

# USE OF INNOVATIVE STRATEGIES FOR LIFELONG LEARNING IN TERTIARY EDUCATION IN RIVERS STATE, NIGERIA

**Dr (Mrs) Amakiri, Hager Atisi Eremina**

*Department of Educational Psychology Guidance and Counselling,  
Ignatius Ajuru University of Education,  
Rivers State, Nigeria.  
amakiriatisi@yahoo.com*

## ABSTRACT

*The study investigated the extent of utilization of innovative strategies for lifelong learning in tertiary education in Rivers State, Nigeria. Survey design was adopted for the study. The population of the study consists of all lecturers in the three universities and three polytechnics (federal and state owned) in Rivers State. Stratified random sampling technique was used to draw a sample of 1,200 lecturers from the six tertiary institutions in Rivers State. Instrument for data collection was a structured questionnaire with three sections (A,B and C). Section A sought the demographic data of respondents, section B consist of 21 items adopted from the “30 Strategies for Education Innovation”, while section C comprised 17 items on factors that hinder utilization of innovative strategies, developed by the research. Two research questions were formulated to guide the study. Data was analyzed using descriptive statistics. The result revealed that the extent of utilization of innovative strategies in tertiary education in Rivers State is extremely low. It also revealed the factors that hinder the utilization of these innovative strategies for lifelong learning in tertiary education in Rivers State.*

**Keywords:** Innovative Strategies; Lifelong Learning; Tertiary Education in Rivers State

## INTRODUCTION

In every educational setting and institution, the educator influences meaningful learning by the structure and organization of information presented, the sequence and the instructional strategies utilized (Novak, 2003). Presently, societies around the world are under-going deep transformation which has metamorphosed into new forms of

education to foster the competencies that societies and economies need in order to thrive (UNESCO, 2015:3). In the light of the economic challenges and high level of unemployment facing Nigeria, it is very obvious to undergraduates, parents, educators and other stake holders that paper qualification acquired currently at the conclusion of tertiary education in this challenging times is inadequate., especially if graduates from tertiary institutions in the country cannot create jobs but are limited to being job seekers. Though tertiary education teachers are the major change agents in the classroom and educational institutions; they are handicapped in so many areas such as over loaded schedules which inhibit creativity and utilization of innovative strategies (European Commission, 2009). In the same vein, Hochman, Tocci and Allen (2005) stated that teachers and administrators charged with the responsibility of fostering students' academic and social growth are likewise deprived of the conditions and resources that support their own capacity to learn.

True innovation therefore in education will require a paradigm shift in format and methodology (Simplicio, 2000). The effectiveness of teaching is determined based on instructional practices that have been empirically proven to improve learning outcomes. The new teaching and learning paradigms in higher education highlighted by OECD (2012:9) proposed:

- New relationships regarding access to teachers and a wider range of communication and collaboration working through learning platforms;
- Re-designing of curricula;
- Bridging teaching and research more intensively;
- Re-thinking of students work load and teaching load;
- Continuous upgrading in pedagogy, use of technologies, assessment models aligned student-centered learning;
- Creating of innovative learning platforms;
- Providing guidance and tutoring to students with new means and methods; and
- Assessing impacts and documenting effectiveness of the teaching delivered.

Nations with low levels of investment in education and training tend to have low levels of school life expectancy and wide skills gaps. They are very much in danger of falling in terms of human and economic development and are the countries least likely to meet their millennium development goals (UNDP, 2009). In this light, Mohasi and Lephoto (2007) have rightly acknowledged that for any substantial economic development to take place, human resources need to be skilled and trained through continuous “education” and

“training”. This can only be realized through lifelong learning. The European Commission (2000) defined lifelong learning as: all purposeful learning activity undertaken throughout life with the aim of improving knowledge, skills and competencies within a personal, civic, social and/or employment-related perspective. It is in this line that tertiary institutions are now considered as the main center for the development of lifelong learning. In most societies, there is a demand on tertiary institutions to admit more students, remodel their curricula and instructional methods. So as to prepare more individuals for the increasing knowledge-based society (Osborn & Thomas, 2003).

Lifelong learning offers institutions the opportunity to widen participation in higher education, diversify their curriculum, instill a critical-questioning element into educational processes, re-evaluate systems of teaching, assessment, and recognition of learning and empower learners (Nesbit, Dunlop & Gibson, 2007). The UNESCO study in (2001) identified six characteristics that are important for the development of lifelong learning in tertiary institutions;

- Overarching regulatory, financial and cultural social frameworks;
- Strategic partnerships and linkages;
- Teaching and learning processes;
- Administrative policies and mechanism; and
- Student support systems and services” UNESCO (in Nesbit et al, 2007:41).

The central objective of lifelong learning is to provide people with opportunities to acquire skills, aptitudes, values, knowledge and experience needed to equip them to become active citizens, to find employment in constantly changing workplace environments and to cope with and respond to changes throughout their lives (Oseghale & Adeyomoye, 2011). Tertiary education teachers therefore need to be abreast with some of the innovative strategies that would enhance lifelong learning. The instructional strategies that dominates our tertiary education is traditional lecture method. This instructional method is inadequate for tackling global challenges and skills acquisitions for job creation and liberation from being job seekers/employees to employer. Faculty members must be willing to explore beyond traditional methods to enhance students' ways of learning.

There are some innovative strategies that may lead to better learning and give new direction to teaching; these are the “30 strategies for education innovation developed as a guide for educators by Nair (2003). The innovative strategies include;

### **Personalization of Instructions:**

It is a vital aspect of the new change or evolution in education. Its core concept is that no two learners are the same, hence it is not the system of education that can work for all. Therefore, there is the need to 'personalize' the learner's experience consequently, personalization does not thrive only on what the learner has learnt but also focuses on how he has learnt it or how it will be learned.

Personalized learning advocates various methods of learning that will be suitable for the learners, it is therefore associated with the development of the intelligence of the learner and not restricting it to the cognitive intelligence alone but considers the learner's personalized learning environment as a factor.

### **Students Advisories:**

It is basically not restricting learning to classrooms in any school environment, rather, it calls for learning-teaching and the organizational structures of students in a number that will enhance coordination with an adult as a 'mentor' who is responsible in keeping the team together. In such structure, students would have developed enduring relationships with one another over the years under the tutelage of an adult.

### **Small Learning Communities with Academies:**

The structuring of learning along sides common themes is another way of enhancing the students' development. In essence, it helps to give the learners vital life-long skills.

### **Multi-Disciplinary Curricula with Block Scheduling:**

Block scheduling is a process of breaking up the learning day into a bigger unit in which the learner can achieve more. Therefore, the belief that whatever that has to be learnt could be done within the prescribed time allocated. This will enable the learner have the infusion of the multi-disciplines to make sure that the learner get more in the larger units scheduled.

### **Cooperative Learning:**

It is a method of instruction which enables the students to learn in small units, having the instructional materials and showing what they have learnt to the small units. In so doing, they learn about their classmates. This methods of learning redirects responsibility from teachers to students, in other words, it encourages students' success and not relying on the teacher.

**Project Based Learning**

Project based learning is one in which learning becomes tangible. The learning is structured in such a way that the learners work in teams and rather than using learning materials like textbooks, the learners are faced with real life situations. Thereby, the learners interact with one another and create bonds of friendship across the continents in such a way there is a thorough perception of what is being learnt and there are various focus on what is learnt which in turn produces a multi-disciplinary curricula to the learning subject.

**Peer Tutoring**

Mentoring others is another means in which students can learn better. Peer tutoring is significant to create friendship with other learners. The concept recognizes that at times, students are not good teachers hence, the quality of learning may be distorted. However, there are considerable benefits of peer tutoring which are that; the learners are engaged in the learning and teaching processes, where one is engaged in teaching others, and one is fine tuned in learning. There is a synergy amongst the learners and it takes care of the individual differences in the learning environment.

**Peer Instruction**

Peer instruction is a vital part of learning; it is a process wherein two learners who are friends learn together. Though there is no consensus among researchers whether the outcome of learning is of the standard required from the instruction. Most educators believe that there is a better knowledge of the topic while learners interact with their friends. This approach will provide avenues for alternating lectures with classrooms discussion amongst students.

**Team Teaching**

This approach provides avenues for teachers of different interest and abilities coming together as a team to present a multi-disciplinary topic to the students. Thus, when teachers work together, they gain more in terms of knowledge and team spirit and this will strengthen one another.

**Community Service Learning**

In the United States of America, community service has become part of the learning process in which students before graduation are required to complete certain community service programmes. This programme is best suited when students are classified with their areas of strengths and interest, hence the learners will be better prepared and strengthened in social and technical skills.

### **Business Partnerships for Assessment, Resources and Funding**

This approach provides partnership with business communities to students in teams to complete a school project. This approach enables the students to be involved in learning outside their classroom and are supervised by the business communities which assess what the students have learnt.

### **Global Connections**

Distance learning has brought learning closer to the learners and teachers. It is based on this, that various schools are providing the enabling environment for the technologies in order to reach both the learners and the teachers wherever they may be. Invariably, these technologies had fostered friendship amongst students world-wide since they are encouraged to work with one another.

### **Internships**

It is programmed to prepare students to life after graduation by offering them vocation on various fields. Hence, they receive internship on a particular area of interest irrespective of their area of specialization.

### **Resurgence of Art**

Artists and creativity cannot be divorced as creative people are subject to innovations and discoveries. Every area of study needs those who have the potential for creative imaginations in medicine, technology, arts, engineering etc. Therefore, arts encourages the creature acumen in the learners. The advent of technology has introduced the multimedia dimension to learning irrespective of the subject or topic learnt.

### **Laptops and Wireless Technology**

This approach to learning has created ease of movement such that one could connect to learning anywhere and anytime. It has provided a relaxed fit in that, they could fit into any classroom. It has also created a strategic deployment because they could be moved to anywhere at anytime. There is also flexibility in the use of laptops and one could configure it to suit the learning pattern of such students by the teacher. Laptops have provided convenience, simplicity and an accelerated time of learning.

### **Non Academic Life Skills Curricula:**

This means of learning revolves round conflict resolution where students are taught how to handle and resolve conflicts either with colleagues or family members or conflicts emanating from their studies. It also provides for character education where virtues and character

moulding are taught. It provides for the teaching of wisdom which enables the students to make life choices based on human quality that will make good impacts in their lives.

#### **Meaningful Career Counselling:**

It is the following up of students in terms of their ability. Counselling will expose the innate ability and strengths of the students. Counselling will enable students ensure that they could get the best out of life in their chosen area.

#### **Social and Emotional Counselling:**

Socialization is an integral aspect of education therefore, students should be taught this earlier. Thus, they should be encouraged to do team work which will foster team spirit and friendliness amongst them.

#### **Physical Fitness Programmes beyond Sports:**

Emphasis should be shifted from sports to physical fitness. A lot of health issues have emerged because attention is not paid to physical fitness thereby, resulting to health challenges which will in turn affect the students' mental well-being. Therefore, experts have called for physical activities ranging from indoor games to aerobics which will keep the students healthy.

#### **Portfolio-Based Assessment:**

It is not proper to accumulate assessment base on multiple-choice tests, this is because, it will not give a clear assessment of the students' understanding of any of the subjects taught. A thorough understanding relied upon, will be determined by the ones done by the students showing a clear understanding of what is taught. Therefore, project-based learning is a better and a more dependable means of assessment. Another form is portfolio learning in which there is storage of the students work on the internet on their own websites. This means of learning is a sure measure or assessment to students and teachers

#### **Relevant Staff Development and adequate Staff Preparation Time:**

Appropriate training and substantial preparation time are necessary for academic staff of tertiary institutions to be good facilitators of lifelong learning of their students. Hence academic staff should attend seminars, workshops, conferences and exchange programmes through collaboration with other institutions. These training programmes would expose them to latest research and effective methodology for managing non-traditional classes. It would also encourage team work with peers to design multidisciplinary projects.



Innovation is perceived as the major input for long-term economic growth (European Commission: 2008c). There seems to be a gap between the instructional methods utilized in tertiary education and what is expected in the labor market. Babalola (2007) affirmed that due to deficiencies in our educational institutions there is a disconnect between teaching in tertiary institutions and the needs of the labor market. Due to the rapid rate of transformation of knowledge, employers seek to engage creative, innovative, reflective and result oriented individuals to facilitate the level of productivity in their organizations as a result, students need to be versatile and explore other options available for wealth creation and should not be restricted or caged by their area of specialization. Tertiary education teachers therefore should focus on pedagogy that harmonizes learning with employment opportunities and self-reliance of students within the period of their study and after graduation.

Berry (2008) opined that lecture method is the most common instructional method utilized to transmit large amount of course content in tertiary institutions. Although lecture method provides an effective way of providing large amount of factual information in a short period of time. It encourages passive learning and should not be the predominant method of instruction (Kalmakis, Cunningham, Lamourreux & Amed, 2010). Hence, traditional teaching methods should be transformed to improve learning experiences and facilitate lifelong learning (Franklin, 2006). Teaching and learning strategies that would enhance critical thinking, creativity and resourcefulness among students in tertiary institutions should therefore be explored by lecturers.

## **STATEMENT OF THE PROBLEM**

Trends in educational pedagogy especially in tertiary education around the world are changing rapidly to meet the demand of global challenges. Nigeria cannot afford to be left behind if it intends to compete favorably in the global economy. Students in tertiary institutions are the critical mass needed for meeting these global challenges however; they are ill-equipped to meet these challenges. Changes in pedagogy in tertiary education require investment in innovative strategies that would encourage skills acquisition, entrepreneurship, develop and sustain the economy. Attention has not been given to investment towards the implementation of lifelong learning in tertiary education in Nigeria. There is no known government policy on institutional practices of lifelong learning in Nigeria. If the government of Nigeria intends to revive and sustain the economy, eradicate poverty, encourage job creation, diversify our economy and reduce over dependence on oil, then there must be a concerted effort among educators and



tertiary education teachers to provide lifelong learning opportunities to their students. Teachers in tertiary education must therefore utilize innovative strategies that would bridge the gap between pedagogy and economic realities. Hence, the problem of the study is to assess the innovative strategies utilized for lifelong learning in tertiary education in Rivers State, Nigeria.

## RESEARCH QUESTIONS

The study seeks to answer the following research questions:

1. To what extent are innovative strategies utilized by lecturers for lifelong learning in tertiary education in Rivers State?
2. What are the factors that hinder the utilization of innovative strategies by lecturers for lifelong learning in tertiary education in Rivers State?

## METHODOLOGY

The survey design was adopted for the study. The population of the study consists of all lecturers in the three universities and three polytechnics (Federal and State owned) in Rivers State. Stratified random sampling technique was used to draw a sample of 1,200 lecturers (male and female) from the population. Instrument for data collection was a structured questionnaire with three sections (A, B & C). Section A sought demographic data of respondents, section B consists of 21 items adopted from the “30 strategies for Education innovation” developed by Nair, Prakash (2003), that sought to assess respondents extent of utilization of innovative strategies. The responses were based on 5- point likert scale of : “Very High Extent”, “High Extent”, “Low Extent”, “Very Low Extent”, and “Never”.

Section C comprised 17 items on factors that hinder utilization of innovative strategies, developed by the researcher. The items were scrutinized by three experts in educational measurement and evaluation. A reliability coefficient, 0.81 was obtained via Cronbach Alpha. Responses in this section were scored on a 4-point scale of; “Strongly Agree”, “Agree”, “Disagree” and “Strongly Disagree”.

The data collected were analyzed using descriptive statistics.

## RESULTS

The results of the data analysis are shown below:

### Research question 1

To what extent are innovative strategies utilized by lecturers for lifelong learning in tertiary education in Rivers State?

**Table 1: Utilization of innovative strategies by lectures for lifelong learning**

| S/N | Strategies   | $\bar{X}$ | SD   |
|-----|--|-----------|------|
| 1   | Personalization of instruction                                 | 1.23      | 0.31 |
| 2   | Students advisors  | 2.28      | 0.55 |
| 3   | Small learning communities with academic                       | 1.42      | 0.49 |
| 4   | Multi-disciplinary curricular                                  | 1.76      | 0.48 |
| 5   | Cooperative learning   | 3.08      | 0.62 |
| 6   | Project based learning   | 1.22      | 0.31 |
| 7   | Peer tutoring  | 2.56      | 0.53 |
| 8   | Peer instruction   | 2.63      | 0.56 |
| 9   | Team teaching  | 1.95      | 0.31 |
| 10  | Community service learning                                     | 1.14      | 0.31 |
| 11  | Business partnerships for assessment, resource and funding     | 2.46      | 0.41 |
| 12  | Global connections   | 2.33      | 0.36 |
| 13  | Internships  | 1.00      | 0.35 |
| 14  | Resurgence of Art  | 1.87      | 0.30 |
| 15  | Laptops and wireless Technology                                | 2.76      | 0.48 |
| 16  | Non academic life skills curricula                             | 2.63      | 0.48 |
| 17  | Meaningful career counselling                                  | 3.14      | 0.54 |
| 18  | Social and Emotional counselling                               | 2.99      | 0.60 |
| 19  | Physical fitness programmes Beyond sports                      | 1.81      | 0.31 |
| 20  | Portfolio – based assessment                                   | 2.10      | 0.41 |
| 21  | Relevant staff development and adequate staff preparation time | 2.83      | 0.66 |

**Criterion mean, 3.00**

Table1 revealed the extent of utilization of the innovative strategies by lecturers in tertiary education in Rivers State. A critical look at the table indicates that only two out of the twenty-one (21) strategies (cooperative learning and meaningful career counselling) were utilized at a high extent by lecturers. The mean values of these strategies are higher than the criterion mean of 3.00. while the mean value of the remaining 19 strategies: (personalization of instruction; students advisories; small learning communities with academies; multi-disciplinary curricula; project based learning; peer tutoring; peer instruction; team teaching; community service learning; business partnerships for assessment, resources and funding; global connections; internships; resurgence of Art; laptops and wireless technology; non-academic life–skills curricula; social fitness programmes beyond sports; portfolio–based assessment; and relevant staff development and adequate staff preparation time) fell below the criterion mean. This indicates that the extent of utilization of these innovative strategies is very low.

### **Research question 2**

What are the factors that hinder the utilization of innovative strategies by lecturers for lifelong learning in tertiary education in Rivers State?

**Table 2: Factors that hinder utilization of innovative strategies**

| S/N | Items  | $\bar{X}$ | SD   |
|-----|--|-----------|------|
| 1   | Interference with research time for promotion                          | 3.30      | 0.98 |
| 2   | Lack of professional development                                       | 2.99      | 0.66 |
| 3   | Lack of facilities   | 3.31      | 0.80 |
| 4   | Lack of infrastructure   | 2.28      | 0.44 |
| 5   | Expanded curricula   | 3.34      | 0.81 |
| 6   | Inadequate in – service training for lecturers                         | 3.09      | 0.90 |
| 7   | Lack of support from the institution (Administrative)                  | 2.81      | 0.59 |
| 8   | Negative attitude of students toward learning                          | 2.25      | 0.40 |
| 9   | Lack of mentorship among members of faculty (lecturers)                | 3.20      | 0.76 |
| 10  | Insufficient time  | 3.14      | 0.70 |
| 11  | In adequate number of staff (lecturers)                                | 3.00      | 0.64 |
| 12  | Lack of funding  | 3.51      | 0.89 |
| 13  | Limited access to wireless technology                                  | 3.14      | 0.70 |
| 14  | Irregular power supply   | 2.72      | 0.56 |
| 15  | Inadequate support from cooperate organizations and the private sector | 3.04      | 0.67 |
| 16  | Most lecturers are too comfortable with lecture method                 | 3.16      | 0.71 |
| 17  | Large class size   | 3.45      | 0.64 |

**Criterion mean, 2.5**

Analysis of responses to the items in table 2, revealed that the respondents strongly disagree that two items (lack of infrastructure and negative attitude of students towards learning) hinder the utilization of innovative strategies for lifelong learning. These two items have mean value below the criterion mean of 2.5. The table clearly shows that the mean value of fifteen (15) items: (interference with research time for promotion; lack of professional development; lack of facilities; expanded curricula; inadequate in-service training for lecturers; lack of support from the institution; lack of mentorship among members of faculty; insufficient time; inadequate number of staff; lack of funding; limited access to wireless technology; irregular power supply; inadequate support from cooperate organizations and the private sector; most lecturers are too comfortable with the lecture method and large class size.) are obviously higher than the criterion mean of 2.5. The result indicated that the respondents strongly agree that these factors hinder the utilization of the innovation strategies for effective teaching and lifelong learning in tertiary education in Rivers State.

## **DISCUSSION OF FINDINGS**

The findings of the study show that most lecturers involved in tertiary education in Rivers State hardly utilize the innovative strategies for. It could be inferred that many lecturers still rely on the ineffective and unproductive lecture method. This finding is in agreement with that of Berry (2008), that lecture method which is the most common method of instruction in the tertiary institutions is ineffective and often used to transmit large amount of course content to students. It is also alarming that “relevant staff development and adequate staff preparation time”, which is key to exposing academic staff to innovative strategies is lacking. This implies that if there is no improvement in the capacity and knowledge acquired by the lecturers, then the students would be exposed to obsolete pedagogy and inadequate knowledge required to meet the demands of the labor market and economic development.

The major constraints to the utilization of the innovative strategies include: interference of instructional time with research time for promotion of lecturers; lack of facilities; expanded curricula; inadequate in- service training for lecturers; lack of mentorship among members of faculty; insufficient time; inadequate number of staff (lecturers); Lack of funding; limited access to wireless technology; inadequate support from cooperate organizations and the private sector; large class size and most lecturers are too comfortable with the lecture method. The finding is in tandem with the study of Hochman, Tocci and Allen (2005) that teachers (lecturers) and administrators charged with the responsibility of fostering students' academic and social growth are likewise deprived of conditions and resources that support their own capacity to educate learners. The findings reveal that implementation of lifelong learning in tertiary education in Rivers State would be a mirage if this trend is not appropriately addressed.

## **CONCLUSION AND RECOMMENDATIONS**

Innovative strategies necessary for lifelong learning are hardly utilized by lecturers in tertiary education in Rivers State. The under-utilization of these innovative strategies can be attributed mainly among other factors to; lack of professional development of the lecturers, insufficient time, inadequate number of staff, lack of mentorship among faculty members, inadequate in-service training of lecturers and inadequate funding.

Based on these findings the following recommendations were made;

- Academic staff should invest in their professional development without undue dependence on institutional and government funding.

- More academic staff should be employed in order to bridge the gap between the number of academic staff and high enrolment of students. This would enhance lifelong learning.
- Tertiary institutions in Rivers State should collaborate with cooperate organizations and the private sector for professional development of academic staff.
- Exchange programmes with international institutions should be encouraged to expose academic staff and students to innovative strategies in pedagogy and lifelong learning.
- Mentorship should be mandatory among academic staff. This would ensure that upcoming lecturers acquire requisite skills for professional development from the wealth of experience of other members of faculty.
- More resources should be invested in the provision of facilities and infrastructure that would facilitate lifelong learning in tertiary education in Rivers State.

## **REFERENCES**

- Babalola, J.B. (2007). Reinventing Nigerian higher education for youth employment in a competitive global economy.
- Berry, W. (2008). Surviving lecture: A pedagogical alternative college teaching, 56 (3) 149-153.
- European Commission (2000). A memorandum on lifelong learning. Luxembourg; European Commission.
- European commission (2009). Communication from the commission to the European Parliament, the European Commission report.
- European commission (2008c). AIPINE – Adult learning professions in Europe: A study current situation, trends and issues. Brussels: European Commission.
- Franklin; D. (2006). Pathways of utilizing technology in nursing education. In S.W. Rayfield & L. Manning (Eds). Pathways of teaching nursing: keeping it real. Bossier L.A: ICAN Publishing.
- Hochman, D; Tocci, C. & Allen, D. (2005). Advisory programmes in high school restructuring. Retrieved September 18, 2016 from [www.tccolumbia.edu/NCREST/Aera/acra2005-advisory.pdf](http://www.tccolumbia.edu/NCREST/Aera/acra2005-advisory.pdf).

- Kalmakis, K.A; Cunningham, H; Lamourreux, E. T; & Amed, E. M. (2010). Broadcasting simulation case studies to the didactic classroom. *Nurse Educator*, 35 (6), 264-267.
- Mohasi; V.M & Lephoto, H.M. (2007). Collaborating with extended stakeholders to promote learner support for distance learners: the case of the institute of extra mural studies. Unpublished research report.
- Nair, P. (2003). 30 strategies for education innovation: A guide book. Retrieved August 30, 2016. From [www.fieldingnair.com/publications/EdInnovationsNair5](http://www.fieldingnair.com/publications/EdInnovationsNair5).
- Nesbit, T; Dunlop, C; & Gibson, L. (2007). Lifelong learning in institutions of higher education. *Canadian Journal of University Continuing Education*, 33 (1) 35-50.
- Novak, J.D. (2003). The promise of new ideas and new technology for improving teaching and learning. *Cell Biology Education*, 2(2) 122-132.
- OECD (2012). Better skills, better jobs, better lives: A strategic approach to skills policies, OECD publishing. Retrieved August 15, 2016 from <http://dx.doi.org/10.1787/9789264177338-en>
- Osborn, M; & Thomas, E. (2003). Lifelong learning in a changing continent. Leicester, UK: NIACE
- Oseghale, O, & Adeyomoye, J.I. (2011). Emergence of the global knowledge economy: Implications for Libraries and lifelong learning in Nigeria. *The African Symposium: An online Journal of the African Educational Research network* 11 (2) 77- 9
- Simplicio, J.S. (2000). Teaching classroom educators how to be more effective and creative teachers. *International Education Journal*, 4(2), 120.
- UNDP (2009). Millennium development goals report. New York: UNDP.
- UNESCO (2001). Teacher training through distance learning: technology, curriculum, cost evaluation. summary of case studies. Paris.
- UNESCO (2015). Rethinking education: Towards a global common good? UNESCO Report.