**EDUCATION TECHNOLOGY AND SUSTAINABLE NATIONAL DEVELOPMENT IN AN ERA OF ADMISSIONS BOTTLENECK IN HIGHER INSTITUTIONS OF LEARNING**

Professor Adeyanju Oluwafunmilade Joel,
Faculty of Education, Obafemi Awolowo University, lle-lfe, Nigeria.

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## Protocol

Representative of His Excellency, Ogbeni Rauf Aregbesola,

Distinguished members of the State House of Assembly,

Vice Chancellor, Osun State University,

Registrar,

Other Principal Officers,

Students,

Gentlemen of the Press,

Distinguish ladies and gentlemen.

# Introduction

It is a great joy for me to stand before this great congregation comprising renowned erudite scholars of repute and distinction, technocrats of impeccable character, leaders of dependable promise and students; our future hope and leaders of tomorrow. I count myself lucky to have been so acknowledged to speak on a topic that l have so much developed passion for over the last few decades of my career in teaching. This is a subject area that has become an

essential tool for willing teachers; it is an unavoidable course that every pre - service and in - service teachers, entrepreneur and businessmen must be friendly with in other to be able to successfully present, teach and instruct, sell and communicate ideas to audiences with very limited stress; such task of effective communication can be accomplished through the use of visual, audio, audio visual, real objects and contrive materials that appeal to the senses of sight and touch. It works best in an activity based teaching and learning environment.

The issue of education and development is topical for nations all over the world because of the needs of relevance to the current socio economic and political dispensation. Just like the individual in a system would struggle to become useful in his milieu, so are nations. To become relevant presupposes that the benefits of the millennium would be harness for the improvement and empowerment of the well being of a people whose productive efforts in their different walks of live could lead to the development of a nation.

Education is an essential tool for achieving sustainability no doubt and as observed, the current economic development trends would not lead to sustainable development. However, public awareness, education, and training are considered vital to moving the society toward sustainability. People seem to have different perceptions and meaning of sustainable development and whether or not it is attainable. They have different visions of what sustainable societies will look like and how they will function. It is also worrisome to state that educators have responsibility to work out ways to develop education for sustainability (EFS) programs but educators are being dictated to by the ministries of education, health and the Non Governmental Organizations (NGO's) which should not be. The lack of agreement and definition also affect the efforts to move education for sustainable development (ESD) forward.

There are three common ways that indicates how the term sustainable development is used: education for sustainable development (ESD), education for sustainability (EFS), and sustainability education (SE). It is found that ESD is most often used at sittings of the United Nations Assembly and it is so indicated in the UN documents. Whether at local or national level, the ESD efforts are affected by language and culture of the people.

Education serves functional purposes and that is why we have courses in most of the relevant fields. Art education prepares the learner for future jobs and for the development of aesthetics feelings. There is civic education that prepares the society for governance; there is mathematics education that ensures that the skill of numeracy and counting is entrenched in the lives of the people. Knowledge of agriculture gives the community idea on survival through planting and accurate measure of fertilizer for improved crop yield. Studies in educational technology relieve the society of burden of manual labor and work.

> ESD is therefore viewed as a programmed that would ensure that the whole world live to enjoy a better and more impactful life in the present and for future generation. ESD would give people knowledge and skills for lifelong learning to help them find new solutions to their environmental, economic, and social issues. Since ESD lends itself to different definitions, and is still evolving, the Brundtland definition may suffice; "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43)

# Principles of Sustainable Development

The *Rio Declaration on Environment and Development* fleshes out the definition by listing 18 principles of sustainability. The few that relates to the current presentation are those that I will speak on as they affect our nation.

- Nations have the sovereign right to exploit their own resources, but without causing environmental damage beyond their borders.
- Nations shall use the precautionary approach to protect the environment. Where there are threats of serious or irreversible damage, scientific uncertainty shall not be used to postpone cost-effective measures to prevent environmental degradation.
- Need to eradicate poverty and reduction of disparities in living standard will lead to a sustainable development
- Meeting the needs of the majority of the people in a society will lead to a sustainable economy
- Knowledge of demographic policies as it affect production and consumption may assist in a sustainable society

- When a nation facilitate and encourage public awareness, allowing them participate meaningfully and making information widely circulated, we may be driving toward a sustainable development.

Sustainable development requires better scientific understanding of the problems; nations should as a result share knowledge on innovative technologies in other to meet the goal of sustainability.

Nations should tap into the creativity, ideals and courage of the youth, there is need to recognize and support the identity, culture and interests of the indigenous people.

- If you consider the three to be overlapping circles of the same size, the area of overlap in the center is human well-being. As the environment, society, and economy become more aligned, the area of overlap increases, and so does human well-being.

# History of Education for Sustainable Development

From the time sustainable development was first endorsed at the UN General Assembly in 1987, the parallel concept of education to support sustainable development has also been explored. From 1987 to 1992, the concept of sustainable development matured as committees discussed, negotiated, and wrote the 40 chapters of *Agenda 21.* Initial thoughts concerning ESD were captured in Chapter 36 of *Agenda 21,* "Promoting Education, Public Awareness, and Training."

- Every nation will need to reexamine the curriculum at all levels (i.e., pre-school to professional education).
- It is also evident that simply increasing basic literacy, as it is currently taught in most countries, will not support a sustainable society.
- Higher education level is necessary to create jobs and industries that are "greener" (i.e., those having lower environmental impacts) and more sustainable.
- The relationship between education and sustainable development is complex. Generally, research shows that basic education is key to a nation's ability to develop and achieve sustainability targets.

- Finally, a subtle combination of higher education, research, and life-long learning is necessary for a nation to shift to information or knowledge-based economy, which is fueled less by imported technology and more by local innovation and creativity (UNESCO-ACEID, 1997).

# Implementation

An educated citizenry is vital to implementing informed and sustainable development. Being improved education holds both individual and national implications.

- The theme that the organizers of this very important event sent read; Educational Technology for Sustainable Development. I have however modified it to blend with the current disturbing challenge that youths of our country have been wadding through the last few decades. Hence the new theme that reads Educational Technology for Sustainable National Development in an Era of Admissions Bottlenecks in the Higher Institutions of Learning will enable me address the holistic essence of educational technology that is an eclectic field.

The irking problem of access to higher education and subsequent unemployment that they battle may continue in the future if the desired urgent need to arrest the situation is not immediately proffer. It is important to address this issue because the strength of the nation resides in her teeming youth. The youth are called upon in times of war to rise and defend their nation, and their positive productivity also makes the nation great. Youth may be assumed to flood the institutions of higher learning; the fact remains that many more of the youth though qualified are out of the four walls of the University.

# Objectives

The thrusts of the paper addresses the various ways by which Educational Technology field is conceived, it review the efforts of the field in sustaining

national development with reference to the education sector; data on trends in admission into Nigerian Universities from the beginning of the new millennium to the very recent times were provided; thereafter, reasons were advance for the challenge of admitting more students than needed into the higher institutions of learning. No doubt the capacity to cope with overpopulation of the higher institutions is another issue that the paper sets to discuss. Suggestions for intensive use of Educational Technology, ICT driven programmed of the Distance Learning were made for solving the problems of admissions bottlenecks were made.

## Some Critical Challenges of Higher Institutions

Although, the resultant effect of overbearing is partly due to the bottlenecks in admitting students into the higher institutions, poor human and material resources management, poor funding of the institutions, pressure from candidates that are eager for admission, managements oversight of the overstretched facilities, acute shortages of relevant academic and support staff and paucity of instructional materials to teach with are just some of the added problems. Many are the problems of higher institutions but technology can solve a number of the problems.

Let me define technology as a systematic way of applying scientific or other organized knowledge to practical task. It is a process as well as a product. The process involves application while product is viewed as the outcome of application of the process. Such products are seen as hardware and software materials. The process is described as a step by step approach or Systems Approach to the achievement of effective outcome that involves planning, designing, implementing and evaluating a situation, an object or event.

When technology is viewed as a product, the thinking refers to all skills involved in the systematic processes leading to the production of physical materials and equipments that could be used to facilitate instructional events. From mans daily experiences, Technologies have been found to forcefully invade our private and

public lives and its impact is assumed to be beyond our imagination. An unexpected phone call to a farmer living in the village from a family member living in the USA for example can influence the activity of the day. Although in the last century, technology was described as being on our palms, the popular saying that the world is a global village (McLuhan 1967) seems not to hold any longer as the experiences of a decade has shown and have proved after the new century that technology has shrink the world further such that the world is no longer on our palms but on mans' "finger tip"

Researches are ongoing pertaining to the effectiveness and efficient use of information technology. The satellites, VCRs, CD-ROMs, computers, telephone, very small aperture terminals (VSATs) Optical Fiber and wireless; loops to some extent have revolutionizes ways by which tasks of work and communication are carried out with less strain.

Unfortunately, useful as these technologies are, in-service teachers and trainers as well as educationists seems to create more gaps because the various technologies are seen as a threat. Some people see technologies as making professionalism incapable and obsolesce; this feeling that convey the impression of "you are no longer needed" is affecting its relative deployment into the classroom. Teachers are adherent of traditions and this attitude invariably cannot sustain national development. In the light of this attitude, Dr. Hedayat Ahmed (UNESCO PPOP, 1990) submits that the cultural technological gap that is being created would result in serious consequences in the output of human resources if the problem is not resolved at the educational planning stage.

As earlier stated, technology involves men, machines, methods, procedure, systems and techniques of doing things. The machines, equipment, tools and engines are the products of the field of Educational Technology. Methods, use of skill and knowledge, procedure for making and doing things refers to the process.

Arising from the various ways that the new technologies is perceived, permit me to define technology as a practical way of thinking out solutions to a giving problem using men material resources and machines managed by man. Our understanding of the term technology as defined would eventually take us

through the concept of educational technology with more understanding. Before then, let me give a definition of the term education or "educare" as it evolves from the Greeks.

It has often been said that if anyone thinks that education is expensive, let him/her try ignorance. An attempt is made to define the concept of education. Education has been defined by the Philosophers, the Scientists, teachers and parents, but B.F. Skinner in the New Scientist (1964) defines education as what survives when what had been learnt has been forgotten. Edward Wilkins an author defines education as the sum total of all the experiences of our life. It is therefore a continuous process. In my opinion, education comprises series of experiences gained from learning to do things. Getting actively involved in learning that which ought to be learned would assist the learner in knowing those things that would enable him/her to live an approved and acceptable life where ever he/she may find himself or herself. To become educated also demand that one get instructed. Instruction is defined as an activity that consists of leading the learner through a sequence of statement and restatement of a problem (Bruner) so that he/she may learn. It is also a body of knowledge that increases learners' ability to grasp, transform and transfer learning. Instruction is systematic, specified and objective oriented. (Adeyanju, 2000)

The instructional system is a holistic view of teaching and learning process cooperatively working together for a common purpose. It can also be viewed as system approach to instruction. In this case the learner is central to all other factors that are involved in his/her education. The learner is thus surrounded by the content that should be taught, the teacher that would act as guide as he learns, the media that is found suitable for his learning; the choice of methods and evaluation of the total learning situation. The field of educational technology makes use of learning principles and theories. A principle thus implies basic idea or rule that explains or control how things happens or how they work.

The National Policy statement on education lends credence to the needs for changes and innovation in teaching which the field of educational technology provides opportunity for its workability. It states that:

(i) Teacher Education will continue to take cognizance of changes in methodology and in the curriculum, and that teachers will be regularly exposed to innovations in their profession, and
(ii) Government will introduce measures to enable teachers participate more in the production and assessment of instructional materials.
The National Policy on Education (FRN 1981)

The exposure of the pre-service teachers to courses in educational technology has been given approval and its teaching cuts across the Teachers training institutions comprising Colleges of Education where there are Educational Technology Centre's, CET; and Department of Educational Technology in various Universities. To emphasize the importance and need of production of teaching learning materials and application of relevant teaching methods; educational technology becomes more relevant to students and teachers in higher institutions of learning. Before engaging learners in the internship, they are already abreast of the principles and the techniques involved in production of the teaching and learning materials. An attempt is made to define educational technology bearing the fact that the field embraces professionals from the other disciplines.

# Defining Educational Technology

Educational Technology is a course of study that has different meaning to different people that belong to numerous professional calling. The term Educational Technology frightens the neonate, pre service teacher sees the course as production of teaching aids, the in-service teachers refers to it as use of methods involving visual and audio visual materials that enriches the teaching and learning activity when they are carefully used, aside this two groups and the ways they perceive the course are other groups who we should class as the traditionalists. They see the course as the application of machines in teaching. To this group of people, the sight of a camera, use of video tape, projector, carousel, microphones, photocopy machine and the like tend to convey the term

educational technology to them. However, Educational Technology concepts mean more than that.

Using the National Policy Statement as a prelude, therefore, l will describe Educational Technology as an eclectic field that borrows ideas and skills from a number of disciplines; inclusive are the field of sciences, psychology, sociology, it is a discipline that see the instructional system as an avenue that ought to be used to bring about effectiveness and efficiency in teaching and learning process, it focuses on the dare need for the teacher, instructor, and designer of programs to be armed with a "working drawing" a plan that is based on specific and achievable objectives within the designed plan of instruction. The field targets learners' attitude and skills acquisition and the transfer of adequate knowledge through effective teaching such that learners would be empowered to solve related problems as at when the challenge evolves.

The American Educational Committee on Technology (AECT 1979) defines Educational Technology as a complex integrated organization of men and machines, ideas, of procedure and management. This definition seems old, but it explains clearly the import of the term. Men of different vocations working with ideas on machines following systematic procedure and managing the ideas, machines, procedure and organized men for the purpose of solving a problem.

Wittich and Schuler(1973) defines Educational Technology as media borne of communication revolution that can be used for instructional purpose alongside the teacher, text book and the chalk board.

Agun and lmogie (1988) refers to Software Approach as the application of theories of learning and principles of learning to teaching and learning process. The process Approach involves the following steps;
Planning for details i.e. task analysis, designing instruction effectively, providing statement of instructional objectives, programming of learning activities, use of relevant methods, reinforcing learning, motivating learning and use of well thought out strategies.

Put simply, educational technology is the use of all educational resources involving research, and information on how learning is done and application of the principles of communication. It encompasses all the planning strategies that include;

a) Identifying educational needs
b) Selection of relevant resources
c) Making the choice of procedure and analyzing its relevance
d) Assessment of goals/objectives and
e) Evaluating the total process and end product.

The reason why educational technology uses all educational resources available is for the purpose of applying and planning as well as strategizing with them. It is felt that the approaches of educational technology is directed at solving educational problems; and by so doing, the quality of education becomes improved.

Ingle sees educational technology as an integrated and systematic method of designing, planning, implementing and evaluating the total process of learning and teaching in terms of;

a) Stating specific objectives
b) Collating and use of research information on human learning and
c) Close monitoring of the process of communication.

## Advantages of the use of Technology in Higher Institution of Learning

The new technologies that are available for improving learning are array of gadgets in form of hard and software components. Common in use are the micro computers, teleconferencing; video, audio, computer conferencing, the cybercafé, internet, electronic mail, the telemetric, hypertext, video text, and tele-text etc.,

In the higher institution of learning, effective use of technologies in education when used led to relative improvement and in the provision of quality education; learning is also made more realistic and achievable. The use of technologies have been found to increase attentiveness leading to retention abilities of learners (Harriman's, 1995, Akanbi, 1986, Agun, 1986, and Adeyanju, 1987) Other advantages of the use of technologies include; enhancement of interactivity in learning, accessibility of the feedback process, increase in the degree of communication; tasks of learning and skill acquisition may become increasingly easy to master.

Technologies improves the tasks of the teacher and those of the students, a lot of theories that are learned in schools have been reduced by technology to what in such a way that theories are observable and the learner can act on them. Abstract presentation of information has been reduced to what can be seen, felt and touched rather than imagined. A critical examination of how educational technology can assist in sustainable national development can be sum up as the role it plays the development of the nation.

- Nigeria has been found to be one of the largest importers of the mobile phones. These phones can be used more actively as access for lecture presentation such that the annual candidates that could not get admission into the higher education would receive their education through the devise. Such education should be structured to hold at weekends.
- The teeming youths of the nation seeking for education can get better education from the use of the various mobile phones they have.
- Such experiment should be tried on a very small scale and could be expanded as the realities of its use are established.
- The Distance Learning Centre's can encourage the flexible methods of instruction. Lectures can be streamed directly to the target audience, however, the rule stating that students should visit the education environment for contacts and for written examinations should be carefully engaged. Since 20% of qualified candidates can be admitted in all the Nigerian higher institutions of learning on an annual basis, the 80% that are left with no admission should be carefully engaged.

- The radio is the cheapest medium of instruction. The old Centre for Educational Technology in Kaduna should be revived and empowered to play her traditional role of designing lecture series that is geared towards the development of the nation.
- A number of Universities have licenses to operate F.M. radio on their campuses. This gadgets / facilities are potent avenue for instructional broadcasts. It maximum utilization will not only increase revenue generation, it would make technologies of instruction more active and acceptable to users.

## Sustainable Development of Nigeria

How do we sustain education in a nation that is classified as the largest in Africa, with great economic buoyancy for the world in terms of her population of about 173 million people but with various challenges of poverty and inequality; inadequate infrastructures and poor funding of her institutions. There is overpopulation of students in schools yet many more are not given admission; there is high illiteracy records, unemployment of youths, very high mortality rates, polio ridden States are still there, corruption and selfishness is a cankerworm on the increase; poor power supply and downward trends of industrialization due to misuse of resources that would power the economy. The hope for the state of Nigeria is not lost, education is what we need and educational technology field should be made to play her significant role in and out of the education sector.

## Poverty and Inequality

As reported, the Nigerian economy grew at an average of about 6.2 per cent annually between 2002 and 2011, the government is however concerned about the apparent disconnect between Nigeria's economic growth and human development. Nigeria currently ranks 156 out of 187 economies (UNDP-HDR 2011). This position underscores not only the limited choices of Nigerians, but

also defines the critical development challenges being faced by government. Bureau of Statistics' (NBS) report, about 69.1 percent of the Nigerian population or approximately 100 million people are living below the poverty level ((NBS, 2011).

The country is currently struggling with high unemployment rate which surged from 3.8 percent in 2002 to about 19.7 in 2008, and now stands at 23.9 percent in 2011 (NBS, 2012). Lack of employment is one of the contributory factors to both poverty and inequality.

## Health Issues and Welfare of the State

There has always been the challenge of people migrating from the rural to urban centres for want of better jobs. Movement from the rural to urban centers' has been found to put pressure on facilities, road portable water, living condition and overpopulation in certain cases which brings about poor sanitation.

## Education and Sustainable National Development

State governments are consistently accessing intervention funds for rehabilitation, development of infrastructure as well as provision of school materials. About 19,600,000 English Language, mathematics, Basic Science and Technology activity books have been provided for primaries 1, 2 and 3. Similarly, 4,944,000 library resources materials were provided for Junior Secondary Schools. There has been a comprehensive review of school curricula at basic and post-basic levels to ensure that it is in line with national development objectives and integrate it with technical and vocational education to enhance the skills base of school products. All 51 federal and State Government polytechnics have been equipped while others are being rehabilitated. Entrepreneurship Centre has also been established in tertiary Institutions to enhance skills development and the ability of students to transmit successfully into society.

In line with the Federal government's efforts at creating a sustainable national development, it is expected that serious moves should be made to ensure that educational technology field participate actively in ensuring that the proposed

Institutional Framework is developed to enhance the functional national systems for education. The proposed areas of focus are Teachers Development Needs Assessment / Professional Development, Monitoring of learning Achievement, Quality assurance; Education Management Information System, School-Based Management Committees and Guidance and Counseling.

# The Era of Bottleneck in Admissions into the Higher Institutions of Learning

Admissions trends

| Year | UTME | Total Admitted | Percent |
|---|---|---|---|
| 2000 - 2001 | 550,399 | 60,718 | 11% |
| 2001 - 2002 | 749,727 | 9,769 | 12% |
| 2002 - 2003 | 994,381 | 51,845 | 5.2% |
| 2003 - 2004 | 1,046,950 | 104,991 | 10.1% |
| 2004 - 2005 | 841,878 | 122,492 | 14.5% |
| 2008 - 2009 | 911,635 | | |
| 2009 - 2010 | 1,092,324 | | |
| 2010 - 2011 | 1,276,195 | | |
| 2010 - 2011 | 1,493,604 | | |
| 2011- 2012 | 1,503,931 | | |
| 2012 - 2013 | 1,644,110 | | |

***Source:*** ***www.information.ng.com,*** *(VAIC Project, 2012), Fagbamiye, 2006.*

The institutions of higher learning is the ivory tower, it is a place where theories are formulated, a place where theories and philosophies are translated to action plans; it is a place where practicable experiments are through systematic application executed for the purpose of equipping the world with knowledge and skills borne out of carefully organized scientific research that could withstand the test of time. Higher institutions of learning is supposed to accommodate intellectuals who are seriously engaged in providing such delicate services as teaching, research and other social and academic engagements.

The six first Nigerian generation Universities namely; Premier University of lbadan, University of Nigeria Nsukka; University of Lagos, and Ahmadu Bello University Zaria, University of lfe and University of Benin has grown from four Universities to over a hundred and twenty seven in the last few years.

The bottleneck that Nigerian qualified admit table students have been experiencing the last decade and a few years has been that of acute shortage of space to admit them to develop the self in the ivory towers. With over one million five hundred Post Jamb Candidates that were ready to get admission into the Universities of their choice, all the Universities put together were only able to admit about 20%. The concern is what happens to the rest of the qualified able bodies that could not be placed. In the Obafemi Awolowo University, lle lfe, the Vice Chancellor in 2008 lamented that of the 30,000 found qualified to be admitted into the various programs in the University, 4,000 were admitted (0.3%). Tribune; August 1, 2008. During the current session, 2012/2013, fifty five thousand qualified candidates opted to read in the OAU lfe, close to forty eight thousand attended the post UTME examinations that the system organized to screen out the candidates that failed to meet the set cut off mark. Over twelve thousand made the cut off mark alas, only five thousand were selected. This situation is considered very serious as the situation is growing worse on an annual basis. Can the bottle neck be removed so as to accommodate more qualified students? Although more Universities were created in year 2012, it appears Nigeria needs more institutions to take care of the deprived. The 74 Federal Universities, 37 State owned and 37 privately owned Universities is now

considered inadequate to take care of the progressive education of about forty million Nigerian youths.

It is common knowledge that the University Academic staff over the years had been on a work to rule for specific reasons of getting the Federal and State governments involved in a debate on the need to improving the unacceptable state of the condition of the higher institutions in Nigeria. The recommended 26% GNP that the UNESCO had recommended to be deployed towards the improvement of education had never been met the last two decades. Just recently, six months protests on inadequate funding and neglect of higher institutions begging for reactivation of dilapidated infrastructure, replacement of obsolete text / instructional materials and resources of education and need to improve the welfare of Staff got resolved. The six month of waste has adversely affected resumption of the newly admitted students into their various Universities thus adding to the bottleneck of the new sets. At least, the graduating period that most Universities have set had to be altered.

As a result of the strike action, students had to remain at home; parents had to expend extra resources to keep their wards busy even then the unfortunate ones had been reported to be found wanting as they had turn to crimes and anti social behavior. Some had to drop out of school.

# Solutions

The imagined solutions that immediately come to mind include the reverse of the weaknesses as identified in the prelude; i.e. the opening of more Universities, Polytechnics' and Colleges of Education; training of brilliant academic and support staff, provision of more funds considered adequate and back up with a robust annual budget close to the 26% of the UNESCO recommendations that could be sought perhaps through collaboration with the private sectors of the economy. With provision of all these incentives, sustainable national development can again be misinterpreted. I will address this in a short while.

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There has been a comprehensive review of school curricula at basic and post-basic levels to ensure that it is in line with national development objectives and integrate it with technical and vocational education to enhance the skills base of school products. All 51 federal and State Government polytechnics have been equipped while others are being rehabilitated. Entrepreneurship Centre has also been established in tertiary Institutions to enhance skills development and the ability of students to transmit successfully into society.

Institutional Framework is being developed to enhance the functional national systems for education in the following areas:

- Guidance and Counseling
- Quality assurance
- Teachers Development Needs Assessment/ Professional Development
- monitoring of learning Achievement
- Education Management Information System
- School-Based Management Committees

# Distance Learning as Solution

Simply education has been playing the role of rectifying the imbalances in education and this is evident in South Africa and in Nigeria. Its potentials if harnessed adequately would erode the bottleneck in admissions drop out as well as increase the opportunity of a sustainable development.

The fundamental concept of distance learning is separation of students and teachers by distance and sometimes by time. The use of printed and electronic technologies as the primary form of communication is the most obvious characteristics that distinguish distance education from other forms of education. Moor Michael G. (1966) describes it as a form of planned learning and normally

occurs at a different place from teaching and as a result requires special techniques of course design, special instructional techniques, special methods of communication by electronics and other technology as well as special organizational and administrative arrangements.

Let me delve a bit on the Obafemi Awolowo University Centre for Distance Learning. In year 2003, there were 55,000 students seeking for admission and less than 10% were admitted. The perennial problem has assumed a national dimension. This threat informed the Senate decision to establish a distant learning program harnessing the full potential of information and Communication Technology (ICT). The use of variety of media is found to solve problems of education and this is where educational technology comes to play.

E-learning is the use of technological tools (primarily those that can be made available over networks such as the internet) for education. E-learning is pedagogy that is empowered by digital technology; it is essentially the computer and network-enabled transfer of skills and knowledge. Its applications and processes include web-based learning; computer based learning, virtual classroom opportunities and digital collaboration. The content of e-learning is delivered via the internet, intranet/extranet, audio or videotape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and it includes media in form of text, image, animation, streaming video and audio.

The elements of e-learning material comes from good instructional design comprising of; introduction or an overview, information presentation, practiced items with customized, instructive feedback, assessment and evaluation.

E-learning is beneficial in that research report of Means (2009) indicate improved performance from a 12 year meta- analysis of research by the U.S. department of education. There is increase access, it transcends boundaries, it is convenient and flexible for learners, it is self paced; can be 24/7, and it is affordable. It will also safe the time of un-admitted students that add to the candidates for admission on an annual basis. E- Learning allows students select learning materials that meet their level of knowledge, interest and what they need to know to perform more effectively and actively.

# Conclusions

Nigeria reckons that for it to meet its development challenges and follow the path of sustainable development, it must focus its efforts at (i) creating demand for good governance including addressing socio-economic and political marginalization that seem to fuel conflicts (ii) tackling poverty and reducing inequality through inclusive policies and people-centered development programs, as well as addressing critical factors of poverty, underdevelopment, joblessness, and lack of economic diversification, (iii) promoting environmental sustainability; (iv) addressing the challenge of climate change, (v) greening various sectors of the economy to capitalize on emerging opportunities to leapfrog development, and (vi) massive investment in people to tap unto the latest potential offered by globalization and new information technology. To do this effectively, the government has to:

- Put in place policies and programs aimed at fulfilling its commitment towards social progress, accelerated economic growth and increased environmental conservation;
- Strengthened institutional and legal frameworks imperative for sustainable development;
- Embarked on a number of initiatives for financing sustainable development; and
- Support a number of implementation imperatives and mechanisms, particularly as they relate to governance, education and awareness creation, capacity building, multi-stakeholders' participation and international and regional cooperation.

Sustainable development has been embedded in the planning process of the country since the 1990s. The National Vision 20:2020 documents and its National Implementation Plans (NPC, 2010) explicitly recognizes the synergy between environment, health and development and identified as one of its core objectives the need for ensuring environmental sustainability of the development process through social mobilization and participation of people at all levels.

The Federal Government's key priority policies, programs and projects that will translate the Vision and the 1st National Implementation Plan into meaningful development in the country are captured in the government's Transformation Agenda for the period 2011- 2015. The Agenda is based on a set of priority policies and programs, which when implemented will ensure continuity, consistency and commitment of national development efforts that will transform the Nigerian Economy to meet the needs of the Nigerian people.

- Use print based correspondence as delivery mechanism
- Use information technology based distance learning

To translate the projects emanating from the Transformation Agenda into reality, a number of policy and regulatory enablers have been put in place, including laws, regulations, policies, public infrastructure, public services and international trade agreements that will facilitate the activities of economic agents, making it possible for them to be competitive, function optimally and operate profitably, while ensuring sustainable development. These laws will ensure that businesses can invest and operate in a private-sector led approach without the fear of losing out on opportunities to grow because of bureaucracy, poor market access or any other impediments. The rule of law will also guarantee property rights and contract enforcement which provide great impetus for growth of business and the contribution of businesses to economic growth.

The role of government would be mainly on creating the enabling environment aimed at facilitating sustainable development in the country. The actions will include (i) reduction in the length of time and cost of registering a business; (ii) simplification and harmonization of the tax systems and payment channels; (iii) reduction in the turnaround time and cost of obtaining building permits; (iv) ensuring easy access to affordable and long-term finance; and (v) expansion of IT infrastructure to facilitate easy access to internet and telecommunications services.

Nigeria recognizes the challenges of achieving sustainable development. The government is determined to address these challenges, and will ensure that

environmental concerns are properly incorporated into its national, social and economic development efforts.

Nigeria advocates that necessary conditions must be established at the global and regional levels to make it possible for developing countries to move towards a "green economy" within the framework of the Rio Principles and Agenda 21. The tenets of "green economy" in the Rio + 20 Summit should be consistent with the sustainable development concept, principles and framework with continued focus on poverty reduction, which has remained a major global development challenge.

## Summary

Provost and Chairman, distinguished ladies and gentlemen, l have in this paper address the various ways by which Educational Technology field is conceived and how its various roles can assist the efforts of government in sustaining national development, convincing data on trends in admission and the bottlenecks of Nigerian Universities were provided. Thereafter, reasons were advance for the challenge of admitting more students than needed into the regular higher institutions of learning a result of overstretched capacity and overpopulation. Suggestions for intensive use of Educational Technology, ICT driven program of the Distance Learning were made for solving the problems of admissions bottlenecks were made.