'social rates of return'.
- Abolition of all forms of 'subsidies' to higher education, based on the same 'social rates of return' logic.

- Introduction of all forms of 'user fees' , since government must channel its resources elsewhere.
- Structural adjustments within the higher education sector – a check on 'resource-intensive' programmes, rationalisation of staff, students, and facilities, etc
- Decay in facilities, as the foreign exchange to maintain and update them became scarce and as government funding was getting less and less.
- A steady decline in the volume of funding of universities, as government budgets for education steadily declined (public recurrent expenditure per student was repoted to have declined from $6,461 in 1975 to $2,365 in 1983).

For all the sectors to develop adequately there must be the abundance of well-developed human capital to power them. Education is the manure which fertilises human capital development. Unfortunately, the commentary on education in Africa has not been very encouraging.

In terms of funding in Education and enrolment numbers, African appears to be doing well. For example, The World Bank report of 2009 informs us that between 2005 and 2007, African countries expended more funds on education more than most regions of the world. Enrolment in tertiary education has grown faster in sub-Saharan Africa than any other region over the last four decades. While there were less than 200,000 tertiary students enrolled in the region in 1970, by 2011 the number rose to about 5.1 million.

As reported by the UNESCO Institute for Statistics, the gross enrolment ratio (GER) for tertiary education in Africa grew at an average rate of 8.6% for each year between 1970 and 2008 – compared to a global average of 4.6% over the same period. Out of 26 African countries reported on by the UNESCO Institute for Statistics in 2010, only the Central African Republic reduced spending on education. As a result of these investments, remarkable progress has been made in educational development in sub-Saharan Africa. Between 2000 and 2008, primary school enrolment in Africa increased by 48% – from 87 million to 129 million – between 2000 and 2008. Enrolment in pre-primary, secondary and tertiary education also grew by more than 60% during the same period. In spite of all these, the educational system in Africa is weak in quality and quantity indicators. Hence the inability of countries in our continent to develop the human capital needed for the emancipation of the continent.

Apart from these gains reported above, Africa is under-performing on a number of educational indicators. For instance, the region has 43% of the world's out-of-school children. Nearly 29 million children of primary-school age were not in school in sub-Saharan Africa in 2011, and 54% of them were girls. In sub-Saharan Africa, about 10 million children drop out of primary school every year. It is estimated that 38% of Africa's adults, about 167 million people, lack basic literacy skills. Out of this number 60% are women. While about 1.9 million teachers was needed in classrooms by 2015 to achieve Universal Primary Education in the whole of Africa, 1.1 million of them will be needed in sub-Saharan Africa alone (Obasanjo, 2014).

Africa, especially Sub-Saharan Africa, has come a long way. From days of colonialism, slavery and slave trade and, zero infrastructural development as per western indicators to a continent with 54 independent countries, regional economic bocks, modest strides in educational development and the economic emancipation of the people.

In spite of all the strides mentioned above, Africa is still far from getting out of the woods. The continent is heavily threatened by economic strangulation; political instability; conflicts and terrorism; fragility of some of our nations; endemic corruption; geopolitical imbalances and hatred; huge capacity development needs; extreme poverty; a preponderance of unemployed, underemployed and unemployable youths.

The data available indicate that as at January 2015:

- over 10 million seek employment annually and that 60 per cent of the unemployed are youths.
- at least half of the 1 billion people are still illiterate. Africa has the world's highest illiteracy rates.
- Sub-Saharan Africa is home to at least 30 per cent of the world's poorest people.
- Africa has at least six out of 10 most unequal countries in the world.

In order to survive the 21st century development imperatives, some of the urgent needs of Sub- Saharan Africa include, but not limited to, the following:

- Building of very strong economic foundation;

- Economic integration regionally and continently;
- Massive job creation;
- Embarking on effective food security measures;
- Health and environmental provisions;
- Innovations and creativity buoyed by education;
- Energy reforms and directing attention to combating climate change; and
- Massive investment in education, especially tertiary education.

3.0 The Africa We Need:

Africa must pull itself out of the depressing situation of an average GDP per capita of less than $350 in a world economy where the global GDP per capita is about $950. Dr Akinwumi Adesina, the President of the African Development Bank (AfDB), has opined that we need a

> ''new Africa with prosperous, sustainable and inclusive growth; one that is peaceful, secure and united, regionally integrated and globally competitive''.

The African Union Commission/the United Nations Economic Commission for Africa (UNECA)/the New Partnership for African Development (NEPAD) in a document called, *The Africa We want says* by the year 2063 there should be 'created an Africa of our dreams that is prosperous, healthy, vigorous, creative and exciting' (Versi, 2015).

To achieve this, as has been done in other parts of the world, Africa must re-focus on using higher education as the fundamental and virile instrument for continental, regional and national development.

4.0 Recent Imperatives on Higher Education and Sustainable Development

Contemporary global developments have shown that the future of anyone region is intricately intertwined with the future of the others. No region or country can develop in isolation and the inhabitants of planet earth have seen the reasons, more than ever before, why galvanised partnership to address sustainability from a common front has become more compelling. Education, and lately higher education, has been seen as a veritable answer to the sustainable development issues.

In recent times various global and regional agendas have risen up to the challenge of using education for development.

Higher education has receive recognition in recent time as a panacea for addressing climate change, employability, skills acquisition, entrepreneurship, human capital development and capacity building, gender issues, equity and community services. The literature has it that three main issues are attendant to the use of education for sustainable development. These are **access to higher education (**to allow students who would otherwise be denied educational opportunities to gain access to courses), **equivalence and integrity** of the programmes being studied and **excellence** (the quest for excellence in institutions and the services they offer). As the resolution of these issues continue to dominate the theory and practice of education, many countries, organisations and individuals in the world, especially those developing, including those in Africa, are becoming increasingly attracted to higher form of education.

As a result of the above, several initiatives have emerged as solutions to the issues of sustainable development and higher education. These include the recently adopted Sustainable Development Goals (SDGs), the 2015 United Nations Paris Climate Change Conference called the Conference of Parties 21 (COP21); The Continental Agenda 2063 of the African Union Commission produced in collaboration with the United Nations Economic Commission for Africa (UNECA) and the New Partnership for Africa's Development (NEPAD); and the Continental Education Strategy for Africa (CESA 2016).

The emergence of the Sustainable Development Goals (SDGs) agreed upon by member states at the United Nations Conference on Sustainable Development, which held from 20-22 June, 2012 in Rio de Janeiro, Brazil (popularly known as Rio+20) is, in my mind, to replace the MDGs which really did not fully solve the problems of Africa. The SDGs, as a major outcome of the Rio+20 Conference, will serve as the post 2015 development agenda of the world. It was decided in the Rio+20 document, *The Future We Want*, to establish an "*inclusive and transparent intergovernmental process open to all stakeholders, with a view to developing global sustainable development goals to be agreed by the General Assembly*".

A ‘Common African Position (CAP) on the post-2015 development agenda’ was debated at the July 2015 3rd International Conference on Financing for Development held in Addis Ababa. The CAP ‘takes into account a blend of finance sources. These include improving traditionally low domestic tax collection rates, staunching the flow of illicit flight capital and recovering stolen assets, tapping global financial markets, stepping up intra-African trade, South-South cooperation and public-private partnerships.’

The Common African Position has as its pillars the follow:

- Structural economic transformation and inclusive growth.
- Science, technology and innovation.
- People-centred development.
- Environmental sustainability, natural resources management and disaster risk management.
- Peace and security.
- Finance and partnerships.

Donald Kaberuka (May, 2015), in his valedictory speech as the outgoing President, to the annual general meeting of the AfDB has perfectly summarised the CAP and how finance and partnerships should interplay in the dreams to fully develop Africa. He says that SDGs will be largely funded through economic growth and transformation; through trade and investments; through sustained domestic efforts; domestic resource mobilisation; local capital markets; minimising illicit flows; better financial management; leveraging natural resources; and of course, smarter use of aid’’. The CAP must be used as a veritable instrument for educational transformation of Africa.

Furthermore, with specific reference to higher education and sustainable development, a ‘High Level Policy Forum which held in Pretoria, South Africa in October 2015, consisting of leaders from universities, colleges, regional, transnational and international associations as well as global networks from Africa, Arab countries, Asia, North America, Oceania and South America identified a series of strategic initiatives and actions aimed at addressing, on a regional basis, key challenges to help meet the sustainable development goals recently adopted by the United Nations in Paris in September 2015’. The Forum pointed to the

'issues of equity in terms of access to and success in higher education, the skills gap and the need for investments in life-long learning as needing urgent and serious attention.
The High Level Policy Forum stressed that "meeting the sustainable development goals requires real investment and innovation in higher education – business as usual will not produce the breakthroughs in social and economic development the world needs. Innovation in how we deliver education as well as what that education is focused upon are needed for all of our futures".

The Forum, which built on previous summits in Bali and Paris and the declarations at Incheon and Qingdao, developed preliminary action plans for each region of the world aimed at leveraging higher education to help achieve sustainable development worldwide. In doing so, The Forum stressed, as critical, the engagement of higher education in the construction of a global vision and pathway for Education 2030. The Forum further reminded us that 'with societies moving from a post-industrial information society to a knowledge economy, higher education, as a knowledge producer, has become a major force in the emerging global knowledge society.' The conclusions reached at the Pretoria meeting formed part of the Framework for Action Education 2030 adopted by UNESCO in November 2015 and states in part that "a well-established, properly-regulated tertiary education system supported by technology''.

The 37th General Conference of UNESCO held in October 2013, while observing an increase in access was grossly dissatisfied with the quality of graduates in Africa. A recent UNESCO survey indicated that there are FIVE main factors contributory to the low quality in higher education in Africa. These include depreciating quality of teachers; **research capacity deficit**; **inadequacies in facilities for teaching, learning and research;** lack of a regional quality assurance framework and accreditation system; and slow adoption of ICT for delivering quality higher education including distance education.

What goes on in the education sector and at all levels of education does not show that our educational institutions are creating any values at all. Indeed the values which our higher

institutions had between the 60s and the early 80th have long disappeared and all we have is a skeleton of what excellence represented in those days.

5.0 The Regional Status of Higher Education

According the World Bank 2015 State of Education in Africa Report 2015, *a* report card on the progress, opportunities and challenges confronting the African education sector,

"Higher education yields significant benefits for both African young people and society, as a whole: better employment opportunities and job prospects, improved quality of life, and greater economic growth. And investments in higher education pay off. Returns to investments in higher education in Africa are 21 percent—the highest in the world. As the world becomes more technological, the school curriculums in Africa need to evolve to provide the right education and training for jobs in today's workforce. A severe mismatch still exists between the skills of young African workers and the skills that employers need for today's global workforce".

But the Status Report on Africa is not at all impressive.

The Report listed the following as plaguing the higher education system in Africa.

i. Only **6 percent of young people** in sub-Saharan Africa are enrolled in higher education institutions compared to the global average of 26 percent.

ii. Overcrowding in lecture halls at some Africa universities is becoming all too common. Statistics show that on average there are **50 percent more students per professor** at African universities compared to the global average.

iii. In 2008, about 223,000 students from sub-Saharan Africa were enrolled in tertiary education outside of their home countries, representing **7.5 percent of the total global number of students** who study outside of their home country.

The cheering pieces of news are that:

iv. that universities in many African countries are experiencing a surge in their enrollment. Between 2000 and 2010, **higher education enrollment more than doubled**, increasing from 2.3 million to 5.2 million.

v. Private higher education is one of the fastest growing education sectors in Africa. In 2009, there were around **200 public universities and 468 private higher education institutions** on the African continent. Comparatively, there are 1700 public universities and nearly 2500 private universities (4- and 2-year universities) in the U.S. alone.

Information on current situation is that we have about 20 million in the various institutions of higher learning but African higher education sector needs about 456,000 teachers by 2020. This, in some way, must account for the less-than-successful achievement of the Millennium Development Goals (MDGs) in relation to Education in Africa.

As I have mentioned earlier, the role of higher education in the growth and development of Africa cannot be over emphasised. Higher education

- remains the fulcrum upon which all other developments (be it health, agriculture, and infrastructure, etc) rest.
- is the key to diversify growing economies
- builds the human resource base;
- produces the employable graduates and professionals;
- reinforces the platform to combat diseases,
- reduces energy costs and address climate change; and
- provides the compelling argument for seeking greater participation from private sector in the collaborative development of the continent.

However, while all the afore-listed are essential for the effective development of Africa, there are enormous challenges facing the higher education sector in the realisation of the roles itemised above. The challenges

- the need to expand access, improve quality, ensure equity, provide massive access to tertiary education,
- direct serious attention to innovation and creativity,
- rejuvenate the obsolete curricula in higher education,
- replace the old dilapidated/build the new infrastructure, and inject huge funds.

6.0 Research, Innovation and Socio-Economic Transformation

All the above, either through the enhancement of the role of higher education or addressing the challenges being faced within higher education itself or within the larger society, can only occur effectively if they are anchored on research. Research, which is the search for knowledge through an objective and systematised environment, is the backbone for any national development and transformation. No socio-economic development can eventuate if there is no appreciable quantum of research (Chukwuemeka, 2014). According to Olsson (2016), 'capabilities in research, technology and innovation are significant requirements for the transformation of societies as they strive to become integrated into a more globalised and knowledge-intensive economy'. In the 21st century what thrives is knowledge economy and only nations that position themselves appropriately through research to generate cutting edge, essential and relevant knowledge that will survive. Research must point a country in the right direction to enable the appropriate training of the workforce that will fill

the new kinds of job that are emerging. Research results should also provide the right skills for the next generation.

The above are the reasons, in addition to universities being regarded as strategic in the socio-economic development of countries, why higher educational institutions, especially universities, are well positioned to contribute to socio-economic development through research. The World Bank (2008) has reiterated that nations across the global continually depend on universities to produce knowledge, ideas and skills needed to pursue development and socio-economic transformation. This is why traditional universities, worth their salt, concern themselves with the three main pillars of academia: teaching, research and scholarship.

It is often argued (see Nebo, 2006; Eze 2013) that the level of development in a country, the amount of economic growth achieved by a nation and the quality of human resources produced in a country, mirror the quality of research produced by its universities. Countries with a weak university-based research lag behind others in all these. Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned (UNESCO, 2008).

Africa continues to remain developing with stunted economic growth and dearth of quality human resources because of what Chukwuemaka (2014) calls 'the slow pace of pursuit bothering on systematic stagnation of research activities'. This is of course why Africa with only about 70,000 researchers, has on the average, about 300 researchers per million population in contrast with other regions and countries of the world. For sub-Sahara Africa, the most recent figures available are 132 researchers per million population for Cape Verde (2002), 66 for Côte d'Ivoire (2005), 21 for Ethiopia (2007), 10 for Lesotho (2004), 50 for Madagascar (2007), 42 for Mali (2006), 16 for Mozambique (2006), 276 for Senegal (2007), 157 for the Seychelles (2009) and 34 for Togo (2007).

It is recorded that in 2005, China had 862,000 researchers, the United States had 1.5 million researchers, Japan had 675,000 and Russia had 487,000.

UNESCO (2014) has suggested that by the year 2025 Africa should reach a target of 1000 researchers per million population. However to achieve this, many critical changes must take place. Some of these will be discussed later on the way forward for Africa.

Related to the issue of researchers in general in Africa, the lack of research and researchers in Science, Technology, Engineering and Mathematics (STEM) is most debilitating. Yet, it is an open secret that no nation has made any appreciable progress in socio-economic development without ample number of scientists and research in STEM. I cannot agree more with UNESCO (2014) when it contended that most countries that have achieved a stable economic growth often rely on a critical mass of scientists in many fields in the scientific community. As reported by the African Development Bank (2014), Africa has only 35 scientists and engineers per million inhabitants, compared with 168 for Brazil, 2,457 for Europe, and 4,103 for the United States of America.

Table 1: International Scientific Journal & Country Ranking 1999-2015
Top 7 Countries of the World

World Ranking	**Country**	**No of Publications**
1	United States	9,360,233
2	China	4,076,414
3	United Kingdom	2,624,530
4	Germany	2,365,108
5	Japan	2,212,636
6	France	1,684,479
7	Canada	1,339,471

This shortage of STEM researchers has contributed immeasurably to the shortage of skills and capacity which in turn has led to the low level of innovation and knowledge generation in Africa. Africa has 13.4 per cent of the world's population but produces a miserable 1.1 per cent of the scientific knowledge. Four countries (34th, South Africa, 188,104 documents; 42nd, Egypt, 137,350 documents; 52nd, Nigeria, 59,372 documents; 53rd, Tunisia, 58,769 documents) are known to dominate the scientific publications in Africa with a total of about 76% of all the scientific publications produced in Africa. Our own dear country, Zimbabwe is ranked number 13 in Africa and number 96 in the world with about 7,243 documents) See Table 2 below. This is compared with the United States of America (1st, 9.34million documents), China (2nd, 4.07 million documents), Japan (2.2 million documents), and Canada (1.33 million documents). See Table 1 above.

Table 2: International Scientific Journal & Country *Ranking 1999-2015*
Top 13 Countries in Africa

World Ranking	African Ranking	Country	No of Publications
34	1	South Africa	188,104
42	**2**	Egypt	137,350
52	**3**	Nigeria	59,372
53	**4**	Tunisia	58,769
55	**5**	Algeria	42,456
56	**6**	Morocco	40,737
67	**7**	Kenya	24,458
78	**8**	Ethiopia	13,363
84	**9**	Tanzania	11,964
86	**10**	Ghana	11,543

87	**11**	Uganda	11,528
89	**12**	Cameroon	11,128
96	**13**	Zimbabwe	7,243

No country in Africa was among the top 20 countries in patent applications in 2015. The World Intellectual Property Organization's (WIPO), WIPO Patent Report: Statistics on Worldwide Patent Activity stated that for the period 1985 to 2015 the following patents were applied for: Total for the world (1,713, 079), China (801,135 patents), USA (285,096 patents), Japan (265,959), Israel (1,125patents), South Africa (802 patents), Egypt (752 patents), Morocco (355 patents), Kenya (132 patents), Zimbabwe (38 patents), and Nigeria (10 patents).

The terribly weak development of STEM has delayed the emergence of African countries as knowledge economies. Due to low investment and attention in research and development, Africa ranks low in global competitiveness, productivity, innovation and of course in socio-economic transformation.

7.0 Research in Traditional University Versus ODL University

There are marked differences between the way traditional face-to-face universities and open and distance learning universities look at research.

The traditional university espouses the collegial culture relying on the Socratic teacher-pupil relationship which the traditional university uses as the hallmark of higher education since the emergence of the university. The academic staff remain the centre piece, the academic capital, the basis for the uniqueness and reputation of the traditional university. It holds it very firmly that effective education only occurs face-to-face in traditional classes, laboratories, tutorials or seminars, in clinical or practical programmes carried out under the supervision of the academic staff. It is elitist and restrictive in nature.

The collegial culture is ascribed to the traditional university in which autonomy for academic staff has priority in teaching, scholarship and research. Promotion decisions on academic staff are hardly based on direct observation of the teaching performance in the classroom. Academic freedom receives prime place in the collegial culture where academic staff are free to decide on areas of interest for research purposes. The individual also engages in research without any compulsion to work as a team with other academics. The academic researcher is often in a race against him/herself to publish in order not to perish. Research publications are undertaken mainly for the reward value toward promotion and not with any serious consideration for national needs, interest or contribution to socio-economic development. If they relate to these, they are in many cases coincidental and or accidental. Academics often publish to impress their peers rather than dwell on the utility value of their research results, if any. If, as mentioned above, the major emphasis in the collegiate culture is on independent work-teaching alone, planning curriculum and courses alone and often researching alone, it goes without saying that this culture is diametrically opposed to the culture of the ODL university.

The ODL university is embedded within the developmental university culture. This culture is characterised by personal and organisational dynamics and institutional mission. The developmental culture puts teaching and learning as the core of the academic enterprise over and above scholarship and research. It uses an inter-disciplinary, problem-solving team approach to course development. Other factors that characterise the developmental culture are collaboration, commitment to inclusiveness in decision-making and planning, goal orientation, and emphasis on conflict resolution. Due to the fact that the ODL University concentrates most of its effort on instructional design, course material development, facilitation of learning, instruction at a distance, it gives little or no attention to research.

The academic researcher sees the culture of ODL as a threat to the integrity of the traditional instructional/ learning process. Instead of being the all-knowing academic teacher, the instructor in the ODL environment is a facilitator of learning. As a result of this, the culture of the traditional university is often at logger heads with the culture of the ODL university and the former often questions the quality of its output and wonders how a university can be run without full attention being devoted to research.

The traditional university culture sees the culture of distance education as an affront to the academic autonomy and the need to devote a greater part of the time to research.

8.0 The Contemporary University Culture

What has occurred in the past decade in the development of universities is the fusion of the collegial culture with the developmental culture. It is becoming increasing clear that no university exhibits a single organisational culture. As a result, the diversity and complexities of both cultures are being exhibited in the contemporary university culture. Contrary to the old views that are held, research and teaching and scholarship are given the deserved emphasis in this new culture.

In all open universities in the world today, majority of the academic staff are recruited from the conventional traditional universities. Once they arrive at their new home, the academics begin to transit into new professionals who attempt to combine the best assets in both the traditional and the open university systems. However, it must be said that the reality is that a small proportion fail to adapt or adopt and continue to live in a state of conflict in which the ideals and ideas of both cultures only coexist within the academic but they are not fused. They often find that the technological, structural and attitudinal baggage they carry to the contemporary university affect their effectiveness and efficiency in the teaching, scholarship and research goals of the university. Such staff become cogs in the wheel of progress and their attitude continue to affect, in negative terms, the realisation of the goals and objectives of the contemporary university.

I am pleased, and indeed most elated, to note that the Zimbabwe Open University has embraced the characteristics of a contemporary university. No greater demonstration of this fact can be made beyond instituting research in this university both as a matter for open discourse and a matter of adoption by all academics. It is even more gratifying to note that you have gone a step further by ensuring that the research undertaken at ZOU relate to socio-economic development of the immediate society and the nation thereby making ZOU most relevant and responsive to contemporary needs.

9.0 Way Forward

In spite of the multi-faceted challenges facing Africa, it must be said that the continent has made significant progress in many areas of development including social, economic, political, scientific development, as I have detailed in Section 2.0 above. However, there are areas that need to be given priority or extra support for the continent to transform into what the 21st century development requires. In addition, I have noticed the great and significant stride that ZOU has made recently in lifting the game of research in a university that finds herself transiting from a developmental culture to a contemporary culture.

It is therefore in the right direction to suggest a number of issues to be attended to as way forward for the use of research in innovation and enhancement of socio-economic transformation. There are a host of issues that could be discussed in this section. But I have chosen to limit it to just six major ones: three for the university and three pertaining to the larger society.

Let me begin with the three that concern the University.

1 Enhance its transition to a contemporary university culture

A contemporary university is one which is sold to the idea that the 21st century requires a different set of tools to create and innovate in the new environment and the future of higher education. A contemporary university is the one that combines the virtues of collegial and developmental cultures to bring out the best for society. While working towards access and massification of higher education, such a university holds on to and projects the role of research in a developing economy. ZOU is doing all of these. But it could go a kilometre further by giving it a bigger boost and ensuring that all staff engage in pragmatic research that link to one or two needs of the immediate society. Consideration should be given to promoting and carving out a niche in the areas of human endeavour that are of necessity right now. Africa cannot, as at now, afford the luxury of research for its own sake. Let us think of climate change, waste

management and green economy as areas to develop the knowledge economy and get interested and capable staff to research these areas.

2 Build Innovation and Capacity in Research Through Collaboration

The second suggestion I have for ZOU is to embark on further innovation and capacity building in research for staff through collaboration and partnership with like-minded institutions around the world to develop research leadership and management capabilities of leaders in research and innovation. Embarking on research is one thing but raising a crop of leaders and managers to superintend over the whole implementation of the research areas requires an effective undertaking. According to Olsson (2016) the challenges for leaders of research institutions are two-fold: '(i) to create and maintain effective institutional management systems, structures and processes that suit their organisation's needs in a national and increasingly international context, and (ii) to build and sustain research and innovation leadership and management capabilities at the unit level within their institution.

There are a number of institutions around the world that are going into this new area. One of such is the LH Martin Institute for Tertiary Education Leadership and Management at the University of Melbourne, Australia. I would recommend that ZOU gets in touch with this Institute to explore areas of partnership and collaboration.

3 Prepare and Research the 21st Century Learners

The world is experiencing unprecedented changes regarding who the 21st-century learners and digital natives are. This is solely due to the rapid development of technology which is going on in leaps and bounds and for now actually out of the mainstream understanding of the ordinary academic. If we do not want to address the new crop of learners using analog solutions for their digital issues, we must begin to research into all aspects of their behaviours in and out of classrooms, laboratories, social groups, etc. The new crop of 21st

century learners comprises those who will be called upon to transform education and the emerging society. We will soon have in our classrooms a new and very capable set of young learners who will be change agents who have never experienced a traditional class. Due to their proficiency in computing technology and social media, which will soon become the main way of teaching and learning, the new sets of learners will be independent and collaborative learners, who can migrate seamlessly between devices and across different platforms while they deep dive into subject areas that are delivered online, offline and in immersive learning environments. This new group of 'disruptive learners' will bring their experience of collaboration, openness and digital literacy to the classroom. Just-in-time learning will soon become the essential skill in the emerging workplace. This emerging generation of learners we will have to deal with are 'platform floating, cloud space storing, super googling, and insta-spotifying students.

As teachers and facilitators of learning we must acquire new modalities, where co-constructed knowledge is scaffolded and powered by digital pedagogies.
In order to become resilient thinkers, facilitators of knowledge and of learning who can solve today's problems for the environment, for energy and global sustainability, we must discover new knowledge of how these new people learn, how we can also learn to assist them and ourselves, and manage their learning in such a way as to maximise their capabilities for the transformation of their world. Research should have started by yesterday and we need to channel government's thinking into this new area.

4 Implementing the Declaration of the African Higher Education Summit

An African Higher Education Summit held recently in 2015 in Dakar, Senegal to deliberate upon how to move higher education forward in Africa. The Summit's action plan calls for an increase in enrolment ratio to 50% for Africa, up from 8% for sub-Saharan Africa today. Increasing enrolment of students should also go hand-in-glove with the need to embark upon research that will contribute to

the current global needs in documents and meetings that are gaining currency at the moment. A realistic avenue to tremendously increase the quantum of research in higher education institutions is to take on board what the global world is concerned about. It should now be African governments' priority to pursue the means to achieving the goals of COP21, Sustainable Development Goals (SDGs), Agenda 2063 (AUC/ENECA/NEPAD), and Continental Education Strategy for Africa (CESA 2016). All institutions of higher learning in Africa should subscribe and include all these in their research agenda as a means of achieving all these goals.

5 African Governments Must Fund Research Massively

While we applaud the achievements of our various African governments in increasing their expenditure on education generally, as discussed in Section 2.0 above, they need to step up their budget to massively fund research if we are to function effectively in the global arena and become generators of knowledge economy. Asakitikpi (2006) has discussed this issue extensively and echoed by Chukwuemeka (2014). They opined that the issue of funding for research in Africa has not received adequate and appropriate attention. They said that virtually all the countries in Africa do not budget adequate fund for research activities. Also, the university lecturers and those who work in research institutions are not well remunerated. Most governments think that fund allocated to research component of the economy is a wasted fund and therefore they do not allocate adequate fund for research activities. The government prefers to vote huge sums of money to maintain security and payment of salaries and benefits to political office holders and assembly men. African governments and development partners should accelerate support to research and research-based education in Africa to build the necessary human capital to further increase research on solving African problems by Africans for Africans. With so many agencies, such as the World Bank, UNESCO, AfDB, ACDB ready and willing

to assist African nations in socio-economic development, our governments have no excuse whatsoever.

6 African Governments to Prioritise Support for STEM Research

African countries must encourage and motivate their researchers to undertake research that are of use to the society as well as understand the changing role of research in the international and global environment. In today's world, research must integrate knowledge generation, socio-economic development and entrepreneurship to tackle the growing pandemic of unemployment amongst the youth of Africa.

Recently, a World Bank Report (2014) titled: **A Decade of Development in Sub Saharan African Science, Technology, Engineering and Mathematics Research** looked at Africa's research performance over a decade, what it means for the continent's development and how it can benefit the growing number of young people who leave university each year looking for jobs.

The Report recommended, amongst others, that "…STEM research should also be a priority and that raising the capacity of institutions to produce valuable research in science and engineering could help transform Africa and generate broad gains to society". According to Andreas Blom, The Lead Education Specialist at the World Bank, who co-authored the report, "The overall goal here is to produce a larger and more qualified STEM workforce in Africa that can find solutions to Africa's development challenges." African nations must address this as a matter of urgency.

10.0 Conclusion

The importance of research, to any higher institution of learning and to any nation worth its existence in the 21st century, cannot be over-emphasised. Research is the bedrock upon which all development decisions are based. They provide the data base, the justification and the direction for taking certain decisions in the interest of the society.

What has been argued in this paper is that research can only be possible and meaningful if it is recognised that it must take place within the milieu of a sound education rooted in socio-economic development. It has also been argued that the traditional universities, and any other university as a matter of fact, must move from their comfort zone of either collegial or developmental culture to contemporary culture in which the best of all cultures are integrated to support the generation of knowledge. If Africa and our universities are to meaningfully contribute to the 21st century knowledge economy, some suggestions have been put to them for consideration as a way forward. Africa musts move into the mainstream of knowledge generation in a bid to contribute using intellectual output for innovation and enhancement of socio-economic transformation of our societies.

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