EMERGING ISSUES IN TEACHING EFFECTIVENESS OF ENVIRONMENTAL EDUCATION RELATED THEMES IN JUNIOR SECONDARY SCHOOLS CURRICULUM IN CROSS RIVER STATE, NIGERIA

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ABSTRACT

The purpose of this paper was to examine the emerging issues in teaching effectiveness of environmental education related themes in junior secondary school curriculum. The paper pointed out the various teaching methods adopted by teachers in teaching. The factors that hamper teaching effectiveness in higher education institution include: poor attitude of teachers in the integration of information communication technology (ICT) into teaching and research; poor classroom management; brain-drain syndrome and poor pay; inadequate learning environment and facilities; lecturer-student ratio; poor or inadequate funding for research; inaccessible teaching scholarship and grant. The paper also suggested ways of improving teaching effectiveness of environmental education related themes in junior secondary school curriculum: enhancing professional development and teachers' preparation; adequate funding; integration of ICT into teaching and research; upward review of pay-packages of teachers. The paper all call on governments and proprietors of public and private secondary schools respectively to increase its budgetary allocation to these institutions as well as making teaching scholarship and research grant available and accessible . Well-equipped ICT centers should be established to enhance teacher's accessibility to information in order to improve teaching effectiveness.

Keywords: education, environment, , teaching effectiveness, teaching method, and teacher.

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1. Introduction

The world today is now faced with various environmental problems ranging from climate change to global warming. Many of these problems are as a result of man's activities on the environment. For the last several decades, nature and environment have always been a source of human reflection and investigation as the environmental or pollution has readied to such a critical stage that we find ourselves passing through an irreversible climate change and are not able to retrieve the various climate back (Misbra, 2012). According to Kaur and Kaur (2013) polluted environment endanger the human race by threatening its survival on planet earth. Boundaries of any nation cannot limit these environmental problems to a particular country and region, but its impact is global one. Environment has become the concern of all; the academicians, intellectuals, scientists, policy makers and government across continents. (Kant, and Sharma 2013). The threats to the environment were first raised during the Stockholm Conference in 1972. The key issues discussed in the conference were: Inadequacy of human settlement whereby the participants noted that the houses in town were not enough and thus need to construct more houses, the problem of insufficient clean water, infectious diseases such as tuberculoses, cholera, typhoid and rampant poverty were of increase (Peter and Cheruto, 2013).

Similarly, in 1992, the Earth Summit held in Rio de Janeiro, Brazil was organized as well as the Global Forum in 1992 was also slated. The activities were organized by the International NGO Forum showed that environment is on the agenda of the International Community. The need for environmental education and awareness were stressed to increase the concern of people about the environment. Kant and Sharma (2013) opined that environmental movement have focused attention on the quality of the air we breathe and the water we drink, on how new dam construction harms wildlife and how strip miming devastates the landscape and causes floods. In an attempt to address these problems, several recommendations were made, among which; the United Nations was to establish an International Programme in Environmental education, an agency to address environmental issues was formed (United Nations Environmental Programme, UNEP) and the earth's capacity to produce essential renewable resource was to be maintained and whenever practicable, restored (Peter and Cheruto, 2013). Many nations implemented these recommendations including Nigeria, globally degradation of environment still persisted even up to date. In Nigeria for instance, in 2012 large volumes of floods devastated farmlands, housing, public utilities etc in Kogi, Benue, Cross River, River State and Abuja.

However, despite the implementation of the recommendations of the Stockholm Conference, the earth's forest cover has been significantly reduced to provide wood, ores have been minded for both fuel and to build things; plant and animals have been domesticated, bred and commoditized to provide food (Joseph, 1997). In Nigerian, several Institutions have been established to handled the deteriorating state of the environment. The continuous depletion of natural resources and particularly destruction through human activities have been a major area of concern. These institutions have as its functions; to regulate, formulate policies, set standard enforcement, and implement environment laws and regulations. In Nigeria, these institutions include: The Federal Ministry of Environment established in 1999, Federal Environmental Protection Agency (FEPA), Nigerian Environmental Standard Regulatory and Enforcement Agency (NESREA), National Oil Spill Detection and Response Agency (NOSDRA), National Emergency Management Agency (NEMA), etc. National Parks in Cross River States efforts have also been made to raise environment awareness and education through the State Ministry of Environment, Forestry Commission, Department of Biodiversity, Calabar Urban Development Authority (CUDA) etc.

According to Kant and Sharma (2013) we must know what environment is and why it needs our attention. Several Scholars have made attempts on what environment is. Environment is a surrounding or conditions influencing development and growth of all the living beings. (Misbra, 2012). In essence, environment depict all the surrounding conditions that are capable of affecting the behavior, growth and development of the interacting living things within the system, where life exist which is known as the biosphere. Environment is the sum total of all external conditions which may not act upon an organism or community, to influence its development or existence. (Douglas, Hugget and Robbinson, 1996). Environmental education is a way of creating knowledge, understanding, values, attitudes, skills, abilities and awareness among individuals and social groups towards environmental protection (Shobeiri, Omidvar and Prahallada, 2007). Environmental education is a cross curriculum topic promoting global awareness, sustainable living and active citizenship. (Talero, 2004). It is an organized efforts to teach about how natural environments functions and particularly how human beings can manage their behavior and ecosystem in order to live a sustainable life (Jimoh, 2009). It is the study of nature, natural resources, the interrelationship with man, human activities, disturbances to the

environment and the attempts to improve the environment. It is the application of knowledge from different disciplines to study and manage the environment.

This study defines environmental education as the integration of learning experiences from the environment into the environment in order to improve environmental consciousness for sustainable living. Life requires the correct balance of environmental conditions to survive. Human activities have in no small measure impacted negatively on the environment thereby the need for creating corrective balances. Environmental education should be a lifelong process and should aim at merely impacting knowledge and understanding of man's total environment and of the methods and application for improving our near and distance surroundings but it should also aim at including skills, the attitudes and values necessary to understanding, appreciate and improve our biosphere and troposphere (Mistra, 2012). It is also important to note that environmental education is yet to be implemented into the primary and secondary school curriculum, but rather some of its themes are fused into various subjects. At tertiary level, University of Calabar offers environmental education, at diploma bachelor's, postgraduate diploma and masters level, while University of Benin and Abuja have it at undergraduate level.

Since 1988 when the Nigerian Conservation Foundation (NCF), a non-governmental organization succeed through its programme in sensitizing the federal government to the introduction of conservation education at all levels of the education system, the level of concern and action about environmental education has increased. NCFs Initiative is particularly reflected in the Nigerian Federal Government's Communities and plans to review the national curricula and infuse environmental education themes at the primary, secondary and tertiary levels (Adebayo and Olawepo, 1997). Already, the Federal Government directed its agency, the Nigerian Educational Research and Development Council (NERDC) to infuse environmental education elements into the new citizenship education curriculum of primary and secondary schools (NERDC, 1992). Today, Nigerian Secondary School have environmental education is infused into social studies, basic science, basic technology and agricultural science. This study is aimed at assessing those themes or elements that reflects environmental education with prospects of creating environmental awareness at the level. Students at this level are highly receptive and dynamic thus, can be strongly motivated to understand the implication and consequences of environmental destruction and can take preventive actions. There is therefore, need for teachers to be aware of the environmental education aspects, only the he/she can convince the society

about the urgency of environmental education and make the future generations aware of the environmental problems and their solutions (Nagra and Singh 2013). This type of study is necessary to aid the process of developing environmental education policy and practice in Nigeria Secondary schools. This study will investigate issues in effective teaching of environmental education related subjects is creating the necessary environmental awareness among junior secondary school students.

2   Effective teaching methods and environmental education related themes

According to McMilla, (2007) numerous attempts have been made to identify these characteristics, using a variety of theoretical perspective, from qualitative and quantitative approaches, from various disciplinary standpoints and from student point of view. Therefore, there is no universally accepted definition of effective teaching.

Effective teachings have been broadly understood as teaching that is oriented to and focus on students and their learning. Beyond the fundamental assumption are two broadly accepted components of effective teaching: that is, it requires a set of particular skills and practice as identified by research and that its meets the requirements of the context in which it occurs (Penny 2003; Davlin 2007).

This study defines effective teaching as the integration and articulation of various teaching methods aimed at demonstrating contribution to the growth of student learning and fruitful student's outcomes. This means that the student is the focal point. The various teaching methods are geared at motivating and engaging students to acquire new skills and knowledge with the goal of graduation and success of students after their education. Many researchers have focused on whether or not students are legitimate judges of teaching effectiveness (Sajjad, n.d). Though caveats abound, the general sense is that students are both rational and reliable source of evidence (Arreola 1995). While in class, students are expose to all sorts of institutional experiences (lectures, instructional materials) and aids, readings, exams. They are in effect experimental consumers-able to discern quality, relevance, usefulness, and instruction with students. (Montgomery, n.d). Theall, (n.d) mentioned that the students can answer questions about the quality of lecturers, the value of readings and assignments, the clarity of the instructor's explanation. Students are certainly qualified to express their satisfaction or dissatisfaction with the experience. The following are various methods of teaching

environmental education themes in junior secondary school curriculum : lecture, group discussion, individual presentations, assignments, seminars, workshops, conferences, brainstorming, role play, case study etc.

2.1   Lecture Method

A lecture is a talk or verbal presentation given by a lecturer, trainer, instructor or a speaker to an audience. With the advancement of training system and computer technology, lecture method is still a backbone widely used in teaching and training in higher education institutions in educators. This method is economical, can be used for a large number of students, materials can be covered in a structured manner and the educator has a great control of time and material (Sajjad, n.d). In a study carried out by Kelly (n.d), lecture method is a straight forward way to impact knowledge to students quickly and that teachers have a greater control over what is being taught in the classroom because they are the sole source of information. However, he asserted that the cons of the methods is that students who are weak in note-taking skills will have trouble understanding what they should remember from lectures as well as lack of interest to asked questions as they arise during lectures. A study conducted by Sajjad (n.d) reveals that most of the students considered lecture method as the best method because according to opinion of students; it creates new ideas, it is good for large class, develops creativity among students, teachers or educators are experienced and has mastery on subject, explain all points and can answer all questions by students. Sullivan & Mcintosh (1996) said that with planning and effective presentation technique, the lecture can be a highly effective and interactive method for transferring knowledge to student. Lecture gives the student training in listening and taking rapid notes.

2.2   Group Discussion Method

Group Discussion method is a primary teaching method which allows students to stimulate critical thinking especially in solving environmental problems. It is one of the most challenging, as well as one of the most rewarding (Washington University in Washington, St. Louis, (2009). It is a free verbal exchange of ideas between group members or teachers and students. For effective discussion, the students should have prior knowledge and information about the topic to be discussed. McCarthy (1992) stated strengths of class discussion as: pools ideas and experiences from groups, and allows everyone to participate in an active process. Kochhar (2000) stated that, a problem, an issue, a situation in which there is a difference of

opinion, is suitable for discussion method of teaching. A study by Sajjad (n.d) reveals that the students rated discussion as the second best method by giving reasons that; it has more participation of students, that learning is more effective, the students don't have to rely on role learning, every student gives his/her opinion, and this method develops creativity among students. According to University of Washington in St. Louis (2009), discussion method established a rapport between students and higher institution educator as it demonstrate that the educator appreciates students contributions at the same time that the educator challenges than to think more deeply and to articulate their ideas more clearly. Frequent question, whether asked by the educator or students, provide a means of measuring learning and exploring in-depth concepts of the course.

2.3   Role Play Method

Role play occurs when participants take on differentiated roles in a simulation. These may be highly prescribed, including biographical and environmental details, and even personality, attitudes and beliefs, or loosely indicated by an outline of the function or task (Sajjad, n.d). A role play is a re-enactment of past experiences. In this sense, all learners are involved to enact an issue or a situation about which they are familiar in their past. This approach or method is particularly useful where learners share a somewhat similar experience and that experience or issue is difficult to recall because of its emotional valence. It can be used where the possibility to recall of past experiences is likely to be uneven among learners (Teaching technique n.d). It is a memorable and enjoyable learning method. To gain maximum benefits from this method, the incidents selected for enactment should be as realistic as the situation allows (Singh and Sudarshan, 2005). Before the role play, the teacher brief participants about the roles they will play give them time for preparation, confirm confidentiality of role play, and ask participant to behave naturally.

2.4   Assignment Method

Written assignment as a method of teaching in secondary schools helps in organization of knowledge assimilation of facts and better preparation of examinations. It emphasizes on individual work and the method that helps both teaching and learned process (Kochnar 2000). However, the teachers should describe the parameters of the topic of assignment and fully explain so that the students know how to prepare best. Davis (1993) suggests that give assignment and exams that recognize student's diverse backgrounds and special interest. For

example, a faculty member teaching a course on medical and health training offered students a variety of topics for their term papers, including one on alternative healing belief system. A teacher in the social sciences can gives students an assignment asking them to compare female only, male only and male – female work groups in solid waste management.

To evaluate teaching effectiveness different methods can be used including: peer review, self-evaluation, teaching portfolios, student's achievement and students rating of teaching methods used by their teacher. Peer review is the evaluation of creative work performance by other people in the same field in order to maintain or enhance the quality of the work or performance in that field. Peer review is an alternative source of evidence seems to be climbing up the evaluation ladder, such that more than 40% of liberal arts colleges use peer observation for summative evaluation (Seldin, 1999).

According to Berk (2005) peer review of teaching is composed of two activities: peer observation of in-class teaching performance and peer review of the written documents used in a course. Peer observation of teaching performance requires a rating scale that covers those aspects of teaching that peers are better qualified to evaluate than students. The scale items typically address the teachers content knowledge, delivery, teaching methods, learning activities etc. Peer review of teaching materials requires a different scale to rate the quality of the course syllabus, instructional plans, text/projects.

In addition, self evaluation is another to evaluate teaching effectiveness of teachers. A few studies found that Instructors or teachers rate themselves higher than (Centra, 1999), equal to (Botinn, Genhy, Lowman, Pralt, and Zhu, 2004) or lower than (Bo-Linn et al 2004) their students rate them. Highly rated educator gives themselves higher rating than less highly rated educators (Doyle & Crichton, 1978). Superior educators provide more accurate self-rating than mediocre or putrid educators (Centra, 1973). Despite this possibly biased estimate of teaching effectiveness secondary school teachers, this evidence can provide support for what teachers do in the classroom and can present a picture of their teaching unobtainable from any other source. Further, it seems reasonable that assessment of teaching should count for something in the teaching effectiveness equation.

Learning outcome measure is another method used to evaluate teaching effectiveness. Teaching effectiveness is assessed in terms of student productivity, that is, it is outcomes-based. Establishing student performance on learning outcome as an independent, valid measure of

teaching effectiveness is fraught with numerous difficulties. The crux of the problem is isolating teaching as the sole explanation for student learning. Performance throughout a course on tests, projects, reports, and other indicators may be influenced by the characteristics of the students, the institution and the outcome measures themselves, over which faculty have no control (Berk, 1988). Fenwick (2001) recommended that the results of standard outcome measures, such as test, problem-solving exercises, projects and simulations, be aggregated across groups of students for programme evaluation decisions about teaching methods and programme improvement. Also, multiple measures can be combined to give meaningful feedback to faculty about pattern of outcome.

Teaching portfolio is a description of an instructor's which is a description of teacher's major strengths and teaching achievement. It is also an approach to teaching enhancement whereby a teacher can gauge successes, opportunities for improvement, and means for fulfillment.

O'Neil & Wright (1995) highlighted that teaching portfolio contain the following frequently used items.

- ➢ Student course and teaching evaluation data which suggest improvement or produce an overall rating of effectiveness or satisfaction.
- ➢ List of course titles and numbers, unit values or credits enrollments with brief elaboration.
- ➢ List of course materials prepared for students.
- ➢ Participation in seminars, workshops, and professional meetings intended to improve teaching.
- ➢ Statements from colleagues who have observed teaching either as members of a teaching learns or as Independent observers of a particular course, or who teach other sections of the same course.
- ➢ Attempts at instructional innovations and evaluations of their effectiveness.
- ➢ Participating in course or curriculum development.
- ➢ Student essays, creative work, and project of field work reports.

Summarily, as a collection of many of the previous sources, teaching portfolio should be reserve primarily for summative decision to present a comprehensive picture of teaching effectiveness to complement the list of research publications.

3. **Emerging issues teaching effectiveness of environmental education related themes in junior secondary school curriculum**

Teaching effectiveness is important because effective teaching helps student learning. It has become even more important as the emphasis on quality in higher education institution has increased. Effective teaching does not occur by chance. Effective educators have become good at what they do because of regular evaluation.

Consequently, several issues have being identified in this study:

3.1   Attitudes of teachers towards integration of ICT into teaching and research

The need for the development of Information Communication Technology (ICT) is a global resolution and has been a subject of great significance to all mankind (Olafe, 2005). ICT is a shorthand for the computers, software, networks, satellite links and related systems that allow people to access, analyze, create, exchange and use data, information and knowledge in ways that were almost imaginable (Association of African Universities, 2000). Teachers in secondary schools are involve in two things: teaching and research, with auxiliary administrative assignment. The ICTs have the potentials of not only ensuring effectiveness and efficiency in these two areas of teaching and learning (Onasanya, Shehu, Oduwaiye and Shehu, 2010). However, poor attitude of teachers towards ICT has greatly hampered effective teaching. Many teachers before now do not have the basic knowledge towards the use of ICT, even when there is provision of these facilities in some institutions, but Cross River Government through the State Secondary School Board have purchase laptops for teachers. Teachers are currently being trained on basic computer knowledge and applications. Lack the competence to make personal use of ICT, competence to master range of educational paradigms that make use of ICT, insufficient competence to make use of ICTs as mind tools, as a tool use for teaching. ICT has a number of features which is particularly suitable for higher education institutions such as the combination and integration of full range of media essential for learning (use of sound, vision, text and numeric data); the provision of teachers with new opportunities and in particular, distance learning and involvement in the real world; provision of students with opportunities to work and learn on their own. Due to poor attitude of lecturers in the integration of ICT into teaching and research, effective teaching will not become a problem, students learning outcome will not be

competitive with their contemporaries in the western world will not be commensurate to what is obtainable in the ICT age.

3.2   Poor Classroom Management

Classroom management refers to all of the things that a teacher does to organize students, space, time, and materials so that learning can take place. This management include: fostering student involvement and cooperation in all classroom activities and establishing a productive working environment (Wong, n.d). Kizlik (2012) observed that effective teaching requires considerable skills in managing the myriad of tasks and situations that occur in the classroom each day. Skills such as effective classroom management are central to teaching and require "common sense", consistency, a sense of fairness, and courage. He further highlighted that many teachers have difficulty effectively managing their classroom which militate against effective teaching. Consequently, students do not know what is expected of them are generally not successful. In addition, the classroom climate is not work-oriented, relax and pleasant but relatively much time is wasted, confusion or disruption is experience. This affects teaching effectiveness of teachers.

According to Marzoino, Marzano & Pickering (2003), effective teaching and learning cannot take place in a poorly managed classroom. If students are disorderly and disrespectful, and no apparent rules and procedures guide behavior chaos, become the norm. In this situation, both the educator and student suffer. Teachers struggle to teach the environmental education themes, and students most likely learn much less than they should.

3.3   Inadequate Learning Environment and Facilities

It is worrisome that Nigerian secondary school infrastructures and facilities are fast decaying. Ajayi & Haustrip (n.d) noted that all the resources required for education production process are in short supply. Lecture halls, , laboratories, students hostels, library space, office space, books and journal are inadequate and in some quota in an advance state of degradation or ill-equipped. The equipment for teaching, research and learning of these themes are either lacking or very inadequate and inadequate and in a back shape to permit teachers to carry out the basic functions of academics (World Bank, 1994). This situation is exacerbated by the absence of a reliable supply of electricity, water, internet, sporting facilities and centers for social activities (Sa'ad, 2010). There are also inadequate environmental materials and resources such as maps, pictures, books etc that could give enhance students' knowledge and skills in

environmental management. The absence of these facilities/infrastructures has militated against effective teaching of environmental education themes in secondary school by teachers.

3.4   Teachers – Student ratio

Teacher/student ratio is the number of teachers in a school divided by the number of student who attends the institution. For example, a teacher – student ratio of 20:1 indicates that there are 20 students for every one teacher. In Nigerian, the standard is teachers – student ratio of 1:30, but most secondary schools in Nigeria have at least 1:60 teacher – student ratio. Consequently, the ratio becomes a big problem for teaching effectiveness of the themes by the teachers. The class size control by the teacher becomes a problem and in most cases where there is no microphone in classrooms, teaching effectively becomes an issue. Student's population especially in government schools grows experientially, leading to further strain on dilapidated structure and environmental materials where available. As student populations outstripped available teachers, classroom and teaching resources, teachers to become overburdened with crowded classrooms and excessive grading responsibilities. The teachers is left with little time for self improvement thereby affecting teaching effectiveness and classroom deliveries.

3.5   Poor/Inadequate Funding

Poor funding of secondary education contribute to the present state of under achievement. The absence of adequate funding and clear direction has left the institutions to manage mainly in routine activities. The apparent shortage of fund available to secondary education institutions system has been responsible for declining libraries, social and laboratories facilities in recent years. The non availability of fund for teachers for research and development have militating against effective teaching. Karluki (n.d) noted that the impact of underfunding is currently reflected in inadequate infrastructure, insufficient educational facilities, high student – teacher ratios, inadequately trained academic and managerial staff, use of outdated technology in teaching and learning, and the delivery of low quality education. The absence of these environmental teaching facilities due to inadequate funding hampers effective teaching in secondary school. This research problem is coupled with poor teaching conditions making most of the Scholars operate businesses or part time job to "make ends meet".

3.6   Inaccessible Teaching Scholarship/Grant

Most secondary school teachers have no access to teaching scholarship as it is obtainable in higer institutions. Berk (2005) opined that teaching scholarship contribute to a growing body

of knowledge about teaching and learning in higher education by presenting at teaching and learning conferences and publishing in teaching and learning journals. Presentation and publications in teaching and learning on innovative teaching techniques and related issues are indicators of teaching expertise (Berk, 2005). The same achievements could also be recorded if applicable to secondary schools teacher. Research on important questions in teaching and learn cannot only improve educator's effectiveness in his or her own classroom, but also advance practice beyond it (Hutchings & Shulman, 1999). However, evidence of teaching scholarship may consist of presentations on new teaching methods, such as research, workshops, and keynotes at teaching institutes and conferences. Where this scholarship is not available for teachers, they will rely on their old methods of teaching, paper presentations and will be lost in current trends as regard teaching. These to a large extend impact negatively on the teaching effectiveness of environmental education themes.

4.   **Ways of improving teaching effectiveness of environmental education themes in secondary schools**

The primary goal of studying factors that militate against teaching effectiveness of teachers involve in teaching environmental education related themes in secondary schools is to highlight areas of improvement of their knowledge and skills so that they improve student achievement. It therefore becomes necessary to suggest ways of making the teaching more effective and efficient in relation to contemporary Nigeria society as well as to meet global standard.

4.1   Enhancing teacher professional development

Secondary schools in Nigeria should on regular basis organize professing development programmes in environmental education aimed at improving teachers teaching effectiveness of related subjects. Professional development programme foster collaboration and builds capacity within a school, thus reducing the need for outside "experts" (Hirsh & Killion, 2007). All teachers can benefit from professional development focused on improving effectiveness. Research is clear that one-day workshops are inadequate to improve teaching (Geortz, Porter, Dosimone, Birman & Yoon, 2001). Staff development that happens regularly, in the building where the teachers works, and that is driven by clear goals, useful data, and teacher input does improve effectiveness (Suporitz & Chritman, 2003). Teachers effectiveness improves when teachers collaborates as part of learning communities, group of teachers working together to

improve student achievement to build a culture of shared responsibility for learn (Hirsh & Killion, 2007).

On the other hand, teacher preparation programme emphasize subject-matter mastery and provide many opportunities for teachers to spend time in real classroom under the supervision of experience mentor. Teaching information, techniques and method are constraining being update and change and this means that education alone will not be enough to serve the educator throughout their whole career. Professional development is about life-long learning and growing as a teacher. It offers opportunities for teachers to refine their skills, helps figure out why you make certain decisions ad can look into the way the teachers think about and deal with certain situations. Most teachers fail in their classroom, for example, with classroom management, these issues can be hard to overcome. Through professional development and teacher's preparation is all about improving and moving forward.

4.2   Adequate Funding

The gross under-funding of the educational system in the country has been rendering the secondary education system incapacitated. Government and proprietors of public and private secondary school schools should therefore allocate more funds to the institutions so that they can be more effective in their day to day operations. These funds should be further made available and accessible for educators to access as research grant or teaching scholarship to enhance their teaching effectiveness.

4.3   Integration of ICT into teaching and research

Since educators are involved basically in teaching and research, the importance of ICT integration becomes a necessity for the enhancement of teaching in Nigerian secondary education institutions. ICT involves the use of environmental hardwares and software such as hard processors, graphic packages, digital camera, presentation application, database and spreadsheet etc. It therefore, importance for educator to acquire ICT knowledge since their integration into teaching will be dependent on teacher's knowledge, competence and willingness to integrate ICT into their teaching. ICT can facilitate research in any discipline as they provide quicker and easier access to more extensive and current information through ditigal libraries that provides digitized full-text resources to lecturers (Yusuf & Onasanya, 2004). ICT offers innumerable benefits in enriching the quality and quantity of teaching in higher institutions. It is

importance for higher institutions to provide virtual learning centres with well-equipped internet connection to aid network accessibility.

4.4   Upward review of pay-packages for teachers

In order to attract and sustain best brains in Nigeria secondary schools, there is need for upward review of pay packages for teachers. According to Ibukum (1997), the situation where a young graduate who is fortunate to take up job outside unified public service immediately earns salaries sometimes twice his professor's annual income does not augur well for staff motivation and stability of Nigerian secondary education system. Moreover, the same situation applies to Nigerian public office holders (e.g governors, senators, members, ministers etc.) earn much more than teachers. There is therefore a need for governments and proprietors to regularly review upward the salaries and conditions of service of teachers. This will improve their teaching effectiveness and productivity, teachers would not have to go abroad looking for greener pasture.

5.   **Conclusion**

It has been seen that the secondary schools, which is the bedrock of development in Nigeria is bisected with an arrays of problems which militate against effective teaching. There include non integration of ICT in teaching and research, inadequate learning environment and facilities, poor pay packages, teachers /student ratio, inaccessible teaching scholarship/grants and so on. Therefore, for well-equipped graduate to be produces from secondary schools, the governments and proprietors of public and private institution respectively must be ready to address the issues of funding. Adequate appropriation of fund will help to solve the problem of infrastructure. It is important also that government should provide ICT well-equipped centres and short ICT training programmes for lecturers to acquire basic commuter competency training to enhance the research and teaching effectiveness. As a matter of urgent educational interest and important should review upward the pay-package for teachers to boost their morale and improve their teaching effectiveness. It is clear that trust must be built in teacher effectiveness so that they can use them to improve their practice. Research support using combination of external and internal incentives to stimulate improvement in teaching.   As education becomes increasingly important, there is need for poly makers and educators to find a new and better ways to improve higher institutional educator teaching effectiveness.

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