Contents

LUX AD ILLUMINANDUM

A Bi-annual Peer Reviewed Educational Journal

Statement showing ownership and other particulars about
EDUCATIONAL EXTRACTS

Place of Publication : St. Thomas College of Teacher Education, Pala, Kottayam

Periodicity of Publication : Half Yearly

Managing Editor : Prof. Jose P. Mattam

Chief Editor : Dr. T. C. Thankachan

Printer & Publisher : Prof. Jose P. Mattam, Principal (Rtd.), St. Thomas College of Teacher Education, Pala, Kottayam

Nationality : Indian

Address & Ownership : Prof. Jose P. Mattam, Principal (Rtd.), St. Thomas College of Teacher Education, Pala, Kottayam

Printed at : St. Thomas Offset Printers, Pala, Kottayam, Kerala

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Prof. Jose P. Mattam
Managing Editor & Publisher,
Educational Extracts

TEACHING METHODS AND STUDENTS' ACADEMIC PERFORMANCE IN COMPUTER SCIENCE IN JUNIOR SECONDARY SCHOOLS

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Abstract

Different methods are used in the teaching and learning of Computer science in junior secondary schools in Nigeria, How these methods influence students' academic performance is the major concern of this paper particularly as it affects the study area. The study adopts the descriptive survey design as it is concerned with peoples' perceptions on the strategies influencing the teaching and learning of Computer science in schools. The population of the study is made of all the Public Secondary Schools in Calabar Municipality with the sample size of 10 schools using the stratified random sampling technique. The questionnaire was used as instrument for data collection. Findings revealed that procurement of computer facilities in schools was inadequate couple with inadequate funding, un-stable curriculum for the teaching and learning of computer science at the senior school levels in Calabar Municipality until recently has negatively influenced the teaching and learning of mathematics in public secondary schools.

***Key words:** Computer, Computer Science, Junior Secondary and teaching Method/Strategy*

Introduction

A teaching method comprises the principles and methods used for instruction to be implemented by teachers to achieve the desired learning in students. These strategies are determined partly on subject matter to be taught and partly by the nature of the learner. For a particular teaching method to be appropriate and efficient it has to be in relation with the characteristic of the learner and the type of learning it is supposed to bring about. Davis (1997) suggests that the design and selection of teaching methods must take into account not only the nature of the subject matter but also how students learn.[1] In today's school the trend is that it encourages a lot of creativity. It is a known fact that human advancement comes through

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reasoning. This reasoning and original thought enhances creativity. The approaches for teaching can be broadly classified into teacher centered and student centered. In Teacher-Centered Approach to Learning, Teachers are the main authority figure in this model. Students are viewed as "empty vessels" whose primary role is to passively receive information (via lectures and direct instruction) with an end goal of testing and assessment. It is the primary role of teachers to pass knowledge and information onto their students. In this model, teaching and assessment are viewed as two separate entities.

Student learning is measured through objectively scored tests and assessments.[2] In Student-Centered Approach to Learning, while teachers are an authority figure in this model, teachers and students play an equally active role in the learning process. The teacher's primary role is to coach and facilitate student learning and overall comprehension of material. Student learning is measured through both formal and informal forms of assessment, including group projects, student portfolios, and class participation. Teaching and assessments are connected; student learning is continuously measured during teacher instruction. [2] Commonly used teaching methods may include class participation, demonstration, recitation, memorization, or combinations of these.

Computer science is essential for national development, economic growth, planning and social revival in all areas of human development. It is also on this premise that the various ministries of education in Nigeria (Federal and States) have made its

teaching and learning compulsory at the junior secondary school levels. It is even on this common ground and the need to assist government achieve theabove objectives that both private and corporate organizations do donate and distribute computer systems to most schools including those around the study area to stimulate computer education in the society in our schools, including those at the junior secondary level. The overall objective is to help improve on the quality of teaching and learning in our schools. Despite these lofty efforts and gestures, findings have indicated that majority of the students at the junior secondary school level particularly those around Calabar Municipality are either not offering the subject or are doing so without meaningful results owing partly but not restricted to variations in the various methods adopted by the teachers in various schools. The study therefore is aimed as investigating the most suitable method that can be employed to create a balance in the teaching and learning of computer science in our junior secondary schools that will lead to the desire changes in the behaviour of the learners.

On the positive direction, computer science has played a major role in linking businesses and individuals together in terms of geographical distance by using information and communication technology as a platform. Transactions are being carried out within and outside offices, twenty four hours a day. In view of this, educational systems in various countries have got to factor out a suitable curriculum to implement the potentials of computer technology for its citizenry starting from the junior secondary level. The methods adopted by schools

in the teaching and learning of computer science around Calabar Municipality in Cross River State have both direct and indirect implications on the teaching and learning of computer science in junior secondary schools in the state. No matter the method adoptedtherefore, the need for computer science in junior schools should not be over-emphasized.Ugoji (2006) explains computer as an electronic machine that performs task such as collection of electronic communication under the control of a set of instruction called programme. The programmes that the computer uses usually reside within the computer and are retrieved as possessed by the computer. He further remarked that the computer as an electronic machine has the ability to accept data, process the data and retrieve data. I.e. gives out result as output.

In his case, Anyong (2006) sees computer science as a means of systematic, rational and organized process of transmitting knowledge attitude and skills in accordance with professional principles. He also opined that teaching has come to be a task and should involve only professional teachers in order to transmit the needed knowledge of the computer to the learners properly using the best of the methods and strategies. Learning on the order hand is defined as a change in behaviour based on previous experience.Most often, majority of the students graduating into the senior secondary have difficulties making use of the computer in solving their educational needs and task just like teachers often do not teach the students the right kind of things owing to variations in the methods and strategies involved in the educational process.

Statement of the problem

Almost every human creation today is computerized. It therefore becomes imperative that everybody becomes computer literate, even before we become students. With this knowledge, they will be able to cope with challenges in their future endeavours.Being technical as the subject may be it becomes essential that computer teaching and learning in at junior secondary school must be taught and learnt using the right strategies and methods. The pertinent issue is what is the best or the ideal method that can be adopted to guarantee effective teaching and learning of computer science in our Junior Secondary Schools?

Purpose of the study

1. To examine the attitude of students towards the learning of computer science at junior secondary School levels in Calabar Municipality
2. To identify the most suitable teaching methods between; Lecturing, Student-centered and Inquiry-Based that can be used for the teaching of computer science among Secondary Schools in Calabar Municipality.

Significance of the study

The study is significant in so many ways as it will among other things help in:

1. Assist learners or students while learning the subject by exposing them on the best learning method towards computer science.
2. Make value for schools on the need to regularly send their computer science teachers on training and to exposed them to various methods of teaching

3. The study would lead to the discovering of teachers' problems in teaching computer science and allow them identify their own ways of overcoming these problems.

Research Questions

For the purpose of this research, the following research questions have been raised:

1. To what extent doesTeacher's attitude towards computer science influence the academic performance of students in computer science?
2. Which method teaching method is best for the teaching and learning of computer science in JuniorSecondary Schools?
3. To what extent does learners' attitude towards computer science influence their academic performance in schools?

Hypotheses

The following hypothesis shall guide the research of this kind:

1. Teachers' computer literacy does not significantly influence academic performance of students' in Calabar Municipality.
2. Methods of teaching and learning computer science does not significantly influence students' academic performance
3. Learner's academic performance is not significantly influenced by their attitude towards computer science.

Review of related literature.

Literature was reviewed around the following sub headings:

Methods of teaching and learners' academic achievements: The use of various teaching methods over the years has being responsible to the poor academic performance of student especially those in junior secondary school level, and this has affected and has continued to affect the future of the younger generations adversely, Chang (2002). The methods and approaches have relative effectiveness on different individuals and level. It is therefore necessary for any teacher to choose the best method or approach and also the ones that will best suit his class at a particular time. A good teacher should equally understand different methods of teaching and when to apply them so as to achieve his/her objectives, and also understand the intelligent quotient (IQ) level of his/her class, age, and choice of teaching aids, etc.

Hake (1998) further asserts that a teacher who understands and uses only one or two methods of teaching will find it difficult if not impossible to achieve his/her objectives, because the purpose of teaching is to impart the worthwhile knowledge and skills to the learners by the teacher, and ways of which the teacher is expected to achieve his stated objectives is by designing good lesson note from the scheme of work and employing the required teaching methods enable him to deliver his/her lesson effectively.According to Adunala (2011), teaching is a continuous process that involves bringing about desirable changes in learners through use of appropriate methods. The author emphasized that in order to bring desirable changes in students, teaching methods used by educators should be best for the subject matter. The author maintained that teaching methods work effectively mainly if they suit learners' needs since every learner interprets and responds to questions in a unique way. Alignment

of teaching methods with students' needs and preferred learning influence students' academic attainments.

The Teacher-Centred (Lecturing) Method: Under this method, students simply obtain information from the teacher without building their engagement level with the subject being taught (Chang, 2010). The approach is least practical, more theoretical and memorizing. It does not apply activity based learning to encourage students to learn real life problems based on applied knowledge. Since the teacher controls the transmission and sharing of knowledge, the lecturer may attempt to maximize the delivery of information while minimizing time and effort. As a result, both interest and understanding of students may get lost. To address such shortfalls and in line with current realities, teaching should not merely focus on dispensing rules, definitions and procedures for students to memorize, but should also actively engage students as primary participants. The lecture method of instruction belongs to the autocratic class and is based essentially on cognitive development of the child with the presentation of contents as its main objective. Teachers under this group are more active than the passive learners. He plans and controls the entire teaching and learning processes

The Student-Centred/Democratic Method**:** With the advent of discovery learning, many scholars today widely adopt the student-centered methods to enhance active learning (Greitzer, 2002). Most teachers today apply the student centered approach to promote interest, analytical research, critical thinking and enjoyment among students and computer science being

a practical-oriented subject that involves so much of practical teaching and learning will need nothing less than this method of instruction for the interest of the students. This teaching method does not centralize the flow of knowledge from the teacher to the students. The approach also motivates goal-orientated behaviour among students; hence the method is very effective in improving student achievement.While teachers are the authority figure in the teacher- centered model, teachers and students play an equally active role in the learning process. The teacher's primary role is to coach and facilitate student learning and overall comprehension of material.

Student learning is measured through both formal and informal forms of assessment, including group projects, student portfolios, and class participation. Teaching and assessment are connected; student learning is continuously measured during teacher instruction. Student-centred learning puts students' interests first, acknowledging student voice as central to the learning experience. In a student-centered learning space, students choose what they will learn, how they will learn, and how they will assess their own learning. Hannah &Hannafin (2010) This is in contrast to the lecturing method of learning education, also dubbed "teacher-centered learning", which situates the teacher as the primarily "active" role while students take a more "passive", receptive role. In a teacher-centered classroom, teachers choose what the students will learn, how the students will learn, and how the students will be assessed on their learning. In contrast, student-centered learning requires students to be active, responsible participants in their own

learning and with their own pace of learning, Eli (2013).

Usage of the term "student-centered learning" may also simply refer to educational mind-sets or instructional methods that recognize individual differences in learners. Student-Centered Learning (2014). In this sense, student-centered learning emphasizes each student's interests, abilities, and learning styles, placing the teacher as a facilitator of learning for individuals rather than for the class as a whole.A research university in Hong Kong sought to promote student-centered learning across the entire university by employing the following methods Kember (2009). As cited by wikipedia.org enumerated the qualities of a student or learner-centered teaching and learning situation to include the following:

1. Analysis of good practice by award-winning teachers, in all faculties, to show how they made use of active forms of student learning.

2. Subsequent use of the analysis to promote wider use of good practice.

3. A compulsory teacher training course for new junior teachers, which encouraged student-centered learning.

4. Projects funded through teaching development grants, of which 16 were concerned with the introduction of active learning experiences.

5. A program-level quality enhancement initiative which utilized a student survey to identify strengths and potential areas for improvement.

6. Development of a model of a broadly based teaching and learning environment influencing the development of generic capabilities to provide evidence of the need for an interactive learning environment.

7. The introduction of program reviews as a quality assurance measure.

The Inquiry-based learning: Inquiry can be conducted through experiential learning because inquiry values the same concepts, which include engaging with the content/material in questioning, as well as investigating and collaborating to make meaning. Vygotsky approached constructivism as learning from an experience that is influenced by society and the facilitator. The meaning constructed from an experience can be concluded as an individual or within a group.Inquiry-based learning is primarily a pedagogical method, developed during the discovery learning movement of the 1960s as a response to traditional forms of instruction – where people were required to memorize information from instructional materials.John Dewey, a well-known philosopher of education at the beginning of the 20th century, was the first to criticize the fact that science education was not taught in a way to develop young scientific thinkers.

Dewey proposed that science should be taught as a process and way of thinking – not as a subject with facts to be memorized. While Dewey was the first to draw attention to this issue, much of the reform within science education followed the lifelong work and efforts of Joseph Schwab. Joseph Schwab was an educator who proposed that science did not need to be a process for identifying stable truths about the world that we live in, but rather science could be a flexible and multi-directional inquiry driven process of thinking and learning. Schwab believed that science in the classroom should more

closely reflect the work of practicing scientists. Schwab developed three levels of open inquiry that align with the breakdown of inquiry processes that we see today.As reported by Harlen& Allende (2006), Inquiry method of teaching sciences in general and computer in particular can help to improve students' understanding, participation and enjoyment in relation to scientific activities and contributes to improving general education' across the globe. The biggest challenge as opined by the authors facing teachers today however is how to utilize this method of teaching to achieve the above objectives thereby making the subject less boring to all categories of learners.

Procedures for Data Analysis

This chapter describes the method and procedures used in the study; such as a research design, study area population, sample,sampling techniques, instrumentation, and validity of the instrument reliability of instrument data collection.

Research Design

The design for this study is descriptive survey design for it is concerned with the gathering of respondents' perception on the analysis of various methods/strategies used by schools to teach and learn computer science in junior secondary schools in Cross River State.

The Research Area

The study area is Calabar municipality one of the local government councils in Cross River State. It is the seat of the state capital with several schools (public and private) secondary schools inCross River State. Calabar Municipality also host such higher institutions like the University of Calabar and College of Health Technology as well as the Famous Ika-IkaOquoA.K.A Marianmarket. It has several cultural, tourism and sport centres, such the Transcorp Hotel, the Governor's office, the U.J. Esuene Stadium and the Central Bank of Nigeria, the Tinapa Business Resort among others.Calabar Municipality have a total of 15 (fifteen) secondary schools 924 teachers and 15,841 students with morethan 50% constituting the junior secondary section. (Secondary School Management Board, CRS, 2014).

Population of the study

The population shall comprise of Public Secondary Schools in Calabar, Municipality.

Sampling technique

The stratified random sampling technique was adopted for the study. The schools, teachers and students were chosen on the basis of Urban and Rural schools, male and female teachers and male and female students. It was considered that 10 schools were representative enough of the population under study.

Sample

10 secondary schools were chosen for the sample.From the above schools, three hundred and fifty (350) Teachers were chosen for the study, representing fifteen (15) teachers per school.

Validity/Reliability of Instrument

The questionnaire instrument was validated by research experts in test and measurement instrument validation refers to the degree to which an instrument measures what it is intended to measure. Face validity

only was employed for the study, content validityon the other hand refers to the way a test or instrument appears to take care of the relevant content of the subject (Cronbach, 1970).

Reliability of theInstrument

Reliability is the consistency with which an instrument or a test measures what it is supposed to measure. To establish the reliability of the instruments, atrial test was administered on some randomly selected teachers in selected schools within Calabar

Municipality. The trial test involved 20 teachers, 10 in urban schools and 10 in rural schools within the Calabar Municipality Secondary Schools, the test retest method of estimation was done. In this case the same group of respondents were given the instrument to complete. After an interval of two weeks the same group of 20 respondents was given the same questionnaire. The test re-test reliability of almost all the major variables were very high thus, the indices were considered high enough for the study as indicated in the table 2 below:

Table 1
The reliability of the variables

Variables	No. of items	Test	X	SD	rxx
Teacher.-centred method	5	1st 2nd	29.40 29.95	5.39 5.44	98*
Student- centred method	5	1st 2nd	29.38 31.90	9.3 9.06	73*
Teacher-Student method	5	1st 2nd	43.31 42.94	13.86 13.28	87*
Technological Method	5	1st 2nd	34.09 32.5	11.13 11.29	81*

Test–Retest Reliability Estimated of Research Variables

The independent variables in the study are four. The variables are; teachers' computer literacy level, learners' attitude towards computer science, instructional materials and methods of teaching. The dependent variable

on other hand is the academic achievements of learners in computer science. The mean and standard deviations of the variables are prepared as shown in the table below:

Table 2
Means and Standard deviations of research variables

Variables	No. of items	X	SD
Teacher.-centred method	5	1.45	0.56
Student- centred method	5	2.21	0.83
Inquiry-Based Method	5	20.57	2.41

Hypothesis by hypothesis analysis of data

Hypothesis 1

Teachers' computer literacy does not significantly influence learners' academic achievement. To test this hypothesis, the One Way Analysis of variance (ANOVA) was used. Teachers' computer literacy was classified into Literate, Semi-literate and Not literate

The result was tested at .05 level of significance. The summary of result is presented in the table below:

Table 3
One way analysis of variance of the influence of teachers' computer literacy and learners' academic achievement

Source of Variation	SS	Df	MS	f-ratio
Between Groups	25.98	2	38.654	.589
Within Groups	3908.837	308	14.695	
TOTAL	3934.800	310	269	

Not significant at .05 level, critical F = 2.65 and df = 2, and 308.

Discussion

The result in the table above reveals that the calculated F-value of 0.589 is less than the critical F-value of 2.65 at .05 level of significance with 2 and 308 degree of freedom. With this result, the null hypothesis which states that teacher' computer literacy is not significantly related to learners' academic achievements is uphold and the alternate hypothesis is rejected.This hypothesis is not significant at 0.5 alpha level of significance. The result of this hypothesis is highly queried as far as the views from other scholars are concerned. It suggests that teachers' computer literacy level cannot account for students' academic achievements in the subject. This is because other variables such as interest, attitude and academic background may equally be of significance to the variability in academic gains of the learners. According to Seidmen (1996), most of the trained teachers in computer science find it reluctant to go to classdue likely to their limited experience with the software available or due to their uneasiness on changing their habit and techniques. The qualification of the majority of the teachers are far from being satisfactory due largely to lack of exposure to the school curriculum that does not cater for ICT training (Bukaliya&Mubika 2011).

Teachers have poor practical skills in ICT usage since majority of them cannot use the basic computer application for the delivery of their lesson and indications are that teachers lack the necessary skills and knowledge of computers in basic software usage. The opinion of this hypothesis is however contradicted by views from other scholars like Seidman (1996). The author believed that the quality of teaching and learning in any educational system including junior secondary schools is partly a responsibility of teacher's computer literacy.   In another opinion Manpower development is said to be a reflection of the need to update teachers' knowledge in the world of

fast moving technology communication (Bukaliya&Mubika 2011). Training all teachers on the educational use of computer, the authors maintained would be of special importance when considering integrating computer science into the regular curriculum. Teachers need to know how to use the computer first before they can integrate them into the school system including the junior secondary school (Seidmen, 1996; Madden 1989). Minte (1997) maintained that teachers are unprepared to use computers in their classroom and they lack support and educational guidance.

Hypothesis 2

Students' academic performance is not significantly influenced by the method of teaching computer science in junior secondary

This hypothesis was tested at .05 level of significance using analysis of variance (ANOVA). Instructional materials were grouped into three categories to include Visuals, the Audio visuals and the manipulative. The summary of result is presented in the table below:

Table 4

One way analysis of variance of the influence of teacher's use of instructional materials and learners' academic achievements

Source of Variation	SS	Df	MS	F-ratio
Between groups	68.609	2	22.870	
Within groups	3866.191	308	14.535	1.573
TOTAL	3934.800	310		

Not significant at .05 level, critical F = 2.65 and df = 2, 308

Discussion:

The result presented in the above table indicatesa no significant influence of instructional materials on learners' academic achievements in computer science the Null hypothesis is hereby retain and the alternate rejected. This was so because the calculated F-value of 1.573 is less than the critical F-value of 2.65 at .05 levels of significances, with 2 and 308 degrees of freedom. This implies that teachers' use of instructional materials has no significant influence on the academic performance of learners in computer science within the area of study.Instructional materials and learners academic achievements: The result from

this hypothesis is that at 95% of certainty, the use of instructional material does not really matter in guaranteeing high academic successes of learners in computer science in the junior secondary schools. These views are however centrally to the opinion of Ginsberg and McCormack (1998) who have asserted that deploying adequate instructional materials in terms of hardware and software such as computers, printers, projectors and digital cameras could go a long way in determining the way computer science can be taught to the junior secondary school students. Additionally, Prestonet, etal (2000) added that most school have no

intranet and internet that would guarantee the teaching and learning of computer science in junior secondary school. Tanner (1980) is of the opinion that the current curriculum structure as the junior secondary does not support practical implementation of impacting as well as the learning of computer science in junior secondary schools as there is a total absence of basic functional instructional materials to aid both learning and teaching.

Hypothesis 3

Learners' attitude towards computer science has no significant influence on their academic achievements.

This hypothesis was tested at .05 level of significanceusing the Independent t-test statistic to compute the means for significant difference. Learner's attitude was classified into positive and negative. The mean and standard deviation of was computed for these two groups of learners. The result of the analysis is presented in the table below:

Table 5

Independent t-test analysis of the influence of learner's attitude towards computer science

GENDER	n	X	SD	T-value
Male	160	29.52	3.72	1.929
Female	150	29.25	3.96	

Not significant at .05 level, calculated t = 0.588df = 308, Critical t = 2.228

Discussion:

The analysis of the data presented in table 4.4 above showed that the calculated t – value of 1.929 was less than the critical t – value of 2.228 at .05 level of significance with 308 degree of freedom. Given this result, the null hypothesis is rejected while the alternate hypothesis is retained. This implies that learners' attitude towards the study of computer science is very significant among junior secondary schools Calabar Municipality of Cross River State. The result from above study posits that learners' attitude does not matter as far as their academic gains are concerned. These views were in collaborated with the report of a study done by, Tetenbaum&Mulkeen(1984). They revealed that majority of the teachers and possibly learners do not believe that computer have a useful educational objective

and that there were not essential and fundamental to their teaching and classrooms activities, hence they had a negative attitude towards computer science.

To confirm the result of the above hypothesis, Madden (1989) revealed in his study that most learners and teachers are usually reluctant to embrace computer science due to anxiety, phobia in handling equipment, sense of loss control over the teaching and learning situation. Most teachers for instance feel that computer in their lobs is very dehumanizing, isolating prone to error and possibly as a violation of the right to privacy. Tandem Griswold (1984), Steven (1984) and Stephenson and De Landshere (1985) on the other hand expressed a concern that computer literate individuals will reap greater benefits than their counterparts who lack the positive

knowledge and positive towards it studies. Again, learners with positive attitude would engage better in group discussion and practical as well as teamwork within or between classes to collaborate what is taught or learned in other classes.

Summary of the study

The study was concerned with empirical investigation of the possible strategies towards the teaching and learning of computer science in junior secondary schools in Calabar Municipality. The independent variables in the study included the teachers' computer literacy level, availability of instructional materials, learners' attitude towards learning computer science at the junior secondary level and the various methods of teaching computer science at this level of learning. The dependent variable on the other hand was leaners' academic achievements. From the questionnaire instrument administered to 320 students, opinions of the respondents were reduced into scores and subsequently interpreted using suitable statistical tools. Three (3) research purposes were proposed, three (3) research questions formulated and three hypotheses developed to guide the study.

Hypotheses 1 and 2 were tested using the One Way Analysis of Variance while the 3rd hypothesis was analysed with the Independent t- test. Each hypothesis was tested for levels of significance at 0.05 levels with different degrees of freedom. From the results obtained, all the Null hypotheses (Ho$_s$) were retained and the alternate rejected. The following results were reported of each hypothesis:

- Teachers'' computer literacy level alone does not guarantee learners' academic achievements
- Instructional materials availability is of great importance, but they must be properly utilize and in the right way. The audio, the audio visual and the manipulative must be jointly used effectively lead learners to gain maximally from their academics.
- Learners' attitude towards computer science at the junior secondary level may not really constitute a hindrance to their academic achievements because other variables like interest, socio-economic background and parental care as well as mental alertness and stability could constitute other bottlenecks

Conclusion

In choosing the best strategy towards the teaching and learning of computer science at the junior secondary level of education, a holistic approach must be adopted, as there is no one methodbut eclectic method, which is a mixture of methods that should be used in computer teaching. Teachers should be computer literate, instructional materials must be adequately provided, learners must show a positive attitude towards computer science and a combination of teaching methods being adopted.

References:

Adunala, O. (2011). The impact of teachers' teaching methods on the academic performance of Primary school pupils in Ijebu-Ode Local Government Area of Ogun State. Ego Booster Books, Ogun State.

Ajayi, G. O. (2003). National Information Technology Development Agency and

Information and Communication technologies in Nigeria. Retrieved from: httpejds.orgs/ meeting/2003.ictp/papers/ajayi.pdf

Ayoola, L. M. (1994). Relevance of schools management capacity on the instruction of an innovation. A case study of secondary schools computer education in Nigeria. Journal of Nigeria Association for Education Media and technology:4(1):503-510

Chang, W. (2002). Interactive teaching approach in Year one University Physics in Taiwan. Implementation and Evaluation. Asia-Pacific Forum on science learning and teaching 3(9): 206-225

Enuku, U. A. &Enuku, O. (2000). Breaking down the walls: computer application in correctional prison education. Journal of education studies 12(13): 64-71

Hake, R.R. (1998). Interactive engagement versus traditional methods. A six thousand student survey of mechanic test data for introducing Physics courses AM.J. Phy. 66-74

Hawkridge, D.(1987). Experience in using computer for learning. In E. Scanion& T. O'shea(eds.) Educational computing. New York: John Wiley & Sons

Kaku, F. A. (2005). The use of internet by secondary school teachers in the rural areas of Delta state. The case of Uda Local Government Area of Abraka, Delta State University. Unpublished S.sc. LIS Project

Merritt, S. et al (1991). ACM Model high school computer science curriculum: Draft report of the task force on high school curriculum of the ACM pre-college committee.

Ndiku, L. (2003). The problem encountered by school personnel in the implementation of computer use in secondary in UasinGishu District.Unpublished Thesis Moi University, Eidiret

Ogbazi, N. J. (1989). Strategies for improving the teaching and learning of basic technology in junior secondary schools in Ehiamefaloretal (Eds). Nigerian Educational Research Association

Olaniya, D. A. &Ojo, L. B. (2008). Challenges against implementation of basic technology curriculum in Nigeria Junior secondary schools. European Journal of Science Research: 24(1):112-118

Oni, C. S. (2007). Developing vocational education through computer literacy in Nigeria Junior secondary schools. Retrieved from: http//www.ncsu.edu/meridian/simmer/ oni/index.htm on November 25, 2014

Robinson, L. K. (2003). Learning with technology using computer as cognitive tool. In Omotoro, R. O. (2000). The role of Information Technology in the making of an information society. The place of African. Niger Biblios, 13(3): 6-10

Uwaifo, V. O. and Edigin, J. E. O. (2011). Evaluating Basic teaching instruction in Nigeria secondary schools. JORIND 9(1). Retrieved from http//www.tarnscampus.org/ journals.agol.ifo/jorind

Yusuf, M.O. (1998). A study of the dimension of teachers' attitude towards computer in Nigeria secondary schools. Journal of Education 2(5): 230-236

Yusuf, M.O. (1998). An investigation into teachers' competence in implementing computer education in Nigeria secondary schools. Journal of science teaching and learning. 3(1&2) 104-120

Zakaria, E. Chin, C. L. &Daud, Y. (2010). The effect of cooperative learning on student Mathematics achievements and attitude towards Mathematics. Journal of Social Science. 6(2): 272-275.

ART AND ECONOMIC DEVELOPMENT IN THE PRESENT DAY NIGERIA

Sanda, Francis Ademola*

Abstract

The decline in Nigeria economy compared to other emerging African states has been traced to its overdependence on a monotonous source of development. In spite of the huge amount of foreign exchange derived mainly from oil and gas resources, the challenge of actualizing an improved and sustained economy heightens as the downturn in oil and gas sector continues. The potential role of art in the present day Nigeria economy thus calls for a critical examination as the nation's economy needs to be diversified from crude oil source. This review analyzes several indices on the recent boom in the visual art sector and its implication for the present day Nigeria economy.

Introduction

The potentiality of art in determining economic development in human societies has been a subject of academic enquiry. This is based on the belief that the arts constitute important human phenomenon which if harnessed can leverage unemployment rate in the contemporary society, and indeed, a substitute for the encumbered industrial economy. Thomasian (2001) sheared the same position that "The arts and cultural industries provide jobs, attract investments, and stimulate local economies through tourism, consumer purchases, and tax revenue, it is also believed to be viable in preparing workers to participate in the contemporary workforce. Tomasian also finds that the yearly economic growth of 17.6 percent is significantly influenced by contributions from art and cultural sector in Massachusetts. The potential role of art in the present day Nigeria economy calls for a critical examination as the nation's economy needs to be diversified from the monotonous crude oil source. This review analyzes several indices on the potentiality of art in the present day Nigeria economy.

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Trends in Nigerian economy: an overview

Economic development of a nation represents the progression in fiscal and resource control and management at both micro and macro level. Economic development is a means of measuring the growth of a nation in terms of the rate of change in national output or income in a given period. According to Aigbokhan (1995), Economic growth means an increase in the average rate of output produce per person usually measured on a per annum. It can also be said to mean an increase in gross domestic product and other factors of national income. Simply put, total sum of goods and services, income and outcome. Economic growth can either be positive or negative. When referred to as negative, it connotes a recession or shrinkage in the pace of development. It can on the other hand be positive, in which case there is a boost in the overall output resulting from the increased gross domestic product. Ulla and Rauf (2013)

Nigeria economic development has been discovered to be dwindling compared to other emerging economy.The National Bureau of Statistics in 2011 released a breathtaking unemployment statistics that shows a persistent increase from 23.90 in 2011 to 21.10, (National Bureau of Statistics 2011). Mohammed and Eyiokioya (2015) connectthe dwindling economic performance to the aftermath of independence in 1960 with increased incidences of poverty, manifesting in various forms aslow health care,illiteracy, weak democratic and political instability, low quality of the natural environment, heightened incidence of crime and violence. In spite of the huge amount of foreign exchange derived mainly from oil and gas

resources and the several macroeconomic and monetary policies i.emonetary and fiscal policy, export promotion strategy, imports substitution strategy,austerity measure,Nigeria grapples with the challenges of actualizing an improved and sustained economy as the continual decline in the oil sector also threatens the economy growth. Kale (2015). This is confirmed in 2015National Bureau of Statistics report which reveals negative dimension growth in the oil sector from 8.15%, showing a further decline of 1.55% points from the rate of -6.60% recorded in the first quarters of 2014. This complexities no doubt is consequential upon the country'soverdependence on crude oil export. Hence theneeds to diversify Nigerian economy from the monotonic crude oil source and consider other emerging sectors like the arts.

Visual arts perspective

Art can be referred to as creative expression of human thought, using variety of artisticmedia in a way that appeals to the beholders' aesthetic sensibility. Arts, weather tangible or intangible expresses unspoken words. Tangible arts likepainting, sculpture, ceramics among others or intangible oral traditions like chants, eulogy corpus, and other forms of literatures constitute the arts.Art in the context of this paper is narrowed down to all forms of visual arts. From primitive to the contemporary, art has always served specific social functions than pecuniary. In spite of the importance of art as a human phenomenon, its economic value has from time been consigned to obscurity. Oladokun (2015) justifies this assertion by opining that the concept of art for art sake is alien to the African artist whose creations

are taken from, and devoted to the soul of the community. This implies that economic function of art until recently has barely been harnessed. It becomes important therefore to direct scholarly attention to the economic function of art. If maximized can leverage the deficiency in the revenue generation system that is stereotypic

Visual Art Auction and Exhibition in Nigerian Economy

The contribution of the arts to Gross Domestic Product as a yardstick for measuring economic development provides us with proof that art plays significant roles in human development.Looking particularly at its influence in the state's macro economy, the 2015 first quarter (QI) of Nigerian GDP figure places the economic value of art at 176,993.92. This shows an unprecedented growth from the 2014 Q1 when it was belled at 43,653.15. Theprogression represents a significant position of art in the economy and Oyebode's 2014 forecast that some underestimated sectors would to turn out with impressive contribution. In the same vein, Aluko and Ayobode(2006) conducted a comparative analysis of Nigeria and other African countries. They found that Nigeria is currently one of the highest increases in nominal value of GDP in Africa with an increase of about 82.22 percent ahead of other developing economies. This he attributed to occasions of newly sprouting sectors including arts entertainment and recreation. www.aluko-oyebode.com.

This development perhaps has a background in OmoobaYemisi'saccount of the collection and patronage of art in Nigeria during 1987 and 1993. According to this account, many patrons and collectors dominated the art market scene following the emergence of several "Nigerian-owned Merchant Banks, Credit and Finance Companies, and Bureaux du [sic] Change during which many private companies sold off their foreign exchange quota allocations, makingcollection of art became a statutory activity owing to the phenomenal profit. (Shillon 2001). Thisalso brought about a major shift from the domination of white expatriate to indigenous consumption of art works.

Through manyprivate collections, heightened connoisseurship, increase in exhibition and in particular, the internationally known secondary art market system called art auction, Nigerian visual arts sector showed its potency in pulling the economic weight of Nigeria.Onuzunike's(2015) critical analysis of Nigeria arts auction is also a prove of growth and the appreciable impact art has on Nigerian economy. At the first attempt at Nimbus Art Gallery, Nigerian art auction price recorded N22 million, a sum according to Onozulikethat was very significant in the Nigerian economic context at that time. Nigerian art thereafter recorded a proliferation of auctions in Nigeria as other such platforms as Arthouse, Terra Kulture art gallery, Nimbus Gallery, Mydrim Gallery, Nike gallery among others continue explore the investment value of the contemporary art in Nigeria through auctions.I shall present a review of Onozoluke's examination and analysis of price performance in various auctions in Nigerian Galleries with a view to determining the economic weight art is capable of pulling and the way of realizing the reality.

Table 1. Arthouse Contemporary auction results summary.

	Auction date	Total hammer price plus premium	No. of lots sold	Highest priced artists
1	April 7, 2008	N74,845,000.00	89	Bruce Onobrakpeya [N10,120,000.00]
2	Nov. 19, 2008	N85,182,000.00	84	Yusuf Grillo [N8,800,000.00]
3	April 6, 2009	N66,737,000.00	69	Ben Enwonwu [N4,500,000.00]
4	March 1, 2010	N67,320,500.00	82	Simon Okeke [N4,200,000.00]
5	Nov. 22, 2010	N83,541,000.00	93	Demas Nwoko [N9,900,000.00]
6	May 9, 2011	N79,109,000.00	82	Ben Enwonwu [8,800,000.00]
7	Nov. 21, 2011	N114,447,000.00	86	Ben Enwonwu [N30,800,000.00]
8	May 7, 2012	N98,563,500.00	95	Demas Nwoko [7,700,000.00]
9	Nov. 26, 2012	N90,963,500.00	81	El Anatsui [N12,540,000.00]
10	May 13, 2013	N126,818,500.00	102	El Anatsui [13,200,000.00]
11	Nov. 18, 2013	N112,769,000.00	76	Ben Enwonwu [N17,050,000.00]
12	May 5, 2014	N84,924,000.00	115	El Anatsui [N12,580,000.00]
13	Nov. 3, 2014	N99,879,000.00	114	El Anatsui [N8,580,000.00]

Source: Arthouse Contemporary Limited, Lagos.

Table 2. Terra Kulture/Nimbus Gallery and Terra Kulture/Mydrim auction results summary.

	Auction date	Total hammer price without premium	No. of lots sold	Highest priced artists
1	Dec. 2008	N10,230,000.00	50	Ben Osawe [N2,000,000.00]
2	April 2010	N29,000,000.00	72	El Anatsui [N3,800,000.00]
3	May 2011	N51,700,000.00	56	Ben Enwonwu [N13,500,000.00]
4	Nov. 2011	N27,605,000.00	51	Bruce Onobrakpeya [N4,000,000.00]
5	April 2012	N38,125,000.00	59	Ben Enwonwu [N4,600,000.00]
6	April 2013	N47,400,000.00	60	Kolade Oshinowo [N3,900,000.00]
7	April 2014	N37,650,000.00	40	Bruce Onobrakpeya [N3,650,000.00]

Source: Terra Kulture Gallery, Lagos.

The Nimbus Art Gallery, run by ChikeNwagbogu, takes pride of place as the organizer of the first art auction in Nigeria. Entitled and held in 1999, at the turn of the millennium, The above analysis further reveals an exponential financial progress in the Nigerian secondary art market.

From the analysis of auction result adapted above,Onuzulikecarefully traces progression in the financial worth of Nigerian contemporary art from 1999 "Before the generatedN22 millionto over N120 million subsequently recorded between 2008 and 2014 when Arthouse Contemporary showcase artists like Ben Enwowu, Bruce Onobrakpeya, El Anatsui, Demas Nwoko, Yusuf Grillo, Bruce Onobrakpeya, Ben Osawe, Simon Okeke,KoladeOshinowo among others. The exhibition was said to have recorded hammer prices ranging from 30.8 million, N74.845 million, N8 million, N12 million, N13 million and so. Hence

his submission that"Nigerian art auctions have provided ladders of professional and economic progress in the country's visual art sector by raising the level of art appreciation/ awareness in the country and energizing the local and international art markets" Onuzulike (2015). There are three significant contributions that justify this assertion, that:

- Art auctions so far conducted in Nigeria have largely succeeded in financial terms, and, on this basis, they have stoke much needed awareness of the investment potentials of art to the Nigerian public, and introduced new collectors into the art scene.

- The effect of the growing art market in Nigeria has also enhanced the respect for art in the country, gradually turning the visual art into a rewarding and prestigious profession in the minds of parents, aspiring artists and the society in general.

- Beyond the local scene, they have also attracted the attention of the global art market, which has recently turned its gaze to the modern and con- temporary art of Nigeria, eager to exploit the relatively cheap prices of Nigerian artworks.

From the foregoing, the increase in art competitions, workshops and exhibitions has helped build robust economy by promoting talents in the visual arts. This implies empowerment of Nigerian youth particularly in the face of heightened economic recession and the resultant high poverty rate. In the developed economy like the United State, it was recorded that in 2013, arts and cultural production made up nearly half of the entire U.S. copyright☐intensive creative economy

($435B of $887B). Although Nigerian art sector is yet to attain this feat, but the recent placement of art in 2015 GDP signals positive proportion for the arts in few years to come

Culture and Tourism: Economic Value

The recognition that cultural resources are of great economic assets is not new in the western world as well as the developing economy like Nigeria. As an economy-driven entity, tourism facilitates transportation, accommodation and catering of passenger which generate income internally, particularly when culture is involved. Cultural tourism or culture tourism is that subset of tourism that is based on the culture of people of a country, region and by extension, continent, weather in the rural and urban areas, showcasing historic, ancient and modern cities and their cultural facilities. Cultural tourism has been used to promote economic development. NOU(2006)

It was reported for instance in that art and culture sector infused $3.9 billion into North Carolina's economy in 2006 through the wages and income of workers employed by creative enterprises. ???? As the global economy becomes increasingly competitive, countries with highly valued cultural heritage explore these assets to outpace others who grapple with the complexities of twenty-first century industrial economy. Emerging economies like China, Korea and Ireland is a case in point.

Imoukhuede (1987) recalls that before the colonial era, culture-based activities and goods produced indigenously made up over 50 percent of Nigeria economy. In the same vein, Apter (2005:54) traces the

prominence of Nigerian arts and heritage to the 1977 hosting of Festival of Arts and Culture (FESTAC) which positions Nigeria for unequivocal leadership in the black continents by footing 99% of FESTAC's expenses.   Chidozie, &Obubo 2014; Ibeanus' (2008) empirical study on the famous Eyo Festival in Lagos also revealed that the festivals has succeeded in contributing to the overall income base of the economy of Nigeria by attracting foreign investment to the state. The function of art and culture is clearly outlined in Hayter, Pierce, and Casey (2009)that:

> The arts and cultural industries including (advertising, architecture, the art and antiques market, crafts, design, fashion, film, digital media, television, radio, music, software and computer games, the performing arts, publishing, graphic arts, and cultural tourism) provide jobs, attract investments, and stimulate local economies through tourism, consumer purchases, and tax revenue. Perhaps more significantly, they also prepare workers to participate in the contemporary workforce, create communities with high appeal to residents, businesses, and tourists, and contribute to the economic success of other sectors.

Art and cultural events also provide a boost for other businesses when showcased as they attract audience with their diverse basic economic need (dining in restaurants, lodging in hotels, and purchasing gifts and services in the community), thereby contributing to local economies. Tourism is described as a continuous and unrelenting activity which transforms the abstract concept of culture into a profitable venture that produces revenue for a people and its government. Also, the consumers of tourism are not only those who come from without, but also within the given environment. According to the NTWG Report (2009),

> Tourism is the "active process of harvesting profit from culture by converting the raw ingredients of life into a money- making enterprise through the conscious and deliberate development of culture into products for sale and consumption. It involves the active development and cultivation of inbound consumers as well within-bound consumers" (NTWG Report, 2009: 10).

Job creation opportunity of tourism extends to the skilled, unskilled, women and other economically disadvantaged minority. From the fore going, it is evident that when cultural resources are maximized through tourism, not only does it create financial access; it also has the capacity to enhance and sustain developments in all ramifications.

Contribution to scholarship

The growing awareness of art in Nigeria has not only been rewarding in pecuniary terms,its contributions to scholarship cannot be overemphasized. The recent increase in the appreciation of publicationsandscholarly researchinto Nigerian art has also leveraged education and as such, the economy.There is an increase in research in the funding of arts through grants, and scholarship. The contribution of some governmentagencies; independent bodies as well as renowned art foundation in this regard is significant. Government agencies like Lagos State Art Empowerment Centre and foundation

likeOmoobaYemisiShylon Art Foundation (Oyasaf) have particularly been reported to be involved in funding academic research in art.Tobenna(2014) reports that art scholars from the US, Austria, Switzerland, and South Africa have been awarded OYASAF Fellowship Grant since 2010. Also recently, OYASAF in collaboration with Chief Rasheed Gbadamosi'sGrilloPavilion made a research grant available for scholars to research and resolve conflicting issues on "the formation, membership and program of the Zaria Art Society". In the same vein, IyaseOdozi Art foundation,another renowned Lagos-basedart empowerment centre has contributed immensely to pedagogical issues in visual art. This is done through its annual art teachers' workshop and conferences. The conference has brought secondary schools' art teachers across Nigeria together to discuss common affecting them. Thus, Nigerian art teachers'voices aired. For instance, public misconception of art as less important in the annals of other subject areas and unhealthy comparism of art teachers with other subject area teachers has severally been addressed.

Conclusion

It is apparent form the several review the need to intensify advocacy for art particularly in the face economic downturn resulting from the nations' overdependence on crude oil export. We have articulated views that substantiate the economic potential of the art. We have considered how the arts have leveraged human capital and cultural resources to generate economic vitality. Particular attention has been paid to tourism, crafts, and cultural attractions as well as public consumption of art and the resultant heightened art market. It shows the enormous contribution of visual art sector to the economy. The arts sector including cultural tourism has also been reviewed to contribute significantly to total GDP of Nigeria. The implication of overdependence on oil for economic development has been discovered to be the source of the scourging poverty of the nation and what Ibeanu (2008) referred to as the paradox of affliction in the face of oil wealth. To this end we recommend that more rooms be created for art in the schools' curriculum to encourage early integration of pupils. Proper funding should be made available for the art sector to thrive. All stakeholders, government owned and private art galleries and independent art connoisseurs should continue to embark on periodic workshop, exhibition and public awareness programs targeted at further sensitizing the public on the economic importance of art in the society.

Reference

Aigbokan, B.E. (1995). Macroeconomics: Theory and Evidence, Benin City Idenijies Publishers

Aloko and Oyebode, How Sustainable is the Effect of Nigeria's GDP Rebasing. Retrieved from www.aluko-oyebode.com

Apter, A. (2005). The Pan-African Nation: Oil and the Spectacle of Culture in Nigeria. Chicago, IL: University of Chicago Press

Chidozie&Obubo (2014). The Role of Cultural Heritage and Tourism in Nation Building: A Study of Lagos Eyo Festival. Global Journal of Human-Social Science: Volume 14 Issue 2 Version 1.0, Publisher: Global Journals Inc. (USA)

Hayter, Pierce, and Casey (2009) Arts & the Economy: Using Arts and Culture to Stimulate State Economic Development. A publication of the National Governors Association. Washington D.C

Ibeanu, O. (2008) "Affluence and Affliction: The Niger Delta as a Critique of Political Science in Nigeria". An Inaugural Lecture of the University of Nigeria, Nsukka (February 20).

Kale, Y. (2015). Nigerian Gross Domestic Product, Quarter one 2015, National Bureau of Statistics

Mohammed, I. and Ehikioya, L.I,(2015), Macroeconomic Determinants of Economic Growth in Nigeria: A Co-integration Approach: International Journal of Academic Research in Economics and Management Sciences

Oladokun, T and Sanda, F, (2016). Art in the Service of Religion: A study of some Ifa Carvers in Oyo. Accepted for publication at 2015 Unilag Research Conference

Onuzulike, Ozioma. Art Auctions in Nigeria: A Commentary, Journal of African Art History and Visual Culture. Retrieved from:http://www.tandfonline.com/loi/rcin20

Okwuosa, T. Art Patronage, Promotion, and Publication in Nigeria : A Focus on OmoobaYemisiAdedoyinShyllon Art Foundation (OYASAF): IOSR Journal Of Humanities And Social Science (IOSR-JHSS) Volume 19, Issue 4, Ver. V (Apr. 2014), PP 33-44 e-ISSN: 2279-0837, p-ISSN: 2279-0845

Press release: October 26, 2012 "For the First Time U.S. Bureau of Economic Analysis Will Measure Contribution

Thomasian (2001). Using art and Culture to Stimulate State economic development. NGA, Centre for Best Practices. Washington DC retrieved from

www.nga.org/centerhttp://www.americansforthearts.org/information_services/research/services/creative_in-dustries/default.asp.

Ulla, F. and Rauf, A. (2013), Impact of Macroeconomic Variables on Economic Growth: A panel Data Analysis of Selected Asian Countries GE-International Journal of Engineering Research Available online at www.gejournal.net

(http://www.americansforthearts.org/information_services/research/services/creative_in- dustiest/default.asp.)

ENHANCING ELEMENTARY EDUCATION IN NIGERIA THROUGH CLOUD COMPUTING

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Abstract

Education generally, is the transmission of knowledge from one generation to another. In the present global society, every nation strives to adopt the best delivery system to transmit knowledge for a sustainable future development.   Though, many knowledge delivery systems have been put to use, this paper sets out to examine the conventional elementary education delivery systems in Nigeria; the need for alternative ICT-based delivery system (cloud computing) in line with modern innovations in teaching and learning; and a review of cloud computing as a viable option for knolwedge delivery in elementary schools in Nigeria. Nigeria's level of readiness for the integration of this ICT-based cloud computing systems into the educational system was x-rayed. The advantages of cloud computing were highlighted, as well as the challenges inherent in the implementation of such technology. Recommendations were however made, which among others include the consolidation of basic computer skills among learners as well as the the provision of infrastracture and constant power supply in the Nigerian educational system beginning with the elementary school.

Key Words: Cloud Computing, support tool, enhancement, educational advancement, primary school and Challenges.

Introduction

Traditionally, education delivery in Nigeria has enjoyed the expensive set-up of a formal classroom with the accompanying facilities and personnel. Considering the makeup of classrooms that translates into a full-fledged school, one sees the huge financial burden it poses to governments and other stakeholders. According to O'Malley and McCraw (1999) the delivery system for higher education has been a classroom setting with a professor giving a lecture and students listening and writing notes. Interaction between the professor and students has been viewed as an essential learning element within this arrangement. As observed by Velve (2014) the traditional

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classroom model is obsolete, since it limits our access to other people, content and new learning tools. Attempts at identifying cheaper options for education delivery have resulted in mobile learning. Mobile learning is defined by Velve (2014) as any sort of learning that happens when the learner is not at a fixed, pre-determined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies. Velve further identified mobile learning to include portable devices and related technologies such as hand-held computers, MP3 players, notebooks, netbooks, ultrabooks, tablets and mobile phones, and further placed the advantages of mobile learning as convenience for accessibility from anywhere; easy collaboration and provision for an instantaneous sharing among users of the same content leading to the reception of instant feedback and tips; and portability by replacing traditional text books.

Generally, technology is seen as a significant driver of the wheel of change and also plays a vital function in instructional design and delivery. Present day technological advancements have led to wide spread changes in the implementation of educational programmes. These technologies, such as the telephone, radio, television, and the Internet, have been the strength on which new instructional delivery methods and platforms are anchored (Idowu, Adenike & Osafisan, 2012). Thus, the necessity to upgrade the educational systems of developing nations to meet the needs of both the present and future generations of learners.

The Internet has developed worldwide IT systems that facilitate the exchange of views and collaboration in various academic and non-academic disciplines (Velve, 2014). This development has led to an affirmative response from the industrialized countries in pursuit of new methods of delivering instructions. Since the world has become a global village, technology has ceased to be the exclusive reserve of developed countries. Even the developing nations are keying into this innovative stride hoping for a better future (Nwezeh, 2010). According to Ajayi (2000), the revolution taking place in information and communication technologies have been the central and driving force for globalization process. Both developed and less-developed countries cannot afford to miss out on the opportunities these technologies are creating. Today, the fastest environment for data communication and the operation of Information Technology systems is the internet and education has keyed into its use in the teaching and learning process. This can be referred to as e-learning.

E-learning as defined by Gulbahar (2009) is the execution of teaching activities in electronic environment. The author refers to it as the transferring of knowledge and capabilities through electronic technology. This can also be seen as the execution of learning in a web-based format through internet or computer network systems. E-learning is a web-based application technology which provides education with an enabling ability to share learning materials, academic information, and provide a good platform for spreading class notes, non-textual materials, interactive non-linear tutorials, students' questions and comments, and stimulate individual class sessions. Velve (2014) opined that as the capabilities

of smart phones and tablet devices grow day-by-day, tablets will become the virtual classroom and emerging class of tools which will let students manage digitally almost every aspect of their educational and professional life. The advantages of e-learning notwithstanding, there has been an unrelenting quest for faster and cheaper technology for instructional delivery with better services and better coverage. This quest for better technology was what led to the conception of cloud computing.

Traditional Instructional Delivery System in Nigeria and the Need for Innovation

Basically, teaching must include two major components: sending and receiving information. In the pre-technology education age, the teacher is the sender or the source, who is considered the sole owner of knowledge, the content is the message, while the learner who is considered a passive participant in the process, is simply the receiver of the information. The teacher delivers the information using the lecture method and with, at most, the chalkboard as teaching aid. This method of instructional delivery has been in use for a long time as a strategy for teaching and learning in the elementary school as well as other levels of education in Nigeria. Observation, according to Edu, Cornelius-Ukpepi and Ndifon (2016), shows that as dynamic as the world has been in values, technology, science, commerce, healthcare, transportation, and so on, the classrooms situation in Nigeria has remained unchanged where students are seen lined up in rows with slates, chalk, paper and pencil while the teacher is seen at the blackboard, jotting down important facts, the

students copying all that is written expecting to memorize them for examination.

In this paradigm, the teacher is in total control of the process, delivering the content with emphasis on just factual knowledge. This method has been found to be very ineffective for teaching and learning. According to Amadi (2010) this method of instructional delivery places the learners in a very passive role and their concentration fades off after a few minutes.   The author listed out the following limitations which may prevail in the traditional teaching method:

1. Teaching in classroom using chalk-and-talk is one way flow of information.
2. Teachers often continuously talk for an hour without knowing students' response and feedback
3. The material presented is only based on lecturer notes and textbooks.
4. Teaching and learning are concentrated on plug and play method rather than practical aspects.
5. The hand writing of the lecture decides the fate of the subject.
6. More emphasis has been given on theory without any practical and real lifetime situations
7. There is insufficient interaction with students in classroom.
8. Learning from memorization but not understanding.
9. Marks rather than result oriented.

Looking at these challenges, there is need to consider the use of innovative teaching strategies for enhancing learning not only at the elementary school but all other levels of education. As observed

by Prensky (2001) today's learners, are in a digital world and the curriculum for the educational system may no longer be adequate for teaching them. This has created a gap between what is taught in school and the present technological world of work. Global trend has also shown that education provisions and delivery worldwide have shifted from the traditional or conventional model to electronic and web-based system.

Over the years, the world has become increasingly super-connected turning it completely to a global village. The world today is made up of the Internet and its associated services which are accessible and immediate. People and businesses can now communicate with each other without barriers, and even machines are interconnected with each other. There is therefore, need to incorporate cloud computing into training curricula of both teachers and pupils with a view to creating access to world class Information Technology infrastructure to enhance the skills of learners in the Nigeria educational system. Nigeria as a nation has the onus to adjust her education system to fit into the digital age of today. This change has to begin with the primary level of education. This level of education is the first and so the foundation for every other level of education. Thus, if this mode of learning is introduced to the pupils at this level, then there is hope for effective capacity building towards global competitiveness of the products of the Nigerian education system in the near future.

Challenges inherent in the Traditional System of Educational Delivery

The traditional system of educational delivery has inherent in it, challenges especially with the tools needed for teaching and learning effectiveness. These challenges are:

Ill-equipped libraries:

The major objective   of setting up a school library is to inculcate reading habit early in the life of school children thereby promoting the love for reading and enhancing academic achievement. Establishment of school libraries is also meant to support school curriculum by expanding resources to enhance teaching in the conventional paradigm. However, according to McAlber, Samuel, Nwaonu & Ogu (2015), non-existence of quality school libraries has been the bane of poor reading culture among school children, from the elementary level of education.

In an analysis of issues related to the school library in Nigeria, Igwe (2005) observed that we can no longer rely on human memory or oral tradition for accurate preservation of cultural values and that good libraries in schools, villages, and cities will be an essential and precious instrument for the achievement of literacy, freedom of speech and a well-informed citizenry. The author noted that experience and research have shown that a good library adds a new breadth to learning. After analyzing the problems, Igwe concluded that the alleged falling educational standard in Nigeria could partially be attributed to the lack of good school libraries. Since the traditional model is dependent so much on school libraries, and on the other hand, the libraries are not properly stocked and managed, the teaching/learning process also suffers from ineffectiveness.

Unavailability of instructional facilities:

According to Oni (1992), facilities constitute a strategic factor in the functioning of an organization. This is so because facilities determine to a very large extent the smooth functioning of any social organization or system including education. In a study, Farombi (1998) found that the classroom learning environment in some schools in Nigeria was poor. For sustainable quality assurance, appropriate school physical facilities are indispensable in the educational process. The importance of instructional facilities notwithstanding, studies have identified absence of basic materials, facilities and infrastructure in Nigerian schools, especially at the elementary level (Farombi, 1998). Adesina (1981) acknowledged poor and inadequate physical facilities and overcrowded classrooms among other factors as being responsible for low level of learning. This is an indication that most Nigerian schools do not have adequate and appropriate facilities for effective learning. Since it is so difficult to provide these materials, facilities and infrastructure in all schools, there is the necessity to look for alternative means of delivering instruction for effective learning where the issue of overcrowded classrooms would give way for individual learning that can take place anywhere and anytime.

Inaccessibility to conventional schools by most Nigerians:

Majority of Nigerians live below poverty level. So, they are unable to attend urban based institutions and thus remain deprived of even elementary education in conventional institutions. There is also the population of those who took employment without completing their studies and have the desire to continue but could not do so because of the limited offer in the traditional institutions of learning. Furthermore, the tradition of child/early marriage and discriminatory religious beliefs in the country prevents a great number of females from education. These are some of the major issues responsible for why millions of Nigerians are deprived of education, their interest notwithstanding. Distance learning becomes the only option for these categories of people. This is anchored on cloud computing, which provides avenues for education for such a vast underprivileged population.

Concept of Cloud Computing

Cloud computing is a computing model that depends on existing information technology infrastructures and tools such as Internet, network computing, virtualization and web services to provide improved efficiency, minimum service cost and convenience in the development of education and service delivery (Idowu &Osafisan, 2012). The objective of cloud computing, according to Odunika, Onugbara and Ojo (2012), is to provide improved computing services to consumers by enabling institutions to implement education to reach a diverse population and provide open learning environment at all times.   The cloud provides high processing power, low cost of maintenance, less computing downtime, bigger storage and more manageability. The customer has no need to buy equipment since the service provider has been paid to offer the services. To achieve this low cost cloud computing uses networks of large group of servers typically running low-cost consumer personal computer technology with good connections to share data across them. This

shared infrastructure comprises huge pools of systems that are connected together. Cueli (2010) maintained that cloud computing is not a technology but a model for providing and marketing information technology services that meet certain characteristics. According to Cueli cloud computing has the following characteristics:

1. The infrastructure is shared. Sharing of a common technology platform and a single application by several consumers.
2. The services are accessed on demand in units that vary by service. Accessing the service is in units depending on the service.
3. Services are flexible to the user and there are no limits to growth.
4. Pricing depends on consumption. Payment is done per unit and depends on the service and is measured in time periods.
5. Services can be accessed from anywhere in the world by multiple devices.

Cloud computing has three different service models according to WorldConference.net (2014). These are:

1. Infrastructure as a Service (IaaS) where cloud service providers offer all the required hardware and the customers only deal with their application software and operating systems such as servers, net technology, storage or computation and virtualization of hardware resources.
2. Software as a Service (SaaS) where customers access applications over the Internet and the application, which are hosted in the cloud can be used for a wide range of tasks for individuals and organizations.

3. Platform as a Service (PaaS) which provides infrastructure and software to customers and everything that a developer needs to build applications, such as programming software or databases software, having an indirect access to the infrastructure as a service and, consequently, to the infrastructure.

In addition to these services, cloud computing has four deployment modes. These modes, according to Alghali, Najwa and Roesnit (2014) are:

1. Private Cloud, which is cloud platform meant for specific clients. It can be managed internally by Internet Information Technologies or externally by a third party. This main feature avoids many security issues but may be expensive for small organizations
2. Public cloud which offers services to any customer over the Internet. This is the most common model of cloud computing to many customers. All the services are provided by a third party. Public clouds are constructed using collective shared physical resources, and accessible over a public network.
3. Community cloud is when some clients with similar needs share an external private cloud. The platform of the cloud would be provided by a supplier but only the customers in same community would be able to access the cloud.
4. Hybrid cloud or enterprise cloud consists of both in-house providers and third party providers where part of the cloud is private and only accessible internally and the other part is public and can be accessed externally.

Advantages of Cloud Computing to the Education Sector

Cloud computing has the following advantages to the education sector:

1. Most of our primary schools are located in the rural areas with low accessibility to good infrastructure and facilities for effective learning. Cloud computing would afford teachers and learners the opportunity for effective teaching and learning using the infrastructure and facilities of service providers no matter the location of such facilities.

2. Educators are known for their information seeking skills with the quest to update their knowledge. Through cloud computing educationists are provided this information using the internet for the enhancement of academic excellence by deploying cloud services through various mediums. All these happen through the creation of records and files, storing of these files and sharing them among educators or learners making it possible for cloud computer services to be spread across all levels of education.

3. Teaching materials can also be made available through Cloud Services.

4. Some web-based software which are hosted in the cloud are generally known for academic improvement (Aaron & Rochie, 2012).

5. With the flexible nature of cloud computing, academic professionals and or learners can always prepare their proposals, write-ups, conference papers etc, store them on the cloud, and easily retrieve them as and when needed thus, dispensing with huge volumes of textbooks.

6. Cloud computing provides students with the ability to practice their skills in an environment that is easy to access and manage.

7. Cloud computing frees institutions from acquiring and installing costly equipment for demonstration and learning modules. Utilizing this innovation lowers the overall investment in hardware, while creating an opportunity for expansion and support of teachers and learners.

8. To the government, the questions of quick, efficient and affordable way to deliver education services and building in learners the skills needed for the labour market are answered through cloud computing.

9. Learners can learn from anywhere. Once a learner has an internet connection, learning can take place at anytime and anywhere with many cloud services offering mobile apps.

10. Learners' assessment can also be managed through cloud computing (e-assessment).

11. Cloud computing cuts out the high cost of hardware. Educators and learners simply pay and enjoy a subscription-based model that is kind to their cash flow.

12. A team of teachers or learners can access, edit and share documents anytime and from anywhere. Cloud-based file sharing apps help them to make updates and give them visibility of their collaboration.

To further emphasize the need for Cloud Computing, Fogal (2010) listed the following as educational services that can be better supported by cloud computing:

a. Grade books, roaster, lesson plan and classroom management services for teachers.

b. Content management services that teachers use to assign curriculum content to students and that students use to access the assigned content.

c. An on-line community service that teachers use to interact with peers and share resources.

d. A professional development service that teachers use to manage their career development path and become more proficient in the use of technology in the classroom and in their various research endeavours.

e. A school access tracking service to track equipment and supplies.

f. A School bulletin service to inform parents and the entire community of school activities.

Nigeria's Level of Readiness for Cloud Computing

With all the advantages of Cloud Computing, it is expected that the stakeholders in the Information and Communication Technology industry in Nigeria, should equip themselves with the necessary facilities with adequate capacity to meet up with traffic situation. According to Ariyo and Olaojoyatar (2013) Nigeria has the 10th highest number of Internet users in the world. However, it is disappointing that although Nigerians are hungry for broadband, Nigeria ranks 112nd in the Global Information Technology Report and the Network Readiness in the year 2013. This points to the fact that, much needs to be done by stakeholders in ensuring that broadband achieves its stated goals.

It is, heartwarming however, to note that mobile operators like MTN, GLO and Airtel have launched mobile cloud offerings targeted at the SME market. The Nigerian cloud computing market is in the early growth stages, with emphasis being on IaaS particularly storage and infrastructural services.   MTN launched a cloud service brokerage product in Nigeria and Ghana targeted at its SME customers (Odufowa, 2013). Cloud computing is a potent instrument for the fast growing education sector in Africa. Its importance stems from its social economic benefits and ability to make easy distance cloud readiness in selected African countries. In Nigeria, the first education cloud was a public private partnership between Obafemi Awolowo University and TTC technologies. The aim was to provide a management system, that manages courses, transcripts, students' records, and accounts as well as a learning system which provides online classroom and curriculum management skills. Though cloud computing has actually been introduced in Nigeria, all effort towards its provision has been undertaken by the private sector without concrete arrangement for sustainability. Thus there are several challenges to effective readiness and usage of the cloud computing for learning in Nigeria.

Challenges in the Use of Cloud Computing in Primary Schools in Nigeria

Cloud computing lends itself to high patronage because of the benefits it parades. However, it goes along with some eminent challenges. These are:

1. Inaccessibility to mobile devices by primary school learners, especially in the rural areas of Nigeria.

2. Incompetence in the use of mobile devices by both primary school learners and their teachers.

3. High level of poverty that makes it difficult for learners and teachers to afford payments to service providers, for using cloud computing for teaching and learning.

4. Epileptic power supply is one of the factors that affect all sectors of the Nigeria economy, as well as most of the developing countries (Nebo, 2013). This could be a great challenge to the adoption of cloud services since the customers have the disadvantage of instant access to stored data and inconsistency in internet access. This leads to heavy reliance on the use of generators which is not cost effective and may not even be available.

5. In view of our low technological development, locally developed academic materials may not easily find their way into the cloud.

6. There is also low awareness on the part of Nigerians. This makes it difficult for both teachers and learners to key in to the innovative technology of the cloud.

7. Cloud users store and host the entire needed information in the cloud. There is therefore the issue of data insecurity. The assurance of data security is seen as the greatest deterrent to the adoption of cloud computing in all spheres.

8. Internet surfing as a result of bandwidth limitations. According to Lori (2011), 10mbps is the benchmark for cloud and video related activities. However, Nigeria is said to have the lowest average internet connection speed which has

declined to 2.8mbps. This inhibits the bandwidth-efficiency, thereby taking a longer time to connect to the cloud on the internet. Although expenses on system acquisition, management and maintenance may be low, they may have to spend more for the bandwidth for a better performance.

9. There is the problem of the ability to choose the correct cloud mode that will apply to the users' needs.

10. There is the problem of loss of control. Entrusting a third party to be responsible, honest and reliable business partner (and one for which one is being held responsible) is a cause for worry for some.

Way Forward for Cloud Computing Implementation in Nigeria Elementary Schools

To mitigate the challenges of effective accessibility and utilization of cloud computing to enhance learning in Nigeria primary schools, the following recommendations were made:

1. Government should make monetary provisions for mobilizing and sensitizing the Nigerian populace on the value of cloud computing.

2. Training on competencies in computer and other mobile devices should be made compulsory for all primary school pupils, especially those in the middle basic level. This would provide pupils the skills for accessing the cloud for enhanced learning early in their academic pursuit.

3. Also, training on computer competencies for cloud accessibility should be made a

major part of primary teachers' training education in Nigeria.

4. There is need to ensure security, confidentiality, integrity, and availability of stored data. It is necessary for every school to take some extra precaution to safeguard their data. And it is only the government that can handle the aspect of security for the various schools.

5. Since the starting point for cloud computing is expensive, the government should partner with donor agencies like UNESCO, World Bank, UNICEF, etc for financial support to facilitate the accessibility to the clouds if the education sector must move along the pace of information technologies and global technological development

6. The basic level of education, which is the foundation for educational attainment, should be given priority as far as training on cloud computing tools and accessibility is concerned. The policy of "catch them young" should apply here. If learners are made aware and trained at this formative level, it will be easier for the future generation of Nigerians to naturally flow into the utilization of this innovative technology for enhancing learning and development.

7. To ensure effective utilization of the cloud services, it should be a matter of policy that teachers give learners tasks that are cloud based and direct them appropriately.

8. Retaining programmes for serving teachers should be vigorously pursued to make them computer literate and skilled enough to be able to train their students in these same skills.

Conclusion

As important as cloud computing is in today's world, Nigeria tends to be lacking behind in this form of innovation. A shift in the teaching and learning paradigm is needed for enhancement of learning at the primary level of education. This shift can only take effect for today and the future if practical computer education is taught at all levels of education beginning with the elementary level. Adequate exposure to this kind of education will equip the learners for cloud computing and for further enhancement of learning.

References

Aaron and Rochie in Ariwa, E.; Ibe-Ariwa, K. C.; Ibe, N. C. (2014). Cloud computing and green technology sustainability: comparative analysis of 3-tier education systems in Nigeria, *Journal of educational and instructional studies in the world, 4* (3), 35-38

Adesina, S. (1981). What is Educational Planning? In Adesina, S. (Ed.) *Introduction to educational planning*. Ife: University of Ife Press Ltd.

Ajayi, G. O. {2000}. Challenges to Nigeria of Globalization and the Information Age. Keynote Address at Workshop on National Information Communication Infrastructure (NICI) Policy, Plans and Strategies for Implementation. National Universities Commission (NUC) Auditorium. Aguiyi Ironsi Street, Maitama, Abuja. March 28-30.

Alghali, M.; Najwa, H. M. A. & Roesnit, I. (2014) *Challenges and Benefits of Implementing Cloud Based E-Learning in Developing Countries*. Proceeding of the Social Sciences Research Conference held on 9-10 June at Kota Kinabalu, Sabah, MALAYSIA. Organized by WorldConferences.net.

Amadi, M. N. (2012) Enhancing student learning problems in university of Lagos through innovative teaching and technology strategies. In Soji O. (Ed.). *Revitalizing Nigerian Education in Digital Age,* 74 - 83.

Ariwa, E.,Ibe-Ariwa, K. C., Ibe, N. C. (2014). Cloud computing and green technology sustainability: comparative analysis of 3-tier education systems in Nigeria. *Journal of educational and instructional studies in the world,* 4 (3), 35-38.

Ariyo, A. &Olaojoyatan, M. (2013). The poor state of broadband in Nigeria: An impediment for national development and globalization. *Academic Journal of Interdisciplinary studies,* 2 (12), 51-60.

Cueli, M. (2010). *The key concepts of cloud computing*. Retrieved July 6, 2010, from http://www.pcworld.com/article/200332/the_key_concepts_of_cloud_computing. html

Edu, G. O., Cornelius-Ukpepi, B. U.,&Ndifon, R. A. (2016). Information and Communication Technology (ICT) integration into the universal basic education for sustainable national development in Nigeria. *Education for Today, 12* (1), 43-51.

Farombi, J. G. (1998). Resource concentration. Utilization and management as correlates of students' outcomes: A study in school quality in Oyo State.

Fogel, R. (2010). . The Education Cloud: Delivering Education as a Service. Intel® World Ahead WHITE PAPER, p8

Gulbahar Y, Tınar H. & Kose F.(2006). *Information and Communication Technologies*. Ankara: Gerhardi Publishing,

Idowu, S. A. &Osofisan, A. O. (2012). Cloud computing and sustainable development in higher education. *Journal of Emerging Trends in Computing and Information Sciences, 3* (11), 1466-1471.

Igwe**,** U. O. (2005). Harnessing Information Technology for the 21st Century: Library Education in Nigeria. *Library Philosophy and Practice* 7 (2) (Spring 2005)

Lori Makvite (2011). The Cloud and The Consumer: The Impact on Bandwidth and Broadband Accessed 24th August, 2011 from https://devcentral.f5.com/articles/the-cloud-and-the-consumer-the-impact-on-bandwidth-and-broadband

McAlbert, F.U, Samuel, U. I., Nwaonu, I.andOgu Dolly C. (2015). Availability of School Libraries and their Standards in selected Secondary Schools in Owerri West Local Government Area of Imo State. *International Journal of Academic Library Information Science*, 3(6), 149-155.

Nwezeh, C. M. T (2010). The Use of ICT in Nigerian Universities: A Case Study of Obafemi Awolowo University, Ile-Ife. *Library Philosophy and Practice*. http://www.webpages.uidaho.edu/~mbolin/nwezeh3.htm

O'Malley, J., & McCraw, H. (1999). Students Perceptions of Distance Education, Online Learning, and the Traditional Classroom. *Online Journal of Distance education Administration*. Retrieved September 19, 2003 from hppt://www.westga.edu/-distance/omalley24.htm.

Odunaike, S. A.; Olugbara, O. O & Ojo, S. O. (2012). Using cloud computing to mitigate rural e-learning sustainability and challenges. Conference proceedings of the World Congress on Engineering and Computer Science (WCECS) held on October 24-26 at San Francisco, USA.

Odufuwa, F. (2013), Nigerian cloud report (unpublished).

Prensky, K. (2001). *Students skills and ICT literacy: Meeting the 21st century challenge.* Retrieved on December, 20, 2011 from

http://www.ncrel.org/sdrs/areas/issues/ n=methods/technology/te800.htm .

Samaila S. (1997) An Assessment of the School Library Literature in Nigeria, With Emphasis on the Impact of School Libraries on Educational Performance. *World Libraries,* **7, (2). Retrieved,** September 19, 2003 from http://www.westga.edu/~distance/ omalley24.html.

Velev, D. G. (2014). Challenges and opportunities of cloud-based mobile learning. *International Journal of Information and Education Technology.* 4 (1), 49-53.

THE DIFFICULTIES IN MATHEMATICAL PROBLEMS SOLVING AMONG SECONDARY SCHOOL STUDENTS IN KANNUR DISTRICT IN KERALA

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Abstract

Mathematics is a skillful, thought provoking and logical ability needed subject, which comes by proper training and proper learning. A successful Mathematician is blessed with complex problem solving skills that they can use in any situation of life. The fundamental goal of all instructions is to develop skills, knowledge and abilities that transfer to tasks not explicitly covered in the curriculum. A secondary goal of Mathematics teaching and learning is to develop the ability to solve a wide variety of complex problems. Problem solving was one of the major aspect in Mathematics curriculum which required students to apply and to integrate many mathematical concepts and skills as well as making good decisions. In this study, therefore, the investigator made an attempt to identify the difficulties while solving mathematical problems and is designed to find out the difficulties and how it affects the student's achievement.

Key Words: *Problem Solving, Secondary School Students.*

Introduction

Mathematics plays a very important role in our daily living. It is a subject that deals with the problems, which involve a process of analysis, computation and other mental skills. Historically, learning Mathematics and teaching it has been motivated by the belief that the study of Mathematics helps individual to learn, to reason and to apply such reasoning to everyday problems. This matter, Mathematics develops the mind to think critically and analytically. It is more than counting, measuring, and computing. It is an eye opener to all sciences. As far as Mathematics instruction is concerned, the major goal is the involvement of the students in the process of discovering mathematical ideas and formulating process.

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The fundamental operations in Mathematics are addition, subtraction, multiplication and division. There are corresponding symbols for each. The plus sign (+) is for addition. The minus sign (-) is for subtraction. The symbols "x", "*" and "•" signify multiplication. The obelus (÷) and forward slash (/) are used for division. Addition combines two or more numbers to get their sum or total, while subtraction finds the difference between two quantities. Multiplication is repeated addition; one of the numbers in a multiplication equation indicates how many times the other number needs to be added to itself. Division is the inverse of multiplication.

As Cobb (1991) suggested that the purpose for engaging in problem solving is not just to solve specific problems, but 'encourage the reorganization of the involved schemes as a result of the activity'. Mathematics is necessary to everyday life as an adult, so difficulty in learning Mathematics during childhood can lead to even greater problems in the future. In the past more focus was placed on why children encountered issues learning to read and write rather than why they do poorly in Mathematics. But today everyone gives importance to Mathematics than any other subjects. To arouse and maintain the interest of the students towards Mathematics is the main problem for the teacher. He or she knows that loss of interest is one of the principal causes of student's failure. Students work most effectively at task in which they are genuinely interested. Interest in the subject can be effectively aroused and maintained by numerous special devices and activities. Mathematics assumes a prominent

place in modern education. It uses numbers, signs, shapes and patterns instead of words. It develops scientific attitude among the students.

The National Council of Teachers of Mathematics (NCTM, 1989) recommended that the problem solving should be the focus of school mathematics. One of the interesting concerns about learning Mathematics is the fact that it develops the mind to solve problems that need higher order thinking skills. These problems and puzzles induce the curiosity and challenge the ingenuity of individuals. Problem solving is one of the major aspects in Mathematics curriculum which required students to apply and to integrate many mathematical concepts and skills as well as making decision. Introducing problem solving into the classroom improves student's skills and their ability to think creatively, logically and carefully.   So it is very necessary to understand that what are the difficulties faced by the secondary school students when solving mathematical problems.

Review of Related Literature

Krulik (1987), states that a problem is situation, quantitative or otherwise that confronts an individual or groups of individuals, which requires resolution, and for which the individual sees no apparent path to the solution. Various definitions of Problem Solving have been presented by experts. Basically these definitions contain the same meaning while the differences lie only on the ways they formulate them.

In Halliday's (1975) view, learning language involves 'learning how to mean'. Thus, the language of mathematics involves

learning how to make and share mathematical meanings using language appropriate to the context, which is more than recognizing and responding to words in isolation. This, in turn, demands the use of appropriate language (words and symbols) whose level of difficulty is at part with the cognitive abilities of the learners concerned. Communicating mathematical ideas so that the message is adequately understood is difficult enough when the teacher and learner have a common first language but the problem is acute when their preferred languages differ. A number of studies have clearly indicated that a student's command of English plays a role in his/her performance in mathematics.

Lester (1994) stated that successful problem solving involves coordinating previous experiences, knowledge, familiar representations and patterns of inference, and intuition in an effort to generate new representations and related patterns of inference that resolve the tension or ambiguity (i.e., lack of meaningful representations and supportive inferential moves) that prompted the original problem-solving activity.

According to Schoenfeld (1994), problem solving, as used in Mathematics education literature, refers to the process wherein students encounter a problem – a question for which they have no immediately apparent resolution, nor an algorithm that they can directly apply to get an answer. They must then read the problem carefully, analyze it for whatever information it has, and examine their own mathematical knowledge to see if they can come up with a strategy that will help them find a solution. The process forces the reorganization of existing ideas and the emergence of new ones as students work on problems with the help of a teacher who acts as a facilitator by asking questions that help students to review their knowledge and construct new connections.

Some students believe that their mathematical achievement is mainly attributable to factors beyond their control, such as luck. These students think that if they scored well on a mathematics assignment, they did so only because the content happened to be easy. These students do not attribute their success to understanding or hard work. Their locus is external because they believe achievement is due to factors beyond their control and do not acknowledge that diligence and a positive attitude play a significant role in accomplishment. Students might also believe that failure is related to either the lack of innate mathematical inability or level of intelligence. They view their achievement as accidental and poor progress as inevitable. In doing so, they limit their capacity to study and move ahead (Beck, 2000; Phillips & Gully, 1997).

The study by Cass et al. (2003) evaluated effects of manipulative instruction on perimeter and area problem solving performance of high school students with learning disabilities in Mathematics. Students rapidly acquired the problem solving skills, maintain these skills over a two month period, and transferred the skills to a paper-and-pencil problem solving format.

By Cai (2005), problem solving in Mathematics can be explained as critically and a cognitive process. Creative thinking and problem solving are frequently seen as a task for an individual but an individual can only build these skills from what he/she experience or learned. Problem solving

combined experimental and correlations method to investigate the effects of problem solving effectiveness.

Behare (2009) in his study of problem solving skills in Mathematics learning investigated cognitive skills in solving mathematical problems of learner at the terminal stage of elementary education. It revealed that those who can verbalize the process of solution are better at solving problems.

Ali (2010) in his study on the effect of using problem solving method in teaching Mathematics on the achievement of Mathematics students found that there was a significant difference between the effectiveness of traditional teaching method and problem solving method in teaching of Mathematics at elementary school.

In the research study of Hugar (2011), problem solving is the back bone for mathematical instruction. This emergence has come to be established due to the idea that studying math through problem solving improves one's ability to think, to reason, and to solve problems that are confronted with in the real world. There seems to be three them is characterized by the role of problem solving in school mathematics curriculum:

- Problem solving as content; the idea that problems and the solving of them are a means to achieve other valuable ends.
- Problem solving as skill; this is the idea that it is a skill to be taught and not necessarily a unitary skill, but is a clear skill orientation.
- Problem solving as art; this is the idea that learning math through problem solving is an art of discovery for its methods and rules.

Voyer (2011) in the study of performance in mathematical problem solving as a function of comprehension and arithmetic skills found that pupils who give greater importance to situational information in a problem have greater success in solving the problem.

Fernandez, Anthony and Kochler (2011) experimented on mathematics teachers circle around problem solving. Mathematics teachers' circles were developed with the aim of establishing a culture of problem solving among the middle school mathematics teachers. The culture could then be carried back into the teachers' classrooms.

Ruply, Margret and Robert (2012) studied the effects of reading and enhanced word problem solving. Results stressed that teachers need to think less about students deriving an answer and more in terms of facilitating students' application of the cognitive components of reading and mathematics.

Objective

This study was guided by the following objective:

To find out the difficulties faced by secondary school students in Kannur district in Kerala while solving mathematical problems in the Mathematics classrooms.

Research Question

This study was guided by the following research question:

What are the difficulties faced by secondary school students in Kannur district in Kerala while solving mathematical problems in the Mathematics classrooms?

Methodology

The required data were collected during an action research conducted. The data were collected from the students studying in eighth standard from Kannur district in Kerala. The researcher used random sampling for the selection of school. Out of 38 students, there were 24 boys and 14 girls in the classroom. The research was conducted on the basis of the qualitative analysis of the results that were obtained through the continuous evaluation, observation and various achievement tests of the students in the Mathematics classroom.

The purpose of the research was to know about that what were the difficulties faced by the secondary school students when they were solving mathematical problems in the classroom. The investigator taught two chapters in the classroom, namely, 'Equations' and 'Polygons' for that. The students followed Kerala state syllabus textbook of the subject Mathematics. On the basis of the close observation of learning and the way they did problems in the classroom and home work, the research was carried out. These two chapters were selected due to problems in these chapters and they lead the research successfully. The main criteria for the research were the responses of each and every student in the Mathematics classroom.

Tools for Research

Observation and analysis of home work problems was the main tool for the research. Data collected from the responses of the students' in the Mathematics classroom. Also the continuous observation by regularly checking the notebooks of the students' was done. The various achievement tests of the subject Mathematics in the classroom also analysed.

Analysis of the Data

The students faced by the difficulties while solving mathematical problems primarily because of the lack of understanding the fundamental mathematical operations such as "addition", "subtraction", "multiplication" and "division". Out of 38 students, there were 24 boys and 14 girls in the classroom. Around 82% of the students, including both girls (29%) and boys (53%), can do all the fundamental mathematical operations very well. Around 18% of the students, including both girls (8%) and boys (10%), can't do multiplication and division well.

Around 74% of the students can't do the transfer of word problems into Mathematics language. And hence they couldn't find out the solution of the equation. Only around 26% of the students including both girls (10%) and boys (16%) have the fundamental idea about solving mathematical problems. It can be noted that the students' major difficulty in solving mathematical problems are carrying-out-the plan and looking back. This reveals that the students have the inability to use correct Mathematics in the appropriate places and that students' mathematical problem solving skills were very poor. Almost 8% of the students struggled with memory and attention problems as both skills were necessary for mathematical aptitude. Other problems common to Mathematics students include computational weaknesses, difficulty in conceptualizing mathematical principles and language challenges in word problems. Students' prior knowledge of basic mathematical concepts also affects the learning of new concepts. Rote learners cannot understand the new concepts correctly

and then they learn that also by rote learning only for the examination, which will never help them to understand the mathematical concepts. As like of any instruction lack of confidence builds with uncertainty and failure, leaded to more problems.

Word problems are a good example of problem solving skills manifesting themselves in Mathematics courses. They are also one of the most hated types of problems out there. The students who hate these problems must understand that they can be applied directly to their daily lives. The word problems are introduced into instruction when pupils have learned a Mathematics procedure and the teacher wants to give them practice in applying it. The following are the main observations from the research.

- The inability to understand the meaning of the word problems was the main reason of the difficulty of the students while solving mathematical problems.
- Most of the students confused that how to write the word problems to the Mathematics language.
- Memorizing instead of understanding mathematical principles also causes difficulties for   students, especially when they are unable to remember the exact steps used to solve a problem.
- The improper study habits such as rote learning, memorization, etc. of students were negatively affects different instructions, especially Mathematics.

This leads to the below average level performance of students in achievement tests and examinations in the Mathematics classroom. An objection to word problem is that they provide no opportunity to learn skills of problem formulation. Increased attention is now given to the real problems; problems that are meaningful to the pupil and that require knowledge of the problem settings as well as knowledge of Mathematics.

The last phase of Mathematics problem solving skills is on output difficulty. A student with problems in output is unable to recall basic mathematical facts, concepts, procedures, rules, or formulas. Some of the students were very slow to retrieve facts or pursue procedures and had difficulty in maintaining precision during mathematical work. They had difficulty with handwriting that slow down written work or make it hard to read later. Some of the students had difficulty in remembering previously encountered patterns and forgot what he or she was doing in the middle of a math problem leading to incorrect answers or solutions. Thus, the students made a highest proportion of errors on this Process Skills followed by errors on the following order:- Carrying-out the plan, Comprehension, Carelessness, Reading and Encoding. However such instances are not a clear indication of failure to mathematical problem solving but learning should be constant and must seek other tools for improvement.

Conclusion

Problem solving was one of the major aspects in Mathematics curriculum which required students to apply and to integrate many mathematical concepts and skills as well as making decisions. However, it is found that the students were faced difficulties while solving mathematical problems. One of the aims of teaching through problem solving was to encourage students to refine and build onto their own processes over a period of time as experiences allow them to

discard ideas and become aware of further possibilities (Carpenter, 1989).

The main difficulties committed by the participants of the study were on inability to translate problems into mathematical equations and inability to use correct Mathematics. These forms of difficulties imply a need for mastering mathematical concepts and formulas on the part of the Mathematics learners to lessen errors in solving mathematical problems and in constructing mathematical equations in a well developed manner to come up with the correct solution. The findings of the study suggest a focus on teaching mathematical concepts and formulas to students and a need to expose them with a variety of math problem types which will require them to think analytically by trying different problem solving strategies that are appropriate to solve problems.

From the students, around 74% of the students were faced difficulties when solving mathematical problems in the classroom. Around 26% of the students had no the clear idea about how to solve a mathematical problem, especially the word problems. The major problem of the students was the lack of understanding of the transfer of word problems into Mathematics language. And hence they couldn't find out any solution for the equations. This seriously affects student's to focus on and understand terms and operations for algorithms and problem solving. Most of the students marks scored in the achievement tests were lying below the average score. The inability to understand the meaning of the word problems was the main reason of the difficulty. And how to write the word problems into math language

is very much confused most of the students. However, the ignorance of the appropriate mathematical equations leads to the difficulty in problem solving. Memorizing instead of understanding the mathematical principles also causes difficulties for students, especially when they are unable to remember the exact steps used to solve a problem. Also, the improper study habits of students negatively affect different instructions, especially the subject Mathematics, seriously. This leads to the low level performance in achievement tests and examinations of the students in the Mathematics classroom.

Suggestions

Some students lack well-developed mental strategies for remembering how to complete the mathematical problems most likely the word problems and combinations of basic facts. However, strategies to improve capacities for remembering facts, formulas, equations or procedures can be taught. Today the learners, who learn Mathematics, are facing major problems not only in learning the mathematical contents but also in understanding some specific problem factors. Problem solving was one of major aspects in Mathematics curriculum which required students to apply and to integrate many mathematical concepts and skills as well as making decision.

Teachers can stimulate the interest of students in Mathematics by teaching with models, charts, online tutorials and multimedia packages. Reading or writing anything you like to do are good ways to keep the brain sharp, and will potentially improve the logical thinking and reasoning abilities of the students. Use puzzles to maintain interest and to create a positive attitude in the Mathematics classroom.

Students who fail to pay proper attention to detail and double-check their work before submission often score poorly, when the students need to be highly attentive during class and when completing assignments and exams to excel in mathematics. By using attractive instruments like computers, projectors and improvised aids for the teaching - learning process will helps to minimize the difficulties of solving mathematical problems. If they can memorize the understood mathematical terms, facts, concepts, principles or formulas, then the students were able to remember the exact steps used to solve a problem. Present state mathematics syllabus lack problems for drill which is to be urgently remedied.

The findings of the study will be a reference for further research on problem solving difficulties in a larger scope where possible as a help to improve the course syllabus of the instruction Mathematics and develop instructional materials where students are provided with the processes and strategies. This makes the mathematical problems solving easy to learn and the secondary school students become successful and efficient problem solvers. And they can faced the daily life challenges with courageous and also they have the power to take good decision in any critical situation.

References

Ali, R. (2010). Effect of using problem solving method in teaching mathematics on the achievement of mathematics students. Asian Social Science, 6(2). Retrieved from www.ccsenet.org/ass.

Beck, P., Dworkin, L., Lienwand, S., Rios, J., Rainey, A., and L. Raith (2000). Mathematics Assessment: A Practical Handbook for Grades 6-8. (Classroom Assessment for School Mathematics K-12). Reston, VA: NCTM.

Behare, B. (2009). Problem solving skills in mathematics learning. Edutracks, 8(7), 34-36.

Cai, J., Mamona - Down, and Weber K. (2005). Problem solving research in mathematics education : what we have done and where we are going. Journal of Mathematical Behaviour,24, 217-220.

Carpenter, T. P. (1989). Teaching as a problem solving. In R. I. Charles and E. A. Silver (Eds), The Teaching and Assessing of Mathematical Problem Solving.

Cass, M., et al. (2003). Effects of manipulative instruction on solving area and perimeter problem by students with learning disabilities. Learning disabilities: Research and Practice, 18(2), 112-120.

Cobb, P., et al. (1991). Assessment of problem-centred second grade mathematics project. Journal for research in mathematics education (Reston,VA), vol. 22, Pp. 3-29.

Fernandez, Anthony and Kochler (2011). Mathematics teachers circle around problem solving. Mathematics Teaching in the Middle School, 17(2), 108-115.

Halliday, M.A.K. (1975). Taking One's Way In: A Sociolinguistic Perspective on Language and Learning. Alan Davis(ed.), Problems of Language and Learning. London: Edward Arnold. Pp. 60-92.

Hugar, Danielle. (2011). The Role of Problem Solving in the Mathematics Classroom. A Research Paper Methods. Extracted from http://www.lhup.edu/swillia6/ MATH%20200/Documents_and_Files/ Research_Papers_2011/DanielleKroll, D. L., & Miller, T. (1993). Insights from research on mathematical problem solving in the middle grades. In D. T. Owens (Ed.), Research ideas for the classroom: Middle grades mathematics (pp. 58-77). NY: Macmillan.

Krulik, Stephen and Rudnick, Jesse A. (1987). Problem solving. A handbook for teachers. Boston: Allyn & Bacon Inc.

Lester, F. K. (1994). Musings about mathematical problem solving research. Journal for Research in Mathematics Education, 25(6), 660-675.

National Council of Teachers Mathematics (1989). Curriculum and Evaluation standards for school mathematics. Reston, VA: NCTM.

Phillips, J. M., & Gully,S. M. (1997). The role of goal orientation, ability, need for achievement, and locus of control in the self-efficacy and goal setting process. Journal of Applied Psychology, 85, 612-624.

Rupley, M., Margret and Robert, M. (2012). Reading enhanced problem solving. European Journal of Psychology of Education, 27(1), 91-114.

Schoenfeld, A. (1994). Reflections on doing and teaching mathematics. In A. Schoenfeld (Ed.) Mathematical Thinking and Problem Solving. Pp. 53-69.

Voyer, D. (2011). Performance in mathematical problem solving as a function of comprehension and arithmetic skills. International Journal of Science and Mathematics Education, 9, 1073-1092.

AWARENESS AND INTEREST OF STUDENTS ON ICTS FOR ENGLISH LANGUAGE LEARNING

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Elsie Ugochi Nwaubani**

Abstract

This paper looked into awareness and interest of students on ICTs for English Language learning. The students used for the study were 100 level students of Federal College of Education (Special), Oyo. Descriptive survey research design was employed. The research instrument used was a structured questionnaire copies of which were administered to 161 respondents out of which 10 were jettisoned and 151 were used for the study. The research results indicated that the students acknowledged the significance of ICTs in English Language learning; were interested in deploying ICTs to advance their English Language capabilities; and were aware of ICT products or services through which their English Language skills may be enhanced. Recommendations were also made which include that the English Language lecturers should enlighten those students who may not be aware of how ICTs can positively influence their English Language proficiency on the benefits of ICTs to English Language learning; group assignments on English Language should be given that would involve the utilization of ICTs; during the teaching-learning process, the teacher should demonstrate how ICTs can be used in enhancing English Language skills, etc.

Introduction

It is obvious that language is of central importance to man because it is through it that various activities are carried out on daily basis. English Language could be said to be a vital tool that was handed over to the nation of Nigeria by her colonial masters. It offers a medium through which people from various ethnic groups in the land transmit information and communicate among themselves. This benefit is further extended towards citizens of so many other nations in Africa and indeed the world judging from the global status that the English Language possesses.

The importance of English Language in Nigeria has made it become a core subject that every student is expected to pass before

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proceeding for further studies at any Nigeria tertiary institution of higher learning. Even when the students are admitted, they are still taught the language presumably to boost their competence in utilizing it for academic activities during the period they are students and after graduation.

Information and Communication Technologies (ICTs) are used for English Language learning. The radio, for example has become a means through which English Language skills could arguably be said to have been transmitted for several years. Technological advancement has widened the scope of ICTs for English Language learning to include computers, mobile phones, satellite communications systems, the Internet, etc.

Fernández (2005) considered that ICT offers the language teacher a relatively safe environment (so far as the teacher "feels" confident with the media). In addition, a blog, a website in which there is an online personal journal with opinions, reflections, comments and often hyperlinks given by the writer has been reported to be a valuable tool for language learners due to the rising popularity of online language teaching and the growth of new multimedia literacy, which encourage collaborative and intercultural learning (Meskill and Anthony; and Guth and Helm, cited in Metaferia (2012)).

The regular growth of global access, ease of use, resilience and functionality of ICT tools have made them to become appealing and interesting as flexible educational devices that can be used in institutions of learning (Tochukwu & Hocanin, 2017). In addition, Amutha and John Kennedy (2015)

posited that essential to the provision of education for all through the utilisation of electronic tools are teachers who have been trained professionally to educate, improvise and integrate emerging technologies into the paradigm of education. However, before the teachers will deploy electronic technologies in learning, they must be aware of these devices and would have developed enough interest to enable them master and be proficient in the use of these tools themselves.

Statement of the Problem

With the ethnically heterogeneous nature of Nigeria, proficiency in English Language - the nation's lingua franca is imperative. ICTs have proved tremendously helpful in advancing activities of mankind in various segments of life. Undoubtedly, ICTs are involved in the learning of the English Language. The level of awareness of students on the enhancement of their English Language skills through ICTs could affect the extent at which they are utilized for this purpose. Also, the degree of successful application of these tools for English Language learning could be affected by the nature of interest of the students. These two factors – awareness and interest, are being considered in this study.

Objectives

The main objective of this study was to examine if students were aware of and were interested in deploying ICTs to improve their grasp of the English Language. Specifically, the study sought to find out if students were:

i.   Aware of ICTs that could be used in developing their English Language skills.

ii. Interested in enhancing their proficiency in English Language through ICTs.

iii. Aware of ICT products and services through which they could develop their English Language capabilities.

Research Questions

The following research questions were looked into:

1. Are the students aware that they can use ICTs to learn English Language?

2. Are the students interested in deploying ICTs for English Language learning?

3. Are the students aware of ICT products or services through which their English Language capabilities can be improved?

Research Design

This study made use of the descriptive research design. Surveys are excellent for scientific research since they present to all the participants a uniform stimulus, thus getting rid of the researcher's own biases (Sincero, 2012).

Population and Sample

Data were collected from Nigeria Certificate in Education (NCE) students of Federal College of Education (Special), Oyo, Nigeria. As at the time data was gathered for this study, the 300 Level NCE students were then on teaching practice, the 200 Level students have not re-opened for the 2014/2015 academic session, while the 100 Level students were on ground for academic activities. Hence, this research was concentrated on the 100 Level students. Purposive and convenience sampling techniques were employed to draw the sample from the population. 161 students received copies of the questionnaire. 10

of the copies of the questionnaire shared were either not properly filled or were not completely filled while 151 were completely filled and were used for the study.

Instrument

The research instrument was a structured questionnaire which was designed and used to collect responses from the respondents. It comprised of Sections A and B. Section A was used to gather the gender and department of each respondent. Section B contained 12 research items. The respondents were to indicate either Yes or No to each of the research items. The research instrument was validated by giving it to some researchers for constructive criticisms. Both researchers and a research assistant administered the questionnaire to the respondents. Simple percentage was used for data analysis.

Data Presentation

Data used for this study are presented
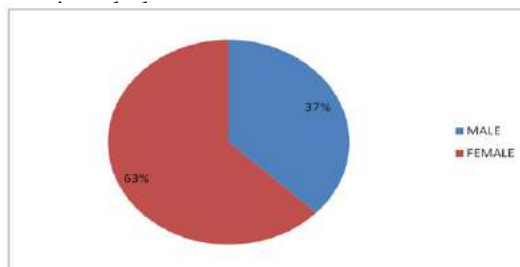
Figure 1: Gender of Respondents

Table 1
Department of Respondents

No	Department	Frequency	%
1	English Language	31	20.53%
2	Arabic	7	4.64%

3	Social studies	36	23.84%		12	Agricultural Education	19	12.58%
4	Yoruba	1	0.66%		13	Music	1	0.66%
5	French	1	0.66%		14	Business Education	8	5.30%
6	Biology	10	6.62%		15	Geography	1	0.66%
7	Chemistry	7	4.64%		16	Theatre Arts	4	2.65%
8	Computer Science	7	4.64%		17	Adult and Non-Formal Education	3	1.99%
9	Integrated Science	8	5.30%		18	Primary Education	2	1.32%
10	Mathematics	2	1.32%			Total	151	100.00%
11	Physical and Health Education	3	1.99%					

Table 2

Responses on the Questionnaire Items

No.	Item	YES Frequency	%	NO Frequency	%
1	I am not aware that I can improve my reading skills in English Language through the use of ICTs.	47	31%	104	69%
2	I know I can write better English if I involve ICTs in learning English Language.	140	93%	11	7%
3	I cannot recognize any positive effect ICTs can have on my spoken English.	56	37%	95	63%
4	I realize that by using ICTs I will understand English Language better.	143	95%	8	5%
5	I am interested in developing my reading skills in English language through ICTs.	141	93%	10	7%
6	I will give attention to any opportunity whereby I am to enhance my written English through the use of ICTs.	135	89%	16	11%
7	Upgrading my English Language speaking skills through ICTs does not appeal to me.	37	25%	114	75%

8	I am not interested in using ICTs to improve my English Language understanding capability.	28	19%	123	81%
9	I am aware of an existing ICT product or service through which I can improve my reading skills in English Language.	109	72%	42	28%
10	I do not know of any ICT product or service that I can use to make me write better English.	71	47%	80	53%
11	I can identify an ICT mechanism that I can use to help elevate my spoken English.	109	72%	42	28%
12	I cannot acknowledge that an ICT exists by which I can improve my English Language comprehension.	66	44%	85	56%

Discussion of Findings

Demographic data presented in Figure 1 and Table 1 shows that the respondents cut across gender (male [37%] and female [63%]) and departments (18 different departments).

Discussion on the research questions are given below.

Question 1: Are the students aware that they can use ICTs to learn English Language? Research items 1, 2, 3 and 4 were used to answer this question. 31% of the respondents were not aware that they can improve their reading skills in English Language through the use of ICTs while 69% were. 93% of the respondents knew that they can write better English if they involve ICTs in learning English Language but 7% did not know. 37% of the respondents could not recognize any positive effect ICTs can have on their spoken English but 63% could. 95% of the respondents realized that by using ICTs they would understand English Language better but 5% did not realize this. Results from Items 1, 2, 3 and 4 shows that

majority of the respondents were aware of the importance of ICTs in the development of their English Language skills. This is commending since ignorance would have connoted that they were not acquainting themselves with contemporary issues that affect their academic advancement.

Question 2: Are the students interested in deploying ICTs for English Language learning? This question was answered using items 5, 6, 7 and 8 from the questionnaire. 93% of the respondents were interested in developing their reading skills in English Language through ICTs but 7% were not interested. 89% of the respondents would give attention to any opportunity whereby they were to enhance their written English through the use of ICTs but 11% would not. Upgrading English Language skills through ICTs does not appeal to 25% of the respondents but it does to 75% of them. 19% of the respondents were not interested in using ICTs to improve their English Language understanding capability while 81% were interested. Data from items 5, 6, 7

and 8 depict that majority of the respondents were interested in using ICTs to improve their English Language skills. Students are basically youths and by observation they have affinity for ICTs, especially the modern ones. These results are heartening. They indicate that whenever the students have the opportunity in utilizing ICTs to enhance their English Language skills the interest they have would propel them to embrace the available technology.

Question 3: Are the students aware of ICT products or services through which their English Language capabilities can be improved? Research items 9, 10, 11 and 12 were used to handle this question. 72% of the respondents were aware of an existing ICT product or service through which they could improve their reading skills in English Language while 28% were not. 47% of the respondents did not know of any ICT product or service that they could use to make them write better English but 53% of them knew. 72% of the respondents could identify an ICT mechanism that they could use to help elevate their spoken English while 28% could not. 44% of the respondents could not acknowledge that an ICT exists by which they could improve their English Language comprehension but 56% of them could. These responses show that majority of the respondents were aware of ICT products or services through which they could use to enhance their English Language proficiency. This is a welcome development. Since they were aware of these educational channels, with the right commitment, and removing any circumstance beyond their control, they would know the product or service to utilize towards developing their English Language skills.

Conclusion

On the basis of the results gathered in this study, the following conclusions are hereby made:

1. The students acknowledged the significance of ICTs in English Language learning. As this is encouraging, Oye, A.Iahad, and Ab.Rahim (2012) opined that ICT skills are highly essential in order to partake in knowledge societies and economies. Thus, the students should not only know the importance of ICTs for English Language learning but should possess the necessary ICT skills with which to learn English Language.

2. The students were interested in deploying ICTs to advance their English Language capabilities. Hence, integrating ICTs into English Language learning may possibly not pose a big challenge to the language learners.

3. The students were aware of ICT products or services through which their English Language skills may be enhanced. Despite this, some attention may be required in enlightening the students on ICT products or services through which they could enhance their written English and English Language comprehension.

Recommendations

Based on this study, the following recommendations are given:

1. The English Language lecturers should enlighten those students who may not be aware of how ICTs can positively influence their English Language proficiency on the benefits of ICTs to English Language learning. The assertion of Ntongieh (2016) that Information

and Communication Technology Assisted Learning provides solution to academic problems and should be fully implemented towards teaching and learning of English Language supports the value of ICT to English Language learning.

2. Group assignments on English Language should be given that would involve the utilization of ICTs. This way the students will learn to be good team players and the academically brighter ones will support the weaker ones in learning. Tochukwu and Hocanin (2017) buttressed the benefit of teamwork by stating that usage of ICT devices in education and activities are very useful for enhancing learners' collaborative and cooperative proficiencies.

3. During the teaching-learning process, the teacher should demonstrate how ICTs can be used in enhancing English Language skills. A variety of ICTs should be employed at the appropriate periods in the lessons and in the curriculum. Ntongieh (2016) declared that Information and Communication Technology Assisted Language Learning (ICTALL) can positively impact on performance of students if effectively engaged in the teaching/learning process of English Language. Thus, the role of the teacher here in deploying ICT is crucial.

4. The teachers should be abreast with latest developments in the ICT industry as regards specific ICTs and English Language learning. They should through different teaching methods involve the students on these ICTs towards helping them to hone their English Language

skills. According to Drigas & Charami (2014), the use of ICTs in English Language learning and teaching is an area not yet fully delved into; however, both learners and teachers have a lot to gain and to offer through their use.

5. The lecturers should identify and match specific ICT products and services with the corresponding English Language skills they are to handle and expose these to the students. For instance, to develop speaking skills, Samuel & Pulizala (2014) opined that students can make use of multimedia software that has such features as dialogues, role plays and debates whereby they are able to be involved actively. In addition, Drigas & Charami (2014) declared that each specific kind of ICT whether it is online reading, CBDs (computer-based dictionaries) aimed towards vocabulary enhancement or computer-based speaking for enhancing literacy skills offer learners of our times with important knowledge, not just language-based but also multimedia-based ones.

6. Notwithstanding any knowledge the students may have, they should be guided on the proper deployment of ICTs for English Language learning. Ghasemi & Hashemi (2011) stated that the role of teachers as guides or facilitators (which occurs when ICT is integrated in the teaching-learning process) is to aid the learners to be able to select, access, evaluate, organise and store information.

7. Limitation of access to and efficient utilization of Information and Communications Technologies may be caused by poverty (UNESCO Institute for Lifelong Learning, 2014). Thus,

it is necessary that these technologies are been provided for learning by not only the government but the parents/guardians of the students, the private sector and well-spirited individuals/organisations.

Rfeferences

Amutha, S. & John Kennedy, S. (2015). Awareness on technology based education by the student teachers. *International Journal of Scientific and Research Publications, 5* (9), 1-4. Retrieved January 25, 2018 from http://www.ijsrp.org/research-paper-0915/ijsrp-p4516.pdf

Drigas, A. & Charami, F. (2014). ICTs in English Learning and Teaching. *International Journal of Recent Contributions from Engineering, Science & IT (iJES), 2* (4), 4-10. Retrieved March 14, 2018 from https://www.researchgate.net/publication/268870208_ICTs_in_English_Learning_and_Teaching

Fernández, V. L. (2005). ICT and Language Learning. Retrieved 07-05-2015 from http://educationforum.ipbhost.com/index.php?showtopic=3309

Ghasemi, B. & Hashemi, M. (2011). ICT: New wave in English language learning/teaching. *Procedia Social and Behavioral Sciences, 15*, 3098-3102. Retrieved March 14, 2018 from https://ac.els-cdn.com/S1877042811007981/1-s2.0-S1877042811007981-main.pdf?_tid=2a7c656c-73bc-4573-af7d-e9dc3fcda267&acdnat=1521034593_961f992cdb190bd0b20c0e635a0a7095

Metaferia, T. F. (2012). Using blogs to promote reflective language learning. *Journal of Language and Culture, 3* (3), 52-55. Retrieved May 07, 2015 from http://www.academicjournals.org/article/article1379498774_Metaferia.pdf

Ntongieh, N. E. N. A. (2016). ICT and English Language Teaching and Learning in Cameroonian Secondary Schools. *Global Journal of HUMAN-SOCIAL SCIENCE: G Linguistics & Education, 16* (6 (1)), 26-34. Retrieved March 13, 2018 from https://globaljournals.org/GJHSS_Volume16/2-ICT-and-English-Language.pdf

Oye, N. D.; A.Iahad, N. and Ab.Rahim, N (2012). Acceptance and Usage of ICT by University Academicians Using UTAUT Model: A Case Study of University of Port Harcourt, Nigeria. *Journal of Emerging Trends in Computing and Information Sciences, 3* (1). Retrieved April 08, 2015 from http://cisjournal.org/journalofcomputing/archive/vol3no1/vol3no1_6.pdf

Samuel, S. & Pulizala, R. (2014). Role of ICT in English language teaching. *International Journal of Innovative Research and Development, 3* (12), 282-284. Retrieved March 14, 2018 from http://www.ijird.com/index.php/ijird/article/download/58550/45776

Sincero, S. M. (2012). Advantages and Disadvantages of Surveys. Retrieved May 07, 2015 from Explorable.com: https://explorable.com/advantages-and-disadvantages-of-surveys

Tochukwu, I. U. & Hocanin, F. T. (2017). Awareness of students on the usefulness of ICT tools in education: case of EMU. *IOSR Journal of Research and Method in Education (IOSR-JRME), 7* (2), 96-106. Retrieved January 25, 2018 from http://www.iosrjournals.org/iosr-jrme/papers/Vol-7%20Issue-2/Version-3/N07020396106.pdf

UNESCO Institute for Lifelong Learning (2014). *Harnessing the Potential of ICTs for Literacy Teaching and Learning: Effective Literacy and Numeracy Programmes using Radio, TV, Mobile Phones, Tablets, and Computers.* Hamburg: UNESCO Institute for Lifelong Learning. Retrieved 02-04-15 from http://unesdoc.unesco.org/images/0022/002295/229517E.pdf

EXPLORING B.ED CURRICULAR ACTIVITIES TO CREATE PROFESSIONALLY COMPETENT SCIENCE TEACHERS

Dr Joseph Kacharayil*

Abstract

In order to mould such a teaching community who could keep pace with the changing nature of science education the teacher education courses should play a major role. The major objective of the study is to explore the Two Year B.Ed. Programme, with a view to help teacher educators to create professionally competent science teachers. A professionally competent set of science teachers could be created by teacher educators by having a mastery over the Content of curricular frame work of the B.Ed course. The various activities and programmes such as, induction, group discussion, seminar, project, brain storming, etc are useful for developing professionally competent science teachers.

Key words: *Curricular Activities, Professional Competencies, Science Teachers, Induction, Brain storming, etc.*

Introduction

The science teaching and learning have undergone drastic changes over the years .The important features observed in the school classroom during recent years showcases a paradigm shift based on the philosophy of constructivism. Learning became activity based, process oriented, environment friendly, life oriented and suitable to the nature of the learner. There is a provision for construction of knowledge in a natural manner through learning activities. In the classroom there is opportunity for individual and group learning. Every student fixes an objective and works towards the achievement of it. Students compete with each other and learn; students co-operate and work towards the achievement of a common goal. Therefore the teachers need to give equal importance to knowledge, process skills and attitudinal, creative and application

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domains in the processes of learning. In order to mould such a teaching community who could keep pace with the changing nature of science education the teacher education courses should play a major role. B.Ed curriculum should be transacted to the future teachers in such a way as to make them professionally competent. The teacher educators of science optional have to explore the B.Ed curricular activities in various dimensions for effective transaction.

Objectives of the study

To explore the Two Year B.Ed. Programme, with a view to help teacher educators to create professionally competent science teachers, in terms of

1. Curricular frame work for preparing professionally competent Teachers
2. Important academic activities essential for curricular transaction
3. Participatory/activity based group work for classroom interaction

The   challenges in effective science teaching and learning are numerous The content of the Teacher Education Curriculum has been designed keeping in view the envisioned profile of a teacher who manages teaching learning resources, acts as a facilitator and counsellor for the students and mobilizes community resources for larger benefit of the society.

1. Content of curricular frame work of Teachers

The content in the Two Year B.Ed. Programme Curriculum Framework of NCTE for preparing professionally competent teachers who are more reflective, versatile and effective, to be key actors in shaping and leading educational change. It comprises three broad curricular areas stretching across four semesters (i) Perspectives in Education, (ii) Curriculum and Pedagogic Studies, and (iii) Engagement with the Field. It consists of four courses for Enhancing Professional Capacities (EPC) of the student teachers. Tasks and Assignments run through all the courses. Two weeks shall be utilized for collecting data for the given tasks and assignments. The One week School Acclimatization Programme /Initiatory School Experiences in school is to acclimatize student teachers to the school and its environment, understanding children, teaching-learning process and school dynamics. School Internship program in Teacher Education ensures the professional preparation of prospective teachers. The practical courses collectively come under the broad category Engagement with the Field. The practical courses are classified into three groups namely College based, Community based and School based Practical**.** These practical courses enable student teachers to engage with children and their contexts, schools and their contexts

Students shall practice and refine teaching skills through micro teaching practices and their integration through Link practice. They have to prepare micro lessons, and receive feedback from peers and teacher educators. Video Lesson of teacher educators/experts have to be observed by student-teachers individually or in groups and observation notes has to be prepared. Student teachers shall prepare peer discussion lesson plans in groups and keep a record of them .Student-teachers should observe demonstration lessons format by faculty/

teacher educators and school mentors. Criticism classes should be arranged optional wise. Student teachers shall have dual role in this activity. As performers they have to conduct a macro lesson for duration of 40 minutes .As observers they need to observe the criticism lessons taken by their peers. The institutional faculty and students are actively engaged in developing instructional materials for quality enhancement in the teaching-learning process.

2. The important academic activities essential for curricular transaction

Transaction of the courses is to be done using a variety of approaches and through innovative teaching-learning strategies like problem solving, group discussion, panel discussion, seminar reading, debates, brain storming, practical and project work, discovery method, competency based teaching, contextual transaction of the contents, demonstration-cum-discussion, participatory/activity based group work, case studies, practical exercises, innovations, individual/ group assignment, peer interactions, student-student interactions, and student-teacher interaction, face to face contact, tutorial / library work, research approach etc.

Induction Programme

Classes start with an induction programme to familiarize the students with each other, everyone introduce themselves and come to know each other, followed by the introduction of the faculty members. The teacher educator gives necessary instructions to be followed in the institution, explains the code of conduct, informs the student teachers about the rules and regulations, institutional responsibilities, responsibilities of students towards institution and gives details about Curriculum.

Group Discussion

A discussion is a teaching technique that involves an exchange of ideas with active learning and participation by all concerned. Discussion is an active process of student-teacher involvement in the classroom environment. Discussion allows a student to discover and state a personal opinion perspective in spite of merely repeating what the teacher or text has already presented. Besides promoting meaningful personal interaction, discussion promotes a variety of learning, including content, skills, attitudes and processes. It is an appropriate way to improve both the thinking and the speaking skills of students

Seminar

The term seminar as an academic instruction generally refers to a structured group discussion that may proceed or follow a formal lecture. It may be either in the form of essay or a paper presentation. The skills of reading, writing, and speaking are well developed and well combined through the seminar method. It is stimulating and motivating. It is an effective mode of testing student's understanding and knowledge in the subject. It develops the sense of responsibility, co-operation as well as the power of self-reliance and self- confidence. Seminar promotes the power of going deeper into the matter. Questioning power is developed through participation in this process of intellectual model. Seminar as a meeting for giving and discussing information is an important part of professional life.

Debate

Debate is a method of presentation especially suitable to controversial themes and for developing certain skills like logical arguments and weighing evidence in students. The participating students could be divided into two groups, one for the proposition and the other against it. Each group finds a leader. In the first instance, the teacher can act as a moderator. In the subsequent debates, pupils decide upon a moderator from among themselves. It is frequently regarded as outgrowth of discussion. The purpose of class room debate is not prove or disprove an issue but to associate with the merits of opposite argument. The teacher may guide the students to make an analysis of various points presented and encourage them to look in to their weakness in terms of unanswered questions in the debate. This develops argumentative abilities. Co-operative relationship can be established. It promotes leadership qualities. In debate the participants engage in reflective thought when anticipating or answering the arguments of the opposing side.

Brain Storming

It is a fine strategy for generating ideas. It is used to generate a wide variety of creative ideas concerning a problem in a short period of time. The major purpose is to stimulate thinking and bring out the range of ideas. Students are encouraged to come up with exciting and radical ideas without the fear of criticism or evaluation. It does not include critical judgement and/ or editing of ideas. For encouraging creative thinking co-operation, brainstorming is an excellent strategy. One can use brainstorming when a lot of ideas are needed, or when the time is limited.

Role play

It is a conscious attempt to examine the various roles played in actual life.It generates valuable data about human relationships and interactions and exposes learners to the dynamics of a situation Role play provides opportunities to bring out hidden attitudes and unexpressed feelings before the group for review thus facilitating a process of checking one's perceptions and attitudes without fear of rejection. This facilitates practice of new behaviours leading internalisation of learning

Student-Student Interaction

The interactions among students in the classroom are a normal and essential part of the learning process that influences the lifelong learning habits of students. Classes where students have opportunities to communicate with each other help students effectively construct their knowledge. By emphasizing the collaborative and cooperative nature of scientific work, students share responsibility for learning with each other, discuss divergent understandings, and shape the direction of the class. More student-focused class provides multiple opportunities for students to discuss ideas in small groups and may support a whole class discussion.

Panel Discussion

A panel discussion in the classroom is a technique to teach students to work as a group. It is also designed to improve skills of research, logical organization of ideas as well as the ability to present these thoughts clearly and effectively. In a Panel Discussion,

a selected group of students act as a panel, and the remaining class members act as the audience. The panel informally discusses selected questions. A panel leader is chosen and he/she summarizes the panel discussion and opens discussion to the audience.

Demonstration-Cum-Discussion

Demonstrating is the process of teaching through examples or experiments. For example, a science teacher may teach an idea by performing an experiment for students. A demonstration may be used to prove a fact through a combination of visual evidence and associated reasoning. A teacher can combine demonstrations with discussion. Demonstrations are similar to written storytelling and examples in that they allow students to personally relate to the presented information. Memorization of a list of facts is a detached and impersonal experience, whereas the same information, conveyed through demonstration followed by discussion becomes personally relatable. Demonstrations help to raise student interest and reinforce memory retention because they provide connections between facts and real-world applications of those facts.

Problem Solving

Problem solving is a process of raising a problem in the minds of the students in such a way as to stimulate purposeful reflective thinking for arriving at a rational solution. The children get training in the art. of problem solving in actual life situations. When the pupils are confronted with the problems of life they should be able to solve them properly. Through this pupils get valuable social experience. This method of interaction is a time consuming process.

It is difficult on the part of the teacher to organize the content of science according to needs of the pupil

Tutorial

In the learning process a tutorial session can be used for transferring knowledge. It is more interactive and specific than other method Tutorial seeks to teach by example and supply the information to complete a certain task. This helps to improve the output of learning Tutorials are used to promote students further understanding of the facts, concepts, theories, procedures etc. They provide opportunities for encouraging students to develop those critical and creative thinking skills and forms of expression and argument.

Practical Work

Many practical work carried out in lessons are designed to allow pupils to make connections between the concrete things and the most abstract ideas or theories that may account for the observations they make. By doing practical work pupil understands of the theories and abstract concepts of science can be better understood and visualized. Practical work helps to generate interest and motivation for the subject. Moreover practical work helps to promote the development of skills such as observation, inferring, investigating and hypothesizing. Individual laboratory work or whole class practical work is included in the practical work in secondary science.

Case Study

Case study aims at studying everything about something rather than something about everything. It is characterized by the

detailed , realistic , concrete description and explanation of a case. The complete and detailed study of a case may involve the use of observation , interview , medical examination ,use of various psychological tests etc. Information from all sources is pooled together in a sequential order to prepare a comprehensive case-history and locate the causes of maladjustment if any.

Peer Tutoring

Peer means someone belonging to the same group. Peer tutoring is an intervention in which students work in pairs to master academic skills or content. Peer tutoring can involve partners who are the same or different ages.

Student Seminar Series & Seminar Presentation

Student Seminar Series and Seminar presentation can be done in a cyclic manner in the classroom. During the seminar, students present the theme paper before the whole group leading to discussion, moderated by the Chairperson.

Individual Projects and Presentations

Individual projects are assigned to each student to familiarize the methodology of project preparation and presentation. Students learn to prepare slide presentations of their own topics of interest. A project also helps to get a practice of using digital resources at classroom interactions.

Remedial Teaching

Remedial Intervention helps the student's specific needs. It makes use of one to one instruction, small group instruction, written work or computer based work. It helps the pupils who need pedagogical

assistance. It is usually given once or twice in a week

Club Activities

Participation in various club activities plays a significant role in science learning It enable the students to organize, monitor and supervise the activities of the Club activities. It includes activities like Club inauguration, Field Trip, Science Fair visit, Educational Talk, Day Celebrations, Science Exhibition, Classes on selected topics etc. Such activities of the club help to provide opportunity for hands on experience and experiential learning for the science students and teachers to stimulate interest in Science and inculcate scientific spirit among students.

Action Research

The purpose of action research is to enable the teachers and others to find out solutions to felt problems on the basis of their own investigations, as this process will immediately point out the remedial measures to be adopted. The main objective of action research is to improve the methods and process of education in classrooms. A teacher conducts action research to improve his own teaching and is carried out along with classroom practices.

Project work

It is a learning experience provides opportunity to the students to explore information or data obtained from various sources using multi dimensional strategies and critically, creatively and scientifically apply it to real life situations. It is a task to be completed within a particular time under the guidance of a teacher and develops critical thinking among the learners

Social and Educational survey

Social and Educational survey can be used to collect and compile information related to social, economic, political, cultural and educational aspects of students, parents and all other stakeholders of education Survey can be used to obtain feedback and information needed for teachers, students, parents, administrators and other professionals for future planning

Assessment &Evaluation

Self evaluation is done by the students themselves. Student evaluation, peer evaluation and teacher educator evaluation help the students to acquire the skills of evaluation. Project Work, Group Presentations Contextual transaction of the content, participatory/activity based group work, discussions on reflective journals, student-teacher interaction and interactions with the community etc are practiced and assessed during curricular transaction

3.   Participatory /Activity based group work for classroom interaction

In the classroom the students actively participate in group activities and encourage other's participation in all learning process Tasks are usually to be completed by the learner within the classroom interaction time. Individual and group assignments are also prepared on selected topics as part of their studies. Activity based group work for classroom interaction are; Group discussion, Debate, Drawings, Report analysis, Note making, Worksheet completion, Storytelling, picture analysis, Labelling the diagram, experimentation and observation, Experimenting and procedure writing, Table completion, Completion of diagram,

Completion of Ven diagram, Comparison Observing permanent slides, Making observation report, Video observation, Documentary Observation, Grouping and table preparation, Analysis of reading report, Flowchart making, Worksheet assessment, Taking notes, preparing short notes, Chart/model observation and Project work

Participation of Students

The students individually participate in all classroom activities and group discussion, seminar, student seminar, seminar presentation, individual projects, club activities and other academic programmes and activities of the institutions effectively. They participate in group activities and encourage other's participation in all learning process

Curriculum approach

A learning process based on the idea of constructivism serves as a foundation of the curriculum. Constructivism that looks upon learning as an active mental process that provides for construction of knowledge. Every child is born with natural ability to learn from the surrounding through sense organs

Learning experiences and Learning process

The freedom to employ suitable learning experiences which are learner oriented rests with the teacher. Each learner constructs knowledge by linking it with his previous experiences It occurs at individual level through meaningful societal interventions. Learning is made effective through multi-sensory experiences which consider various learning styles, learning pace etc. Learning becomes more effective through co-operative

learning in an environment conducive for co-operation

Learning outcomes

Learning outcomes are the ideas, concepts, skills, attitudes, and values to be acquired by a learner during various stages of school education. Knowledge of the learning outcome is essential to plan the teaching learning process and evaluation

Outcome focussed Assessment Approach

The process of analysing what the learner has acquired after the transaction of content is called Assessment of learning. Assessment that takes place along with learning and the feedback that is provided learning can be termed as assessment for learning. There is a process of correction that involves a critical self analysis of concepts and awareness gathered through learning and by internalising the changes. This can be considered as self assessment. In the process assessment opportunity should be given for self assessment, peer assessment and teacher assessment

Tasks and Assignments

Tasks are usually assigned piece of work to be completed by the learner within the classroom interaction time. Task will contain some form of input data and an activity which is in some way derived from the input and the learner individually or in group complete it within the stipulated time. Tasks will also have goals, roles for teachers and learners. Individual and group assignments (a specified task) are also prepared on selected topics as part of their studies.

Pedagogic Task as activities within classrooms

Designing Pedagogic task suitable for curricular transaction is one of the important components in classroom interaction. A science teacher can use suitable resource materials that can act as an input for the completion of the task

Teacher Planner

A teacher planner must be prepared to plan learning activities and to make continuous evaluation more scientific. It should contain planning of learning activities including situations of evaluation, strategies, tools etc

Activity log

It is an important document required for assessment of the cognitive area of the learner. The creativity of the learner, thought processes, language skills, socio-emotional domain etc is reflected in the activity log. It should contain details like various strategies adopted for the transaction of the lesson, prior planning made by the learner, interventions made by the teacher at various stages of activities details of learning outcome/ product formed etc are to be recorded in the activity log

Reflection Note of the Teacher

The teacher prepares his own reflection based on the evaluation of learning process/ activities. It consists of the extent to which the transaction the content of the lesson is successful. It helps to plan better next time to ensure every child in the class to involve in the lesson. Follow up activities at the time

of transaction or after transaction helps in re-designing the existing activities or designing new activities to make the learners more participatory in future

Importance of mentoring

A teacher becomes a mentor and facilitator who helps in achieving learning outcome. The teacher as mentor should make interventions in the role of an experienced predecessor. An effective mentor can bring out the hidden talents of a child. Mentoring can be manifested as a process which caters to personality development and creates interest in learning. Notes related to mentoring experiences should be recorded in the cumulative record. All the teachers in the school should act as mentors of students.

Conclusion

A professionally competent set of science teachers could be created by teacher educators by having a mastery over the Content of curricular frame work of the B.Ed course. A teacher educator should use activities for curricular transaction judiciously, use digital resources for transacting the content, select teaching–learning resources appropriate to the content, nature and requirement of the learners and implement activity based group work for classroom interaction. The teacher should also be proficient in using innovative assessment approaches. The professional competencies acquired by the teacher helps to extend the competencies in his professional practice in an actual classroom situation. The competencies related to planning of instruction, innovative child centred teaching learning strategies for classroom interaction, assessing the performance of the learner and organising various activities are the essential competencies required for a science teacher

References

NCTE. (2009). National Curriculum Frame Work for Teacher Education Towards Preparing Professional and Humane Teacher. New Delhi.

Geetha M S (2014) Will the new National Curriculum Frame Work for Teacher Education2014 improve the quality of Teacher Education?, Journal of Studies in Teacher Educati*on 7(2),9-15*

LIFE SKILLS AND SOCIAL MATURITY OF HIGHER SECONDARY STUDENTS

Dr. Sajith Lal Raj S.T.*

Abstract

In the present investigation the investigator adopted normative survey method. A sample of 400 Higher Secondary Students was selected from 10 Schools from Kanyakumari district. Life Skills Inventory and Social Maturity Scale were used as the tool. Pearson's Product Moment Correlation Coefficient was used as the statistical technique. The result showed that there is Correlation between Life Skills and Social Maturity among the variables and back ground variables such as Gender, Locale and Type of Schools.

Key word: *Life Skills, Social Maturity, Higher Secondary school Students*

Introduction

Life skill education is a value addition programme for the youth to understand self and to assess their skills, abilities and areas of developments. Life skills education allows the youth to get along with other people, able to adjust with their environment and making responsible decisions. Life skills are abilities for adaptation and positive behaviour that enables an individual to deal effectively with the demand and challenges of everyday life. In particular life skills are a group of psycho social competencies and interpersonal skills. It helps people to make decisions, communicate effectively and develop coping self management skills to lead healthy and productive life. Life skills are defined as those abilities, attitudes, knowledge and behaviours that must be learned for success in society.

Life Skills are problem-solving behaviour appropriately and responsibly used in the management of personal affairs (Curtiss and Warren). The development of Life Skills Education is an important part of personality development, which can be beneficial for all your adults (Rao). According to the Darkar Framework for Action successful education programs require not only healthy and well nourished students but also motivated students in order to ensure basic education of quality for all.

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Life skills constitute continuum of knowledge and aptitudes that are necessary for a person to function independently and to avoid interruption of the employment experience (Brolin). Life skills includes self-development, interpersonal and family relationship development, effective communication skills, job and financial skill development, problem solving skills, empathy, decision making, time management, self awareness, creative thinking, critical thinking and list goes on. The investigator only selected five skills they are,

a.　Problem solving skills,
b.　Decision making skills,
c.　Self awareness skills,
d.　Time management skills, and
e.　Effective communication skills.

Nature has been operating very successfully for billions of years, long enough to have matured a very high degree. It would seem prudent to look to nature for guidance in our social system. Socrates said of happiness: "A man's happiness or well being depends directly on the goodness or badness of his soul. No one ever wishes for anything but true good (i.e. true happiness). But men miss their happiness because they do not know what it is. For real good they mistake things that are not really good (e.g. Unlimited wealth or power). Men need to know true good and not confuse it with anything else, so as to keep form using strength, health, wealth or opportunity wrongly. If a man has this knowledge he will always act on it, since to do otherwise would be to prefer misery to know happiness. Knowledge of good is the knowledge of which it is impossible to make an ill use, the possession of it is a guarantee that it will always be used.

According to Kenneth A. Dilts (1996), each of us has our strength and weakness. We depended on other members of our species to complement and reinforce our weakness with their strengths, and vice versa.

Social maturity is a level of social skills and awareness that an individual has achieved relative to particular norms related to an age group. It is a measure of the development competence of an individual with regard to interpersonal relations; behaviour appropriateness, problem solving and judgments. Social maturity encompasses attainment in several domains, including independent functioning; effective interpersonal communication, interaction and responsibility (Raj.M 1996).parents and teachers must be very particular in maintaining interpersonal relationship with the young students in order to challenge their energy in right direction (Greenbegr,1995). Social maturity does not require the formal joining of a group. It is a personal commitment that each individual must develop an attitude that will influence their daily lives. It requires a very informal atmosphere of self help groups where the individuals discuss and share their problems and their achievement with each other within the framework of caring and sharing without the fear of being exploited.

Objectives

1.　To find out whether there is any correlation between Life Skills and Social Maturity of Higher Secondary School Students.

2.　To find out whether there is any correlation between Life Skills and Social Maturity of Higher Secondary School Students with respect to,

a) Gender

b) Locale

c) Type of Schools

Hypotheses

1. There is no correlation between Life Skills and Social Maturity of Higher Secondary School Students with respect to,

    a) Gender

    b) Locale

    c) Type of Schools

Methodology

The investigator used normative survey method and simple random sampling

technique to select the sample. The sample consisted of 400 from Higher Secondary School Students Kanyakumari district. Life Skills Inventory and Social Maturity scale was used for collecting data from the sample. Pearson's Product Moment Correlation Coefficient was used as the statistical technique.

Results

Objective 1

To find out whether there is any correlation between Life Skills and Social Maturity of Higher Secondary School Students..

Table 1

Correlation between Life Skills and Social Maturity of higher secondary students

Variable Correlated	Sample	N	r- value	Verbal Interpretation
Life Skills and Social Maturity	Total sample	400	0.26	Low correlation

The above table 1 shows that a coefficient of correlation between the variable Life Skills and Social Maturity for the total sample is found to be 0.26 according to H.E.Garrett, 1969. There is a low correlation between the variables in higher secondary students. Hence the hypothesis, 'there is no correlation

between the Life Skills and Social Maturity of higher secondary students is rejected.

Hypothesis 1a

There is no correlation between Life Skills and Social Maturity of Higher Secondary School Students gender with respect to gender

Table 2

Correlation between Life Skills and Social Maturity of higher secondary students with respect to gender

Variable Correlated	Sample	N	r- value	Verbal Interpretation
Life Skills and Social Maturity	Male	215	0.15	Slight correlation
	Female	185	0.31	Low correlation

The above table 2 shows that a Coefficient of Correlation between the variable Life Skills and Social Maturity for the male sample is found to be 0.15 according to H.E.Garrett, 1969. There is a slight correlation between the variables in higher secondary students. Hence the hypothesis, 'there is no correlation between the Life Skills and Social Maturity of higher secondary students with respect to gender is rejected.

The above table 2 shows that a Coefficient of Correlation between the variable Life

Skills and Social Maturity for the female sample is found to be 0.31 according to H.E.Garrett, 1969. There is a low correlation between the variables in higher secondary students. Hence the hypothesis, 'there is no correlation between the Life Skills and Social Maturity of higher secondary students with respect to gender is rejected.

Hypothesis 1b

There is no correlation between Life Skills and Social Maturity of higher secondary students with respect to locale.

Table 3

Correlation between Life Skills and Social Maturity of higher secondary students with respect to locale

Variable Correlated	Sample	N	r- value	Verbal Interpretation
Life Skills and Social Maturity	Rural	184	0.16	Slight correlation
	Urban	216	0.32	Low correlation

The above table 3 shows that a Coefficient of Correlation between the variable Life Skills and Social Maturity for the rural sample is found to be 0.16 according to H.E.Garrett, 1969. There is a slight correlation between the variables in higher secondary students. Hence the hypothesis, 'there is no correlation between the Life Skills and Social Maturity of higher secondary students with respect to locale is rejected.

The above table 3 shows that a Coefficient of Correlation between the variable Life Skills and Social Maturity

for the urban sample is found to be 0.32 according to H.E.Garrett, 1969. There is a low correlation between the variables in higher secondary students. Hence the hypothesis, 'there is no correlation between the Life Skills and Social Maturity of higher secondary students with respect to locale is rejected.

Hypothesis 1c

There is no correlation between Life Skills and Social Maturity of higher secondary students with respect to type of schools.

Table 4

Correlation between Life Skills and Social Maturity of higher secondary students with respect to type of schools

Variable Correlated	Sample	N	r- value	Verbal Interpretation
Life Skills and Social Maturity	Government	170	0.18	Slight correlation
	Aided	230	0.29	Low correlation

The above table 4 shows that a coefficient of correlation between the variable Life Skills and Social Maturity for the government sample is found to be 0.18 according to H.E.Garrett, 1969. There is a slight correlation between the variables in higher secondary students. Hence the hypothesis, 'there is no correlation between the Life Skills and Social Maturity of higher secondary students with respect to type of schools is rejected.

The above table 4 shows that a coefficient of correlation between the variable Life Skills and Social Maturity for the aided sample is found to be 0.29 according to H.E.Garrett, 1969. There is a low correlation between the variables in higher secondary students. Hence the hypothesis, 'there is no correlation between the Life Skills and Social Maturity of higher secondary students with respect to type of schools is rejected.

Conclusion

There is Correlation between Life Skills and Social Maturity. Hence we have to give importance to life skills of an individual and it leads to Perfect Social maturity. If a person hurts you, and you try to understand their situation and don't hurt them back.

References

Borlin, D. E., (1989). Life Centered Career Education: an Approach.(3rd ed.). Reston, V A: The Council for Exceptional Children. Retrieved from http//www.ericdigests.org/pre-92/life.html

Curtiss, P., & Warren, P. (1973). The dynamics of life skills coaching. Department of man power and imagination, Prince Albert, SKpp239

Greenberg, B. (1995). The measurement and structure of psychological maturity. Journal of Youth and Adolescence. Vol (4).

Rao, U. N. B. (2003). From Adolescents to Achievers. In Employment Newspapers, 8-14, Nov.2003, India

Raj, M (1996). Encyclopedia Dictionary of Psychology and Education. New Delhi: Anmol Publication

OCCUPATIONAL STRESS OF EMPLOYEES WORKING IN IT SECTOR

Dr. Resmi R*

Abstract

Work place stress is the harmful physical and emotional response that can happen when there is a conflict between job demands on the employee and the amount of control an employee has over meeting. The major objective of the study is to analyze the level of occupational stress among the employees working in IT sector. The study found that, Occupational stress is found higher among female employees compared to male employees, and among different occupational stress variables Work Overload contributes more to the occupational stress among male employees compared to female employees. In the age of highly dynamic and competitive world, man is exposed to all kind of stress that can affect them in every day of life. The growing importance of interventional strategies is felt more at organisational level.

Key Words: *Occupational Stress, Employees, IT Sector, Technology, etc.*

Introduction

The seventeenth century was called the age of enlightment, the eighteenth, the age of reason, the nineteenth the age of progress and the twentieth, the age of anxiety which leads to stress. The path to meaningful and satisfying way of life has never been easy, but it seems to have become increasingly difficult in modern times mainly due to four fold explosions viz, knowledge explosion, explosion of technology, population explosion and the explosion of expectations. Science and technology seems to be the hallmark of the day. Rapid and revolutionary change in science and technology is an indispensable aspect of the day. Adjustment problem, the inability to find its worth etc are net result of this change. The complexity of modern times makes a man lagging their self concept and in turn this will cause severe adjustment problems. We can otherwise call it as stress. Stress is a fact of every day life. Here the investigator gives more important to work place stress in the commercial aspect.

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Stress is the mental or physical condition that can result from any kind of demand on our body and system, the problem of workplace stress is universal. 'Work place stress' is the harmful physical and emotional response that can happen when there is a conflict between job demands on the employee and the amount of control an employee has over meeting these demands.

Significance of the study

With the expansion of technology more people are accepting technology related areas as their working field. Studies prove that the work related stress is comparatively more in these field because of fear of job redundancy, lay offs due to uncertain economy, increased demands for overtime due to staff cutbacks. Economic factors that employees are facing in the 21st century have been linked to increased stress levels. Researchers and social commentators have pointed out that the computer and communications revolutions have made companies more efficient and productive than ever before. This boon in productivity however has caused higher expectation and greater competition, putting more stress on the employees. Stress is a fact of everyday life. And in fact studies indicate that mild levels of stress actually facilitate efficiency probably because they help us to mobilize our energy and resource and motivate us to do our best. But   today's changing and competitive environment, stress level increasing both with the workers and the mangers.

Stress has become an issue of concern for all especially the working force of IT sector. This is because of the work pressure, night shift, 24/7 work timings etc. Though the pay offered is more, employees find it difficult to manage the stress faced by them. Stress should not be too high or too low. An optimum level of stress is beneficial. Too low and too high stress reduces productivity and increases pressure to the management. As human beings are put in hectic condition at times, stress is an unavoidable consequence. Stress level is increasing both with the workers and the managers .In this context, the present study is undertaken to address specific problems of IT employees related to occupational stress.

Objectives

1. To analyze the level of occupational stress among the employees working in IT sector with respect to their gender.

2. To find out the level of occupational stress of employees with respect to Work Over load.

Hypotheses

H1 There is significant difference between male and female employees in their level of stress.

H0 There is no significant difference between male and female employees in their level of stress with respect to Work Over load.

Methodology

Method adopted for the study

Normative survey method is adopted for the study. It is more realistic than experimental studies because it investigates studies in their natural settings. It is essentially cross sectional,

Area of study

The population selected for this particular study is related to two major IT centers, one

the capital city Thiruvanathapuram and the other industrial city Ernakulam in the state of Kerala. Five companies from Techno Park at Thiruvanathapuram and 5 companies from Info Park at Ernakulam.

Sample size

The sampling population of this research includes 60 employees of IT sector, out of which 30 employees are male and 30 are female. The research followed the systematic random sampling method. The population belongs to both male and female in an age group of 20-40.

Data collection

Both primary and secondary data were used for the study. For the purpose of the study primary data was collected through structured questionnaire from the respondents directly. The first part of the questionnaire collects the general information about the respondents and the second part was directed towards finding out different aspects fulfilling the objective of the study.

Tool of data collection

A multi dimensional analysis of job stress and coping patterns of employees is the

primary focus of this research. The variables selected under the methodology are:-

1. Multiple Supervision
2. Work Overload
3. Lack of Supervisory Support
4. Feeling of Inequality
5. Lack of Adequate Resource
6. Mismatch of Job Requirement and capability
7. Mismatch of Job Requirement and Reward.

Statistical techniques used

Mean and standard deviation were used to analyze the level of stress and 't' test was used for testing the hypotheses.

Analysis and Results

Objective 1

1. To analyze the level of occupational stress among the employees working in IT sector with respect to gender

Hypothesis

1. There is significant difference between male and female employees in their level of stress

Table 1

Occupational stress among the employees working in IT sector with respect to gender

Sl No	Variables	N	Male		Female		t	Df
			Mean	SD	Mean	SD		
1	Total stress	60	32.96	3.6	38.33	5	1.79**	58

** Indicates significance at 0.05 level.

The table (Table I) indicates there is significant difference between male and female employees in their level of

stress. The table (Table-1) indicates that the female employees have high mean score(38.33) in relation to occupational

stress compared to male employees (32.96) in this particular research. This shows female employees have high level stress compared to male employees. So the hypothesis is accepted at 0.05 level of significance.

Table 2
Occupational stress of employees with respect to work over load

Variables	Male Employees		Female Employees		t-value	Df	p
	Mean	SD	Mean	SD			
WO	6.66	1.00	6.83	1.03	2.15	58	0.01

The table (Table-2) indicates, there is significant difference between male and female employees in their level of stress with respect to Work Overload at 0.01 level of significance. So the hypothesis rejected .

Objective 2
1. To find out the occupational stress of employees with respect to work over load.

Hypothesis
1. There is no significant difference between male and female employees in their level with respect to work over load.

Table 3
Mean, SD and t- values of stress scores of respondents with respect to selected occupational stress variables

Variables	Male Employees		Female Employees		t-value	Df	p
	Mean	SD	Mean	SD			
MS	4.63	.65	6.23	.93	2.08	58	0.01
WO	6.66	1.00	6.83	1.03	2.15	58	0.01
LSS	4.96	.75	4.26	.50	1.05	58	>.05
FI	3.50	.14	7.00	`1.15	2.02	58	0.01
LAR	4.60	.40	5.76	.53	1.16	58	>.05
MJC	4.90	.72	4.23	,46	1.96	58	0.10
MJR	3.71	.30	4.02	.40	1.00	58	>.05
Total stress	32.96	3.96	38.33	5.00	1.79	58	0.01

The above table (Table 2) indicates that among the selected occupational stress variables Work Overload (WO) has the highest mean value of (6.66) followed by Lack of Supervisory Support (4.96) in the male employees. In the female employees category, Feeling of Inequality(FI) has the highest mean value with (7.00) followed by Work Overload (6.83) .In the male score, Feeling of Inequality, Mismatch of Job

requirement and Reward have the lowest mean score 3.50 and 3.71 respectively. According to female category, is match of Job requirement and Reward (4.02) has the lowest mean score followed by Mismatch of Job requirement and Reward (4.23)

Major Findings

1. There is significant difference in the level of occupational stress between male and female employees in IT sector.
2. There is significant difference in the level of occupational stress between male and female IT employees with respect to work overload.
3. Occupational stress is found higher among female employees compared to male employees.
4. Among different occupational stress variables Work Overload contributes more to the occupational stress among male employees compared to female employees.
5. Feeling of Inequality and Work Overload are more stressful variables to female employees.
6. Work Overload is the common stress variable among male and female employees.
7. In both case Mismatch of Job requirement and reward is the less stressful variables.

Recommendations

To reduce the negative consequences of stress more effort on the part of policy makers practitioners and organisational management are recommended. Some of the suggestions which were collected through questionnaire are listed below.

1. Take adequate steps to re design jobs based on the abilities and capacities of employees.

2. Ensure an organisational climate with carrier planning and carrier growth to ensure the retention of talented employees.
3. Cut back excessive hours, which direct the employees physical fitness.
4. Provide counseling on work related and personnel problems and support from a team of welfare health and counseling staff.
5. Adequate role clarification to be made whenever necessary to eliminate role ambiguity.

Conclusion

In the age of highly dynamic and competitive world, man is exposed to all kind of stress that can affect them in every day of life. The growing importance of interventional strategies is felt more at organisational level. This particular study was intended to find out the level of different variables which affect the occupational stress.

References

Beehr,T.A and Newman, J.E.(1978). Personal psychology,31.pp.665-669.

Chermiss (1980), Freudenberger (1977, 1980), Occupational stress,pp345-56

Green and Walke (1988) Staff burnout: "Job stress in human services",pp78-97

Khan et.al. (1964). "Organisational Stress: Studies in role conflict and ambiguity. Wiley, Newyork.

Kumar, Dileep M . (2000). "A study on job stress of nationalized and non nationalized bank employees". Journal of human relations, volume 56, pp 43-66.

Selye, H. (1974). Stress without stress. "Harper and Row publications USA

THE INFLUENCE OF ELECTRONIC MEDIA ON HEALTH AWARENESS PROGRAMMES IN KERALA WITH RESPECT TO SOCIO-DEMOGRAPHIC VARIABLES

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Abstract

The study aims to bring awareness among the adolescences of Kerala regarding the effects of electronic media use and physical and mental health are interrelated. The longer they spend time with the electronic media the worse there physical and mental health will be.   Electronic media have positive and negative impacts on society. Electronic media in its every form is a big source of mass communication. It produces direct effects on the minds of common people. It is a great source of providing entertainment as well. The help us to identify the positive and negative impulses created by the electronic media.

Key words: *Electronic media, income, gender, educational qualification.*

Introduction

In our modern society, we have come to rely heavily on information technology and computers for everything from work and production, to information and entertainment. It is hard to imagine life without the electronic equipment that is characteristic of our way of life. The position of television, radio and other electronic media like telephones and computers shifted to the top in people's day to day life and social relationships. Electronic media have positive and negative impacts on society. Electronic media in its every form is a big source of mass communication. It produces direct effects on the minds of common people. It is a great source of providing entertainment as well.

As media has its positive effects, it has also some negative effects on society. Student's and young boys and girls waste their precious time in browsing websites on the internet and cable net. The time spends

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with the electronic media increases day by day. The entertainment provided by the electronic media destroys the moral values and due to these crimes are increased. The role of media is very important in the modern world. It is a source which is directly related to the moral values of the society.

Using electronics today is so much a part of our daily lives we hardly think of the way the world would be without electronics. Everything from cooking to music uses electronics or electronic components in some way. Children and teenagers carry mobile phones with them everywhere and use them to take and send pictures, videos, and to play music. They send text messages on the cell phone to other phones and to their home computers. Literally thousands of everyday devices that we use constantly make use of electronics technology in order to operate. Use of electronic devices reduces the effort and work load of human being. It increases the attraction towards electronic devices.

Some problems may arises due to the over use of electronic devices. It leads to the high energy consumption, e-waste, health problems etc. With the use of electronic devices Residents and businesses are asked to take steps to conserve electricity where possible. Conserving power is essential and all efforts can affect the power available in homes and communities. Turn off lights in rooms that are not being used, Use CFL bulbs and/or only turn on lights that have CFLs installed, Unplug electrical appliances and chargers when they are not in use (including computers, tablets, printers and televisions) etc are some energy conservation measures.

Recognizing the importance of Health in the process of economic and social development and improving the quality of life of our citizens, the Government has initiates many health awareness programs. They adopts a synergistic approach by relating health to determinants of good health viz. segments of nutrition, sanitation, hygiene and safe drinking water.

Background and Context

The use and importance of technology is on a rise in our society. As a result of it there is utilization of large amount of electronic devices. The socio-economic development scenario in Indian States has remained intimately related to the extent of exposure to media. Radio and television are powerful media and their reach has almost covered between 90 and 98 per cent of the geographic area of the country. it was found that in the States of Goa,. Delhi, Kerala, Andhra Pradesh, Jammu, Karnataka and Tamil Nadu, the range of women who listen to radio programmes was between 60 and 70 per cent. The viewership of television was high in all the States of the country. Before the advent of television, watching cinema was an important medium of entertainment and dissemination of information. Each cinema house in India was expected to screen a documentary film in order to increase awareness of government programmes among the viewers. However, after the advent of V.C.P. and V.C.R., the cinema is gradually losing its attraction and attention. A sharp variation in visiting cinema was observed among various States of the country. The various electronic devices which aids in household works also doubled over the decade.

The imperative role of Panchayati Raj Institutions (PRIs) in the context of dual responsibilities and controls in public

health care system has made a positive impact on rural health scenario of Kerala also. Hospital Management Committee (HMC) under the leadership of the elected head of the concerned local government plays a vital role in the management of a public health institution in Kerala. While the chairperson of HMC is elected head of the local government, Medical Officer of the respective Public Health Institution is its convener. HMC is a democratically constituted body that provides a platform for elected representatives and officials of PRIs/ Municipalities and health officials to work jointly for the efficient functioning of PHIs. This experience can be shared with some of the Indian States where Rogi Kalyan Samities are not functioning as democratically run system. Similarly, there is a good scope for mobilizing local resources for the implementation of public health projects under the initiatives of Panchayati Raj Institutions in Indian States.

Kerala has a strong Panchayati Raj system with a total of 1165 Panchayati Raj Institutions that consist of 999 Gram Panchayats, 152 Block Panchayats and 14 District Panchayats. Subsequent to the enactment of the Panchayati Raj Act various Public Health Institutions were transferred to the three-tier Panchayats in Kerala in February 1996. Kerala has a total of 2706 Public Health Institutions that comprises of 1272 Allopathic, 864 Ayurvedic and 570 Homeopathic Institutions. Gram Panchayats were given Dispensaries, Primary Health Centers and Sub Centers, Maternity and Child Welfare Centers, Immunization and other preventive measures, Family welfare programme and Sanitation programme. Community Health Centre and Taluk Hospitals were placed under Block Panchayath. Management of District Hospitals, setting up of Centers for care of special categories of handicapped and mentally disabled people and co-ordination of centrally and state sponsored programmes at district level were given to District Panchayath.

Need and Significance

Man has a nature of curiosity. He always engages with doing something unique. In the past century they explored in many field. It was a time when a man could hardy think about the unbelievable development that is within reach now.

Media is a means of transmitting the message, thought, opinion and view point. In the beginning, man used horse and other animal to send the message to the receiver. It took time to deliver the message and the probability of spoiling the message was on the top. Now man has entered the age of science and technology. They have explored the farther space. They have got a tremendous achievement in many field as well as Electronic media. None can avoid and escape from it. It is prevailing profound effects on advertisement, education, information, politics and other social activities. It has entirely changed the mode of advertisement. Different types of tricks are employed to attract attend the valuable customers. Sometimes an innocent client is really confused in making the decision. On the other hand it gives extensive options in selecting the desired product. Electronic media has revolutionized the information system. So many TV channels in the country

and internet websites justify the importance and advantages of electronic media where everyone has a freedom to exchange his view point clearly.

Heath awareness is the basic concept of living a healthy life that makes sure that you do not get sick and are able to live an optima life style. It is a comprehensive understanding of heath It builds knowledge, skills and positive attitudes about health. There is a large number of health awareness programmes regarding healthy food, exercise, nutritional assessment and guidance, lifestyle advice, physical working environment, psychological we being, seep and stress and tips about alcohol and smoking.

One of the key components of health awareness programmes is to provide every village in the country with a trained female community health activist 'ASHA' or Accredited Social Health Activist. Selected from the village itself and accountable to it, the ASHA will be trained to work as an interface between the community and the public health system. ASHA should primary be a literate woman with forma education u to class eight. She will have to undergo series of training episodes to acquire the necessary knowledge, skills and confidence for performing her spelled out roles. ASHA will be a heath activist in the community who will create awareness on heath and its social determinants and mobilize the community towards local heath panning and increased utilization and accountability of the existing health services. On the basis of the above facts, it is necessary to conduct a social survey on two different aspects-the use of Electronic Media and its influence in Heath Awareness Programmes.

Objectives

1. To analyses the general information covered under the sample selected for the study.
   a) Based on the age group.
   b) Based on monthly income.
   c) Based on educational qualification.
   d) Based on the gender.
2. To know the government initiatives regarding health awareness programmes.
3. To analyses the influence of electronic media in our society.
4. To identify energy conservation measure adopted by respondent.

Methodology

1. Sample

In order to conduct the survey on *The Influence of Electronic Media on Health Awareness Programmes in Kerala*, we choose different panchayat in Kottayam and Idukki districts for the study. This survey is conducted by taking 210 families from the chosen panchayats.

2. The Tool Study

In the survey the tool used is questionnaire consisting of four sections.

   a. General information
   b. Personal information
   c. Related questions
   d. Declaration

Procedure

It take five day to complete the survey24-29 August 2015 .the investigator collect informations by visiting each family around our locality. The sample consist of 892 persons.

Analysis and Findings

The important findings in the survey are tabulated below.the tabulations are done according to different objectives.

Objective 1: To analyses the general information covered under the sample selected for the study.

Based on the age group

Table1
Age wise analysis of the sample

Age	No. of sample	% of sample
Below 5	44	5.6
6-15	110	14.0
16-35	213	27.2
36-55	235	30.0
56-75	132	16.0
Above75	49	6.2

Based on the analysis , it is clear that major portion of the sample comes under middle aged group. About 30% are old aged.27% are middle aged. only 5% is below 5 year old.

Based on monthly income

Table 2
Analysis of monthly income

Monthly income	No. of sample	% of sample
Below2,000	23	10.9
2,000-5,000	35	16.5
5,000-10,000	30	14.2
10,000-25,000	50	23.6
25,000-40,000	48	22.74
40,000-60,000	17	8.0
Above 60,000	8	3.8

From the above analysis it is clear that majority of the fafily has monthly income between 10,000-25,000.

Based on educational qualification

Table 3
Analysis of educational qualification

Educational qualifications	No. of sample	% of sample
Illiterate	24	2.6
Primary	103	11.5
High school	240	26.9
Higher secondary	172	19.2
Degree	174	19.5
PG	47	5.2
Professional	63	4.0
Any other	59	6.6

From the above observation it is clear that most of the people has high school education, a few of them have PG and professional educational qualification

Based on the gender

Table 4
Gender wise analysis

Gender	No. of sample	% of sample
Male	415	46.50
Female	477	53.47
Total	892	100

Objective 2: To know the government initiatives regarding health awareness programmes.

Table 5
The government initiatives regarding health awareness programmes

Question	YES (%)	NO (%)
Participation of people in health awareness programme	45	55
vaccination	98	2
Visit Asha workers	64	36

From the analysis it is clear that 55% of people are not participated in health awareness programme. 98% of the people get proper vaccination. 64% of the people get services of Asha workers.

Objective 3: To analyses the influence of electronic media in our society.

In order to anlyse influence of electronic media we decided to take no. of electronic devices in each home . the datas are tabulated below,

Table 6
Analysis of the use of electronic media

Electronic device	no	%
T V	210	100
Fan	210	100
Iron box	209	99.8
Mixie	205	97.9
Fridge	197	46.1
Inverter	91	43.3
Motor	208	99
Computer	173	82.3
Washing machine	98	46.5
Induction cooker	134	63.8
AC	21	10

From the above observation it is clear that the modern society spend more money, interest and time for electronic media.

Objective 4: To identify energy conservation measure adopted by respondent

Table 7
Energy conservation measure adopted with respect to time

Time (hour)	No. of sample	%
1	131	14
2	217	24.32
3	482	54.03
More than 3	102	11.4

From the above table it is clear that most of the people spend 3 or more than 3 hour in front of TV.

Implications

• The use of up- dated electronic devices may cause the increased usage of amount of electricity. So authority should give the instruction to reduce the use of out dated electronic device.

• Switch off the electric device when not used.

• Make awareness program me about effective use of electric device.

• Government should take step to make sure that the awareness programme go in a systematic way. For this government should appoint a monitoring committee.

• Government should give proper directions to ASHA workers regarding about distribution of vaccines.

• Government should frequently analyze the health status of the people.

• Appropriate measures to prevent the spreading of epidemic.

- Proper awareness programme should conducted in the Panchayat level regarding health awareness.

Conclusion

From the above survey, it is clear that the electronic equipments such as television, fan, and iron box constitute 100% in all families. The use of AC is found to be very low .The usage of inverter is 43%. The use of electronic media makes people's life more convenient and colorful compared with the past. It is evident that people spend more time in watching television and computers, especially children. The conclusion is that TV can be used as a means of conditioning, but not for educating**.** A community health awareness programme has a positive effect on knowledge of community workers and thereby in the mothers. It has a direct effect on improving the health of every one. It promotes physical, mental, and emotional development. From the survey, it is obvious that 45% people participate in health awareness programmes. Majority are aware about providing proper vaccinations. ASHA workers visit about 54% families.

Reference

Payel Sen. (2002). Media In Development Communication, Vikas Publication.

Barry Loom. (2002). The Vaccine Book Academic Press, Newyork.

Donald F. Roberts. (2000). Trends in Media Use Stanford University.

http://digitalcommons.unl.edu/libpphilprac/744/

REFLECTIVE PRACTICE: A KEY TO LANGUAGE EDUCATION

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Abstract

The study is an attempt to identify and suggest solutionsto the problems of barriers in the process of language acquisition. The paper is based on an experimental study which highlights the need for incorporating various techniques used in reflective practices in different disciplines as well. The instructional design Reflective Language Acquisition Model (RLAM) provides ample exposure to the linguistic development of the students who learn English language. The phases of the instructional design is made up of theories of reflective practices and the linguistic principles of learning a language.

Key words: *Reflective practices,Task completion, Comprehensibility, Fluency, Pronunciation, Vocabulary, Language control, etc.*

Introduction

Reflection is a vital component in language acquisition. It is an aid in learning as well as in the process of teaching. Without reflection or conscious awareness(Laskaris, 2016) of language elements, an individual cannot utilize the skills and sub skills of a language newly learnt. Reflective practices have become instrumental in improving ones practices in different professions and in new learning.In order to revamp language education, reflective practices are highly useful in developing language competencies.

Theories related to reflection emphasises that Reflective learning allows the learners to step back from their learning experience. Reflective teaching helps the teachers to equip themselves to become a professional in career. The syntax of the instructional design RLAM is framed on the linguistic principles of learning a language which hasa deep influenceon theentire syntax. The method adopted for the study is pretest posttest single group design. There are a lot of benefits (Davies, 2012) and advantages in applying reflective practices.

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- Increased learning from an experience or situation
- Promotion of deep learning
- Identification of areas for improvement about personal and professional strengths
- Identification of educational needs
- Acquisition of new knowledge and skills
- Further understanding of own beliefs, attitudes and values
- Encouragement of self-motivation and self-directed learning
- Act as a source of feedback
- Possible improvements in confidence

Reflective Practices in various disciplines

Generally reflective practices are being used for improving professional expertise. Now it has been used in various disciplines such as engineering, drama, art, teacher education, social work, nursing etc… Reflective strategies can improve rational thinking and metacognition. For examples, in engineering it has been widely applied in designing and redesigning the structure and devices. In social work, it is considered that reflective practice can help in developing professionalism, knowledge and critical reflection and analysis(Knott &Scragg, 2016).

Main theories incorporated in RLAM

Borton (1970)

Terry Borton's reflective model comprised of three questions which ask the practitioner – What, So what, and Now what? By analysis, the description of the situation leads to the scrutiny of the situation and construction of knowledge takes place. Eventually, the practitioners will be able to

identify the ways they can improve(Skinner & Mitchell, 2016).

Donald Schon(1983)

Theory of Schon explicitly mentions two types of reflective practices namely reflection in action and reflection on action. The former denotes the ongoing analysis of the activity in which the learner is involved. The later tells about the process of thinking back on what the learner has done in order to find out how ones knowing in action may have contributed to a particular result.

Graham Gibbs(1988)-Reflective cycle

The reflective cycle of Graham Gibbs consists of six distinct stages to assist in structuring reflective process. They are: Description, Feelings, Evaluation, Analysis, Conclusions, and Action plan('Reflective practice', 2018, Wikipedia .org)

David Kolb (1984)– Experiential Learning

The learning cycle consists of four stages, they are: Concrete Experience(A new experience is provided), Reflective Observation(any inconsistency between the experience and understanding is examined), Abstract Conceptualisation(Reflection provides new idea or modification takes place in the existing abstract concept), Active Experimentation(applies the learnt concept to the world around)(Kolb & Kolb, 2012)

Reflective Rational Enquiry (2014) Lawrence Wilkes

An integrated approach views reflection as a cognitive process that bridges the theory practice gap, rooting theory in practice. Critical theory supports rational discursive reflection, validated through equal consensus and socio-political context. It considers

how practitioners can move towards critical reflection within an egalitarian applied learning approach, to challenge a widening theory-practice divide.(Lawrence-Wilkes &Ashmore, 2014)

Linguistic Principles behind the model

There are a few linguistic principles that can be integrated with the reflective strategies to improve the language skills of a learner. The following principles can be incorporated to the metacognition process which can accelerate the acquisition of a person's linguistic ability.

1.   *Learning from natural contexts*

As the child learns his/her mother tongue in natural way, he/she has to learn a second language. The natural learning follows the pattern LSRW, through which the learner becomes more confident using language in variety of contexts. Similar to the pattern of learning mother tongue, the child has to be exposed to the sounds of a language first. In reflective practice strategies also the learner is provided exposure the sounds of the language first.

2.   *Learning by doing/practice or drill*

Any kind of learning a language, practice is the most important aspect in acquiring skills of that particular language. Without practice no learning can be done. This is a process of learning by doing, without doing, no learning is possible. Focusing on all the skills of a language, the learner is supposed to learn by imitating the sounds, reading the text etc..

3.   *Vocabulary learning*

One of the major objectives of learning a language is to acquire mastery over the vocabulary of the language. Vocabulary is considered as the life blood of a language. Lack of vocabulary is a hindrance which leads to gaps in the communication process.

4.   *Imitation of sounds and words/oral approach*

The learner is supposed to provide maximum exposure to the skills of language by which the learner can be familiar with the sounds of that language. This familiarity leads to the appropriate production of sounds. This is a process that takes place by imitating the first sounds of language.

5.   *Purposefulness*

The teacher has to create a need for communication in the language class, if there is no purpose the learner may not be motivated to communicate in the language. It becomes as basic a requirement in personal as well as in the professional life. Agood teacher of English teaches the learner how effectively the language can be used in various situations.

6.   *Mutuality*

For any communication there should be a sender and a receiver, here in language learning, the interaction between the teacher and the taught is essential for exchange of ideas. The mutual bond between the teacher and the learner helps to augment the acquisition of language skills.

7.   *Selection and gradation*

At the outset of the language learning, the teacher has to carefully select and grade them the vocabulary and the structure of the language in order to facilitate the learning. Grade the simple sounds to complex sounding words. If grading does not

take place, the learner may feel some gaps in the process of learning.

8. *Correlation with life*

Correlation of the subjects with the life of the learner makes the learning, a meaningful activity and a productive one. The duty of the language teacher is to encourage the students to use words and structuresof the day to day life. Examples from the life of the learners can be used to promote their curiosity and interest in learning a new language.

9. *Maxims of Teaching*

Maxims are general truths from real life experiences. The language teacher has to follow maxims like, from known to unknown, simple to complex, concrete to abstract etc.. This is a psychological approach which helps to make language learning as an easier process.

10. *Motivation and Interest*

The motivation and interest of the teacher towards language he/she teaches, plays a crucial role in developing interest among the learners of English. If the teacher is able to enjoy teaching the language,most probably the learner also will enjoy learning. Motivation can be promoted by providing reinforcements. Interest can be generated by using teaching aids, questioning, sustaining novelty in teaching.

Objectives of the study

The following are the major objectives of the present study.

1. To study the effect of RLAM for acquiring oral communication skills in English.
2. To compare the effect of RLAM for improving the components of oral

communication skills namely, Task completion, Comprehensibility, Fluency, Pronunciation, Vocabulary and Language control in English

Method of the study

The investigator employed the pretest posttest single group design with a sample of 30 pupils studying in Standard Eight. The experimental group was taught by using RLAM in a language lab setting for one hour for 21 days.At the beginning of the study,the investigator conducted a pretest by giving a topic to speak for two minutes and it was recorded with a recorder to quantify the dependent variable namely task completion, comprehensibility, fluency, pronunciation, vocabulary and language control in English. During the treatment, everyday a topic of their interest was given in the framework of RLAM to the subjects for speaking. A rubric, based on the 6 components of speaking skills for evaluating the components of speaking was applied to evaluate speaking skill. The investigator attempted to compare the pretest and post test scores using t-test. Pretest and post test questions were different but the level of difficulty was same. The study is based on the following three phases.

1. The first phase involved pretesting of the pupils of the experimental group through administration of oral test.
2. The second phase involved the treatment, which consisted of instruction based on the RLAM over a period of three weeks to the experimental group.
3. In the third phase, a posttest on oral communication skills was administered to the pupils to test the effect of RLAM on oral communication skills.

The syntax of RLAM

Phase I -Experiencing content – The instructor provides clear instructions about how to communicate on a particular topic, and gives a model talk(exposure to the language)

PhaseII-Imitating for acquisition – Here learner starts speaking on the topic, the instructor jots down the corrections required.

Phase III -Reflecting the learning group

process – Every student is given chance to analyse the wrong expressions/usages made by himself and others.

Phase IV -Analysing the thinking strategy – Everyone has to write down on what they have learnt that day newly.

Analysis and Interpretation

Table 1
The pretest - post test scores of the components of Speaking by using RLAM in the treatment

Components of Speaking	Tests	N	Mean score	Standard Deviation	t- test for Equality of Means		
					t	df	Sig.
Task Completion	Pre	30	1.31	0.65	4.50	29	.000
	Post	30	1.84	0.53			
Comprehensibility	Pre	30	1.34	0.62	3.464	29	.002
	Post	30	1.79	0.59			
Fluency	Pre	30	1.1	0.53	2.773	29	.011
	Post	30	1.5	0.59			
Pronunciation	Pre	30	1.36	0.38	1.904	29	.071
	Post	30	1.57	0.52			
Vocabulary	Pre	30	1.16	0.42	3.215	29	.004
	Post	30	1.50	0.58			
Language Control	Pre	30	1.20	0.53	1.501	29	.148
	Post	30	1.36	0.64			
Speaking Overall	Pre	30	7.47	3.13	4.43	29	.002
	Post	30	9.56	3.45			

Data and Results of Test of Significance of the Difference in the Pretest Post-test scores of Speaking of RLAM in Experimental group

From the table it is clear that the means of the pretest scores of the students in the experimental group is higher

than the means of the posttest scores of Experimental group for the components of Speaking Skills in English namely Task Completion, Comprehensibility, Fluency, Pronunciation, Vocabulary, Language Control and overall scores on Speaking Skills in English.

The obtained t values for speaking skills are Task Completion ($t_{(29)}$ = 4.50, p < .05), Comprehensibility ($t_{(29)}$ = 3.464, p < 0.05), Fluency ($t_{(29)}$ = 2.773, p < .05), Vocabulary ($t_{(29)}$ = 3.215, p < .05),and the overall scores on Speaking Skills in English ($t_{(29)}$= 4.43, p < .05) are significant at 0.05 level. Whereas Pronunciation ($t_{(29)}$ = 1.904, p > .05), Language Control ($t_{(29)}$ = 1.50, p > .05)are no significant at 0.05 level.

It is obvious that there is a significant difference between the means of the pretest scores of the components of Speaking Skills namely, Task Completion, Comprehensibility, Fluency, Pronunciation, Vocabulary, Language Control and overall scores on Speaking Skills in English. The result of the study agrees with the findings of Netto(2008) who found that the intervention of Reflective thinking strategy of teaching is more effective than conventional method of direct instruction for the achievement in chemistry, for improving metacognitive awareness and in the achievement of affective variables among secondary school students.

Major Findings of the Study

There is significant difference in pretest and post test scores in task completion component of oral communication skills among the secondary school students. Therefore, RLAM is effective in developing the skill of elaborating content appropriately in English corresponding to the theme given.

There is significant difference in pretest and post test scores in comprehensibility component of oral communication skills among the secondary school students.

Therefore, RLAM is effective in developing the skill of expressing content comprehensively in English requiring no interpretation on the part of the listener.

There is significant difference in pretest and post test scores in fluency component of oral communication skills among the secondary school students. Therefore, RLAM is effective in developing the skill of expressing a content continuously in English speech with few pauses or stumbling.

There is significant difference in pretest and post test scores in vocabulary component of oral communication skills among the secondary school students. Therefore, RLAM is effective in developing the skill of expressing words continuously in English with adequate and accurate use of vocabulary.

There is no significant difference in pretest and post test scores in pronunciation component of oral communication skills among the secondary school students. The reason might be that the time for the experiment conducted was not sufficient enough to develop pronunciation of a foreign language with an entirely different pattern of the production of sounds.

There is no significant difference in pretest and post test scores in language control component of oral communication skills among the secondary school students. The reason might be that the time for the experiment conducted was not sufficient enough to develop control of basic language structures of a foreign language of different basic structures.

Conclusion

The instructional design RLAM is a simple solution for teaching new or foreign languagesto a group of students having only the verybasic fundamental skills of language, provided that, the teacher should have the mastery over the language as well as the knowledge of the linguistic principles of learning a language. All teachers who teach English should have basic proficiency in English (National Curriculum Framework, 2005). If the teacher is capable of using this effectively, miracles can happen in the speedy acquisition of the language. It is suggested thatthe teachers teaching L2,can fruitfully utilize the strategies of reflective practicesfor teaching second or a foreign language.

References

Davies, S. (2012). Embracing reflective practice (Vol. 23). https://doi.org/10.1080/14739879.2012.11494064

Gibbs, Graham (1988). Learning by doing: a guide to teaching and learning methods. London: Further Education Unit. ISBN 1853380717. OCLC 19809667. Retrieved 10 November 2011.

Knott, C., & Scragg, T. (Eds.). (2016). Reflective practice in social work. Learning Matters.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

Kolb, A. Y., & Kolb, D. A. (2012). Experiential Learning Theory. In N. M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 1215–1219). Boston, MA: Springer US. https://doi.org/10.1007/978-1-4419-1428-6_227

Laskaris, J. (2016, July 14). 3 Methods to Incorporate Reflective Practice in eLearning. Retrieved 30 May 2018, from https://www.efrontlearning.com/blog/2016/07/reflective-practice-elearning.html

Lawrence-Wilkes, L., & Ashmore, L. (2014). A Critical Framework. In The Reflective Practitioner in Professional Education (pp. 56-67). Palgrave Pivot, London.

National Curriculum Framework. (2005). New Delhi: NCERT.

Schön, Donald A. (1983). The reflective practitioner: how professionals think in action. New York: Basic Books. ISBN 046506874X. OCLC 8709452

Sibu G. Netto (2008) Effectiveness of reflective thinking strategy of Teaching on certain cognitive and affective Variables among secondary School students, Ph.D. thesis, Mahatma Gandhi University, Kottayam.

Skinner, M., & Mitchell, D. (2016). 'What? So What? Now What?' ApplyingBorton and Rolfe's models of reflexive practice in healthcare contexts. Health and Social Care Chaplaincy, 4(1), 10-19.

Wikipedia contributors. (2018, April 11). Reflective practice. In Wikipedia, The Free Encyclopedia. Retrieved 12:17, June 1, 2018, from https://en.wikipedia.org/w/index.php?title=Reflective_practice&oldid=835922498

SELF -REGULATION, SELF-CONCEPT AND ACHIEVEMENT MOTIVATION OF UNDER ACHIEVERS AND OVER ACHIEVERS IN CHEMISTRY AT SECONDARY SCHOOL LEVEL

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Abstract

In this world of knowledge at fingertip, the students are expected to be more resourceful than what they understood concepts for further application in day-to-day life. The students are trying to create innovative things by themselves than following instructions from others. But in the formal system of education teachers are playing their role with curriculum. Many of the students are achieving more than their expected potential (Over achieving) and there is another group who are interested in multi-media environments are achieving less than their expected potential (Under achievers). Self-regulation, self-concept and achievement motivation of these groups of students are to be studied in detail for effective transaction of curriculum. The present study is an attempt to find out whether Self -Regulation, Self-Concept and Achievement Motivation are capable of discriminating under and over achievers in Chemistry at secondary school level. The investigator compared these variables of students belonging tounder and over achievers in Chemistry using t-test. The study found that the variables Self -Regulation, Self-Concept and Achievement Motivation are capable of discriminatingunder and over achievers in Chemistry.

Key words: *Self-Regulation, Self-Concept, Achievement Motivation, Under Achievers, Over Achievers, etc.*

Introduction

Researchers in the field of education are interested in conducting researches related to discrepant learners as the learning strategies used in the classrooms are more learner centred than teacher centered. This is because the philosophy of teaching following in new curriculum is constructivism. Social constructivism is also considered to a great extent in India in NCF 2005. In Kerala the KCF 2007 stresses the importance of social

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constructivism. Issue based learning and outcome based learning are also given due importance in the educational transaction process. As the emergence of IT @ school project and introduction of Samagra Siksha Abhiyan a tsecondary level, the teachers are equipped well with the use of ICT facilities in Kerala. In the academic year 2018-19, the Govt. of Kerala is trying to provide ICT facilities and smart classrooms in secondary schools.

In the modern world students are expected to learn things by constructing their own knowledge. But parents and teachers are always complaining that "this student is highly able, but not achieving upto his potential". Sometimes the statement will be in the other way " He/She is hard working and achieving beyond his/her potential" In education both these categories of students are making challenges to the teachers. In this context the teachers found it very difficult to identify the reasons behind these kind of extreme performances. By knowing the reasons behind these discrepancy in their performance they can scaffold properly to achieve to the right level.

There are many explanations for achievement that falls below the evaluated potential. Some problems may be the educational experience itself: bright students may be bored by class assignments, and therefore do not give them much attention; or a student's learning style may conflict with the method of instruction used in his/her school. Underachievers may also have some learning disabilities that prevent them from making full use of their capabilities. Family factors may also contribute to a pattern of underachievement in a variety of ways.

A student may also be considered to be underachieving or over achieving based on the educator's evaluation of her/his learning potential in relation to the quality of the work she/he does on class assignments.

Now the classrooms become more constructive than older days. So the students are expected to learn things through constructive modes. Here comes the importance of self-learning which will be directed by the attributes like self-regulation, self-concept and achievement motivation. All the three variables play vital role in self-learning. Student learning can be guided by metacognition, planning, monitoring, evaluation of progress of learning and motivation to learn. Self-regulation is needed for this. A student who can achieve beyond his/her potential called an overachiever and may possesses self-regulated learning styles. They are becoming more successful since they could control their learning environment effectively.

Self-regulation is the ability to monitor and control one's own behavior, emotions and thoughts to reduce the frequency and intensity of strong impulses, in accordance with the demands of the situation. According to Schunk and Zimmerman (1994) self-regulation is not a mental ability or an academic performance skill; rather it is the self-directive process by which leaners transform theirmental abilities into academic skills."

Need and significance

In our society academic achievement is considered as a key criterion to judge one's total potentialities and capabilities. Achievement is ability dependent and the

ability is controlled and modified by many psychological attributes. Many cognitive, affective and psycho motor variables are influencing both positively and negatively the achievement of individual students. Chemistry is a subject of study in the secondary curriculum where all the three domains involve in the process of learning this subject. Many studies have shown that achievement of students are influenced by self-concept (Vijayalekshmy. 2014). Self-regulation of cognition and behavior is an important aspect of student learning and academic performance in the classroom context (Corno & Mandinach, 1983; Corno & Rohrkemper, 1985).

The present investigator was convinced that this area needs a thorough scientific investigation. This is precisely the reason why the present study was undertaken to compare self-regulation. Self-concept and achievement motivation of under achievers and over achievers.

Statement of the Problem

The present study is an attempt which centre around the hypothesis that "under and overachievement in Chemistry of secondary school students can be decided by their self-regulation, self-concept and achievement motivation." Hence the study is entitled as "***Self-regulation, Self-concept and Achievement Motivation of under and over achievers in Chemistry at secondary school level***"

Self-Regulation:Collin's dictionary defines self-regulation as the controlling of a process or activity by the people or organizations that are involved in it rather than by an outside organization such as the government.In the present study self-

regulation means the ability of an individual student to monitor and control his/her own learning environment

Self-concept: "Self-concept is the more or less organized perceptual object resulting from present and past self-observations. It is the map which each person consults to understand himself/herself, especially during the moments of crises or choices"

Achievement Motivation: Achievement Motivation is the tendency to maintain and increase individual proficiency in all areas in which a standard of quality is taken as binding.

Under and Over-achievers: In the present study an underachiever is a student studying in standard IX of secondary schools in Kerala who is not achieving to the expected level of his/ her intellectual potential. Student who performs less in chemistry than would be expected on the basis of his/her intelligence. Thus underachiever is one who performs below expectations. Kowitz & Armstrong (2007) explained the underachiever as "the pupil who is not working hard enough to achieve to the limits allowed by his abilities".An overachiever is a student studying in standard IX of secondary schools in Kerala who is achieving for higher than the expected level of his/her intellectual potential. Student who performs well in chemistry than would be expected on the basis of his/her intelligence. Thus overachiever is one who performs above expectations.

Secondary School: It refers to any recognized school by the Government of Kerala for giving instructions to students at the secondary level of school education(Standard VIII, IX and X)

Objective of the study

To compare Self-regulation, Self-concept and Achievement Motivation of Under and Over achievers in Chemistry studying in various secondary schools in Kerala

Methodology

The method adopted for this study is "survey method' considering the nature of the problem and nature of data to be collected.A sample of 1027 secondary school students were selected by stratified random sampling technique, giving due representation to factors like, gender, locale of schools, and management of schools and from which 146 under achievers and 167 over achievers in chemistry were identifiedusing Kerala University Group Test of Intelligence (verbal)and achievement test in chemistry.A regression equation is used to predict achievement from intelligence. Intelligence was measured using Kerala University Group Test of Intelligence (verbal).Under and over achievers are then determined on the basis of the discrepancy between actual and predicted achievement.The study has been designed with self-regulation, self-concept and achievement motivation as the variables. These variables are measured using standardized tests with high reliability and validity, namely;Self-Regulation Rating Scale, Kerala Self-concept Scale and Kerala Achievement Motivation Scale. Test of significance of difference between means of large, independent samples for comparison of groups. (Critical ratio test) is used for the analysis.

Analysis and interpretation of data

Data collected was analysed using critical ratio test and interpreted on the basis of the objective set for the study.The study was intended to compare Self -Regulation, Self-Concept and Achievement Motivation of Under and Over Achievers in Chemistry at Secondary School level. The mean and standard deviation of each of the variable under study were calculated separately for under achievers and over achievers.

Comparison of Self -Regulation, Self-Concept and Achievement Motivation of Under and Over Achievers in Chemistry at the Secondary School level

The data collected for the present study were compared using Critical Ratio test. The sample consists of 146 under achievers and 167 over achievers. The details of statistical analysis done are given in Table 1

Table 1

Data and Results of Test of Significance for the Difference between Mean Scores of Self -Regulation, Self-Concept and Achievement Motivation of Under and Over Achievers in Chemistry

Variable	Under Achievers			Over Achievers			Critical Ratio value
	N	M	SD	N	M	SD	
Self-Regulation	146	13.74	2.65	167	17.28	3.12	10.85**
Self-Concept	146	156.9	12.35	167	149.8	16.4	4.36**
Achievement Motivation	146	26.76	6.07	167	28.36	6.12	2.32*

** significant at 0.01 level of significance   * significant at 0.05 level of significance

From Table 1, it can be seen Self-Regulation (CR = 10.85) and Self-Concept (CR = 4.36) discriminate under achievers and over achievers in chemistry at thesecondary school levelat 0.01 level of significance as the calculated values are greater than 2.58 the table value . It isalso noted that Self-Regulation of over achievers is greater than that of underachievers. But the self - concept of under achievers is found to be greater than that of over-achievers. Achievement Motivation of under and over achievers (CR = 2.32) differ significantly at 0.05 level of significance as the calculated value is greater than 1.96 the table value. Over achievers possess higher mean score in achievement motivation than under achievers.

Discussion of Results and Conclusion

From the study it was found that self-regulation and achievement motivation discriminate between under and over achievers in chemistry. The mean score in self-regulation and achievement motivationwere found to be greater for over achievers in chemistry. This means that over achievers are possessing higher self-regulation and achievement motivation than their counterpart. Under achievers are to be provided with suitable training in enhancing their self-regulation during their learning process. It can be done by teachers by directing the under achievers to involve in peer learning strategies such as jig-saw technique, think share pair etc. The parents' expectations can be regulated so that the student may work "hard enough" to achieve well above his/her full potential. When a student's peer group does not value academic achievement, peer pressuremay

be another factor contributing to under-achievement. The 21st century learners are more interested in e-learning strategies. They can be motivated by using ICT based strategies such as mobile learning, whatsap interactions, using e-resources etc. Parents, educators, and the student can all work together to counter underachievement.

The self-concept of under achievers are significantly higher than that of over achievers. The over confidence of these group of students may be the reason for that. Parents and teachers can help the student compile a list of strengths, both academic and other, that she can build upon. They can also help direct the student to peer groups (through clubs, sports, or other extracurricular activities) that support academic success. In addition, role models can be presented to the student to help her focus on the possibilities in academic life, rather than the limitations. Finally, where necessary, families can seek counseling for problems such as alcohol abuse that prevent the student from focusing on school.The teachers and the students of the upcoming generation have to have the optimum use of educational technology for class room transactions irrespective of arts or science subject. Such innovations in the educational process would help the teachers to enhance the performance of children to their potential level through suitable support to students' learning process.

References

Aggarwal, Y.P.(1967). Self-concept and Scholastic Achievement. *Journal of Educational Research and Extensions,* 4(2) 64-74.

Avanija, K.K.(1994). *A study of certain correlates of self-concept among students of Navodaya Vidyalayas,* Doctoral Dissertation, RIE Mysore.

Bhatnagar, K.P. (1966). Academic Achievement as a Function of one's Self-concepts and ego functions. *Education and Psychology Review*, *6(4),* 178-182.

Corno, L., & Mandinach, E. (1983). The role of cognitive engagement in classroom learning and motivation. *Educational Psychologist, 18,* 88-100.

Corno, L., & Rohrkemper, M. (1985). The intrinsic motivation to learn in classrooms. In C. Ames & R. Ames (Eds.), *Research on motivation: Vol. 2. The classroom milieu* (pp. 53-90). New York: Academic Press.

Griffin, Robert S. (1988). *Underachievers in Secondary School: Education Off the Mark.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Lehr, Judy Brown. (1988). *At-Risk, Low-Achieving Students in the Classroom.* Washington, D.C.: National Education Association.JRank Articleshttp://psychology.jrank.org/pages/643/ Underachiever. html#ixzz5IVNJI7mi

Mehta, P.H. (1968). The Self-concept of bright underachieving male high school students. *Indian Educational Review,3(2)* 81-86.

Schunk, D. H., & Zimmerman, B. J. (Eds.). (1994). *Self-regulation of learning and performance: Issues and educational applications*. Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc**.**

Shivappa, D.(1969). A study of the relationship between academic achievement and self-concept of high school pupils. Journal of College of Education, 6(2),89-93.

Vijayalekshmy, S. (2014). The effect of Self-concept, Mathematical creativity, Study habit, Level of Aspiration and Parental involvement on achievement in Mathematics of Secondary School Pupils, Doctoral Dissertation, University of Kerala.

ATTITUDE OF HIGHER SECONDARY SCHOOL STUDENTS TOWARDS USING ONLINE INSTRUCTIONAL PACKAGE

Lulu Sebastine*

Abstract

The objective of this study was to identify the attitude of higher secondary school students towards using online instructional package in Commerce education at Ernakulam District, Kerala. Online Instructional Attitude Scale was used for this study and it was developed and standardized by the investigator. Survey method was used in this study. Sample comprised of 200 students who were XIth standard students of Government and Aided schools spread over Ernakulam district, Kerala. Data obtained were analyzed by using Mean, Standard deviation and t- test. The findings of the study revealed that there is significant difference between the attitude of boys and girls in higher secondary school students towards using Online instructional package.

Key words: Attitude, Higher Secondary School Students, Online Instructional Package, etc.

Introduction

The world is changing at very fast pace. Computer and internet are the most important invention by the human being. The IT@ school project implemented by the Govt. of Kerala, promoted the ICT education and ICT enabled education. Now we are living in the world of technology. Our general education system is also embedded technology in education. Almost all the students are literate in technology and they are also learned their lessons through internet. So the developing of online instructional package has greater importance.

Significance of the Study

Information Technology is a branch of engineering that deals with the use of computers to store, retrieve and transmit information. Online instructional packages are the learning materials prepared in online and it can access anytime and anywhere in the world over internet. This study aims to identify the attitude towards online instructional package among higher secondary school students.

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Definition of Key Terms

Attitude: A predisposition or a tendency to respond positively or negatively towards a certain idea, object, person or situation.

Higher Secondary School Students: Higher Secondary School Students used in this study refers to the students attending standard of XI in recognized schools of the Kerala State.

Online Instructional Package: Online instructional package is the learning material prepared in online and it can access anytime and anywhere in the world over internet.

Objectives of the Study

1. To compare the attitude of Higher secondary school boys and girls towards using online instructional package
2. To compare the attitude of Government and Aided higher secondary school students towards using online instructional package
3. To compare the attitude of Government higher secondary school boys and girls towards using online instructional package
4. To compare the attitude of Aided higher secondary school boys and girls towards using online instructional package

Hypotheses of the Study

1. There is no significant difference between the attitude of Higher secondary school boys and girls towards online instructional package

2. There is no significant difference between the attitude of Government and Aided higher secondary school students towards using online instructional package
3. There is no significant difference between the attitude of Government higher secondary school boys and girls towards using online instructional package
4. There is no significant difference between the attitude of Aided higher secondary school boys and girls towards using online instructional package

Methodology

Survey method was adopted for the present investigation. A sample of 200 students from XI standard following NCERT Syllabus of Ernakulam district were selected using random sampling technique by giving due weightage to gender and type of school management. The tool used for collecting necessary data was an Attitude Scale on Online instructional package, which was developed and standardized by the investigator. The statistical techniques which were used in the present study were mean, standard deviation and 't' value.

Interpretation of the Results

Hypothesis I

There is no significant difference between the attitude of Higher secondary school boys and girls towards online instructional package

Table 1

Comparison of attitude of Higher secondary school boys and girls towards online instructional package

Category	Group	N	Mean	Standard deviation	't' value
Gender	Boys	100	81.64	10.44	2.58
	Girls	100	75.36	10.15	

The table shows that the calculated 't' value is 2.58 which is equal to the table value 2.58 at 0.01 level of significance. It means that there is a significant difference.

Hypothesis II

There is no significant difference between the attitude of Government and Aided higher secondary school students towards using online instructional package

Table 2

Comparison of attitude of Government and Aided higher secondary school students towards using online instructional package

Category	Group	N	Mean	Standard deviation	't' value
Type of Management	Govt.	100	78.53	9.62	0.97
	Aided	100	78.47	11.82	

The table shows that the calculated 't' value come out to be 0.97 which is less than the table value 1.96 at 0.05 level of significance. It means that there is no significant difference between Government and Aided higher secondary schools.

Hypothesis III

There is no significant difference between the attitude of Government higher secondary school boys and girls towards using online instructional package

Table 3

Comparison of attitude of Government higher secondary school boys and girls towards using online instructional package

Category	Group	N	Mean	Standard deviation	't' value
Gender	Boys	50	80.64	9.43	0.03
	Girls	50	76.42	9.43	

The table shows that the calculated 't' value come out to be 0.03 which is less than the table value 1.96 at 0.05 level of significance. It means that there is no significant difference between the attitude of Government higher secondary school boys and girls towards using online instructional package.

Table 4

Comparison of attitude of Aided higher secondary school boys and girls towards using online instructional package

Category	Group	N	Mean	Standard deviation	't' value
Gender	Boys	50	82.83	11.37	.0001
	Girls	50	74.3	10.82	

The table shows that the calculated 't' value come out to be 0.0001 which is less than the table value 1.96 at 0.05 level of significance. It means that there is no significant differencebetween the attitude of Aided higher secondary school boys and girls towards using online instructional package.

Findings of the Study

There is significant difference between the attitude of Higher secondary school boys and girls towards using online instructional package.

There is no significant difference between the attitude of Government and Aided higher secondary school students towards using online instructional package.

There is no significant difference between the attitude of Government higher secondary school boys and girls towards using online instructional package.

There is no significant difference between the attitude of Aided higher secondary school boys and girls towards using online instructional package.

Hypothesis IV

There is no significant difference between the attitude of Aided higher secondary school boys and girls towards using online instructional package

References

Aggarwal, J.C. (2008). Educational Technology Management and Evaluation: Meaning and Definition of Technology. Agra: Vinod PustakMandir. p-3.

Best, J.W., & Kahn, J.V. (2009). *Research in Education.* New Delhi: Prentice hall of India.

Mariam, P. (2006). A Study of Group Differences in Computational Skills of Secondary School Students. Unpublished Doctoral Theses. Mahatma Gandhi University, Kottayam.

Rajashekhar, S. (2004). *Computer Education and Educational Computing.* Hyderabad: Neelkamal Publications Pvt. Ltd.

Sindhu, M.J. (2008). *Developing a E-Learning strategy for teaching Biology at higher secondary level.* Unpublished Doctoral Theses, Mahatma Gandhi University, Kottayam.

Taylor, R. (1980). *The Computer in the School: Tutor, Tool, Tutee.* Newyork: Teachers College Press.

THE EZEKIEL STRATEGY:
PREVENTION AND CURE FOR METROPHOBIA.

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Abstract

Many Nigerian students have metrophobia, which is the fear of poetry. They often find school-based poetry threatening and dreadful. Thus, their performance in poetry, specifically, and Literature-in-English over the years is often poor. This poor performance has dire implications for their pursuits of careers in Law, English and Literary Studies, Theatre and Media Studies, and the Arts, generally. Therefore, this paper, drawing inspiration from the Bible book of Ezekiel 47:3 - 5, proposes the Ezekiel Strategy for a gradual, progressive and pleasurable approach to poetry teaching, both as prevention and as cure for metrophobia.

Keywords: Ezekiel Strategy, Literature-in-English, metrophobia, pedagogy, poetry

Introduction

English is officially the second language in Nigeria. Apart from being a subject in the Nigerian school curriculum, it is used in education for teaching, learning and examinations. Therefore, it provides considerable leverage to persons who demonstrate mastery in it. (Timothy, Okune & Obiekezie 2010) Closely related to it is Literature-in-English. At the basic education level (kindergarten to lower secondary classes), it is subsumed in the English Language but taught separately at the senior secondary. It is a prerequisite for admission into universities to do courses such as English-and-Literary Studies, English, Law, Linguistics, as well as Theatre and Media Studies.

Unfortunately, over the years, students' performance in the subject in external examinations like the West African Senior School Certificate Examination (WASSCE) and the National Examination Council (NECO) examination has been generally poor. This poor performance is usually very glaring in the poetry section of the subject. In view of the importance of poetry in students' career and even language development, it is

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important to devise means of teaching poetry to sustain the joy and pleasure with which children first encountered poetry.

Literature Review

Students dread poetry. The fear of poetry is called metrophobia. (Fritscher, 2018). Fritscher It would appear that even many of the general readers of poetry do not find it a very pleasurable experience. An American study (Bradburn, Parks & Reynolds, 2006) found out that both the poetry audience and the potential audience found poetry difficult. For instance, 78 percent of poetry audience and 84 percent of the potential audience found it difficult to get the meaning of a poem. While 56 percent of the poetry audience and 81 percent of the potential audience said reading poetry was boring, 60 percent of the audience and 67 percent of the potential audience said reading poetry was hard work.

Watts (2010) agrees that students fear poetry. Rukeyser also (2011) relates, "One person will confess that he has been frightened off forever by the dry dissection of lines in school and that now he thinks with the disappointment of a poem…." Therefore, Rukeyser cautions, "Anyone dealing with poetry and the love of poetry must deal, then, with the hatred of poetry…." In fact, Vala, Doubalova, Stadova, and Berichova (2012), concede, "a lot of people in today's hectic world find poetry too abstract, subtle, and ungraspable, as if from another world." Other authors also share the same view of students' attitude to poetry (Linaberger, 2004; Parr & Campbell, 2006; Tippings, 2008; Panavelil, 2011, and Fakaye, 2012). Hughes sums it up thus: "More than other genres, poetry seems to elicit the most groans from students."(p.2)

Many reasons have been advanced for the metrophobia experienced by students. It has been partly blamed on the transference of teachers' fear to the students. For, according to Hughes (2007, p.2), "often language arts teachers report feeling uncomfortable teaching poetry … because they aren't sure how to teach it effectively…." Akporobaro (2008) also corroborates that poetry pedagogy is difficult to teachers. However, Ogunnaike and Akinbode (2011) found to the contrary. They found that 100 percent of teachers in their study said they enjoyed teaching poetry, even though, curiously, 50 percent of the same respondents said they found the teaching of poetry boring.

Causes of Metrophobia

Metrophobia may be traceable to pedagogical strategies adopted by teachers. Vala, et al (2012) blame teachers' insensitivity and the use of inappropriate teaching methods for students' negative attitude to poetry. Dutta (2007) observes that despite remarkable changes in language teaching methodologies, many teachers remain fossilized in the teacher-centred pedagogies that position the teacher as the sole purveyor of knowledge while the students remain passive recipients of teacher-made knowledge. Such teachers of poetry are likely to have an intimidating effect on the students. As Watts (2010) points out, "…students often feel intimidated by their teachers' interpretive authority" (p. 239). This is because the teachers hand out to the students their ready-made interpretations of the selected poems without acknowledging students' perceptions and interpretations.

However, learning does not only occur as a result of the teacher does, but,

sometimes, also, learning occurs without overt teaching. According to Nelson and Sassi (2000), learning proceeds "… through the individual's construction of understanding, not only by accepting facts and rules from teacher or textbook" Therefore, teaching, from Nelson and Sassi's perspective, is "the facilitation of knowledge construction, not only the delivery of information or opportunities to practice new skills" (p.554). While discussing why poetry should be dramatized, Giebert (2014) has reasoned that students may hate poetry if their only engagement with poetry is to discover official interpretations of the poems.

Unfortunately, teachers have exacerbated students' dread of poetry by not building on students' previous knowledge and experiences of poetry. Consequently, they plunge students suddenly into the study of recommended poems with the attendant cognitive shock and metrophobia. To counter poor pedagogy, the West African Examination Council (WAEC) (2015) recommends that qualified teachers should be employed to teach literature. However, WAEC has not described how they should teach literature, perhaps, because the organization believes that once teachers have the requisite academic or professional qualifications, they can deploy effective instructional strategies. Sadly, this is not often the case. Similarly, even though Ogunnaike and Akinbode (2011, p.98) advise that "Teachers of poetry should be keenly interested in teaching poetry," they have not offered any suggestions on how they should go about teaching poetry.

Objectives of the Paper

In the light of the negative attitudes of teachers and learners to poetry and the relevance of poetry to education and culture, it has become imperative to offer practical ways of preventing and remedying the fear of poetry among students. This paper is a conceptual proposal of a gradual, pleasurable, multimodal initiation of students to poetry through a strategy called the Ezekiel Strategy.

The Ezekiel Strategy

The Ezekiel strategy is inspired by a story in the Old Testament of the Bible. The prophet Ezekiel in the Bible book of that name (Ezekiel 47: 4 – 5) narrates his encounter in a vision.

In the vision, someone led the prophet into different depths of a river progressively. The person would measure 1000 cubits and lead the prophet into a different depth. The fellow began at the point where the river was just ankle deep and led him to the level where the water was just knee deep. After a distance of 1000 cubits, he led the prophet to a depth which was waist deep. From there, the person led the prophet another 1000 cubits to a point where the river was too deep for someone to wade in. It was a depth for swimming.

Going on eastward with a line in his hand, the man measured a thousand cubits, and then led me through the water; and *it was **ankle-deep***.

Again he measured a thousand, and led me through the water, and it was ***knee-deep***. Again he measured a thousand, and led me through the water, and it was ***up to the loins***.

Again he measured a thousand, and it was a river that I could not pass through, for the water had risen;

*it was **deep enough to swim in***, a river that could not be passed through. (RSV) (Emphases, mine)

Usually, it is shallower at the shore than in the middle of a river. Of course, the farther one wades into the river the deeper it becomes. Those who learn to swim do not just plunge into the deepest part. Rather they start (and are often advised so to do) from the shallower side. A Nigerian proverb states that one does not test the depth of a well with both legs. Similarly, in introducing students to poetry in an ESL environment, where studies show that students and teachers have morbid fears of poetry (Watts, 2010; Vala, Doubalova, Stadova, and Berichova 2012; & Fakaye, 2012), it is dysfunctional to plunge learners into the prescribed poems. Therefore, this paper offers practical steps how the Ezekiel strategy could be deployed to both prevent and cure Metrophobia.

Two key words are worthy of note in the narrative: "measured" and "led." The teacher is an instructional leader. School Leadership for the 21st Century Initiative (2001) acknowledges that:

Teachers are, paradoxically, also widely viewed as education's "franchise players," its indispensable but unappreciated leaders in the truest meaning of the word. It is unarguable that they instill, mold, and ultimately control much of the learning and intellectual development of the young people in their charge. It would be difficult to find a more authentic but unacknowledged example of leadership in modern life. (p. 1)

Therefore, a key role of the poetry teacher, from the Ezekiel analogy, is to lead the learners to into progressively deeper appreciation of poetry. Thus, the leadership is not haphazard, it is systematic, measured and graduated. The poetry teacher needs to measure two things; namely, the readiness of the learner and the most suitable content for the learner. According to Chamberlin and Sommerville (1991), "Instructional leadership…requires an analysis of the classroom climate and an assessment of the readiness of the particular group of students as it related to their psychological receptivity and readiness …."(p.13). The Ezekiel strategy implies that, for students to have a pleasurable experience of poetry, its study should proceed gradually, and nonthreateningly: from ankle deep, to knee deep, to waist deep before a complete dive into the turbulent sea.

To execute the "Ezekiel strategy," therefore, this author proposes certain practical steps that include starting from the familiar, changing form, approaching the whole rather than the parts. These are discussed in detail in the sections that follow.

Start from the familiar

Sometimes teachers begin with foreign poems that contain imageries out of sync with the learners' sociocultural landscape and literary experience. Preferably, African children should first be immersed in African poetry, especially, oral poetry, before they are introduced to non-African poetry. The lullabies, the folk songs, and indigenous ballads should form the first course in the menu of poetry education. Often, this is not the case. Welson (2007) counsels teachers to "Begin with poems that are accessible … [to students] and will interest them".

However, some African poems (not traditional folk poems) have been criticized by Chinweize (1980) for being contorted, obscurantist and sometimes unintelligible. Therefore, the familiar may not necessarily be an African or Nigerian poem. The television and the internet have truncated the geographical and cultural distances among nations. Thus, it is common, for instance, to find Nigerian students who are more conversant with European football clubs and their players than they are with the local clubs and players. What is important is for the teacher to "measure." In other words, in selecting the poem, the teacher should assess the familiarity of the imageries, and find out how they cohere with the learners' previous experience or background knowledge.

The strategy of beginning with the familiar is consistent with the schema theory. According to the schema theory, "past experiences lead to the creation of mental frameworks that help us make sense of new experiences." (Nunan 1999, p.201). Drawing on the students' previous experiences with poetry, no matter how informal that encounter may have been, can help provide the background knowledge for a better comprehension and appreciation of subsequent poetic encounters. As carrel (1984) puts it, prior knowledge facilitates prediction and inference, thus enhancing comprehension. That is why, the poet Simon Armitage (Cited by Blake, 2016) would say,

"The poems we learn when we're young stay with us for the rest of our lives. They become embedded in our thinking, and when we bring them to mind, or to our lips, they remind us who we are as people, and the things we believe in…."

Many Nigerian pupils were introduced to poetry through such delicious rhymes like " The Star" By Jane Taylor, "My Mother" by Ann Taylor, "Old Roger is Dead" and so on. Using, the Ezekiel analogy, introducing senior secondary school students to poetry with such nursery rhymes is analogous to wading just ankle deep in the water. Even the water in the bathtub is likely to be ankle deep. Therefore, taking the seer into ankle-deep water is not drastically different from the seer's previous experience. In the same way, preceding the study of "hard" poems with the simpler rhymes will help reduce the dread of poetry.

The whole before the parts

Sometimes, teachers teach poetry by dissecting (analyzing) the poem. The assumption is that students need to understand the entrails of the poem before they could comprehend the poem. Of course, this approach often takes a toll on students' interest and patience. It makes poetry too formal and examination oriented. It is the recipe for metrophobia. In the Ezekiel analogy, the "man" did not take the prophet through the geography of river formation. Rather, he measured the water and led him into it.

We start with the whole. We enjoy the poem, we are intrigued by its mystery; we are excited by the lure of discovery. We encompass the poem and comprehend it before we try to find out how that enjoyment was achieved. We bask in the cadence and harmony of the musical performance before we come to analyze how the artists achieved their feats. This does not negate the need to start from the simple to the complex.

However, which is simpler to behold – the car or the engines and couplings? Definitely, the car, that whole, seems simpler than the parts. It is more complex to decipher the parts than to comprehend the whole. So, let teachers start from the whole and gradually delve into its component.

Vocabulary study.

The language of poetry sometimes differs from the language of prose probably because of the condensation of ideas. Akyel (1995), cited in Timucin (2010), describes the language of poetry as "unusual." Therefore, for a second language situation, especially, the teacher can carefully examine the poem for difficult words and study these with the class beforehand. This serves a dual purpose. It enriches the students' vocabulary and removes obstacles to comprehension.

Changing the form

Poetry is traditionally presented in verse. The poems taught in school often appear as text. However, poems are not original textual. The teacher of poetry needs to bear this in mind. Therefore, as Dymoke (2009) (cited by Xerri, 2012) suggests, since poetry is a "multimodal medium" that appeals to all the senses, it should not be allowed to fossilize on paper. Dymoke argues that one sure way of killing a poem is to stagnate it on paper, adding that for poetry "to flourish in any future English curriculum and in your classroom and if you are to flourish as a creative poetry teacher, then you should embrace the multimodal experiences poetry can offer" (p.509).

In the next section, some of the ways of transforming poems will be discussed. They include the use of songs, changing forms from poetry to prose, and dramatizing poems.

Songs

Nigeria has a rich oral tradition of folklore, ballads and proverbs. Griots still frequent ceremonies where they entertain with songs and tales. Nigerian babies are often rocked to sleep by lullabies. Songs are almost constant companions of youths. They sing in traditional, religious, social, political and economic gatherings.

Even in school, kindergarteners are welcomed into school with songs. The letters of the alphabet, the states and their capitals, the colours of the rainbow, the chief rivers in Africa are taught in songs. Even their debut into poetry is through lyrical poems like, "My Mother," "My Shadow,' 'Twinkle Twinkle Little Star," etc. which are usually sung as songs. Therefore, Lew (2003, p.1) recommends "… extensive use of modern music and lyrics as a way to draw students into the world of poetry, because many students are likely to be reluctant poetry consumers." Putting the poems to music, where possible, could help mitigate their dread among students and teachers.

Another way of giving poetry a multimodal expression is by changing its structure. A poem has its peculiar structure. Even the way words and punctuations are employed is often different from prose. Sometimes every line begins with a capital letter. The subject-verb-object or the subject-verb-complement grammatical structure may not apply. This peculiarity sometimes imposes a barrier to comprehension. If a re-arrangement of the lines and the sentences would help easy comprehension, the class can go ahead and do so. The critical purpose is to derive meaning. Let us illustrate this

structural transformation using an extract of a poem"Night Rain" by J. P. Clark

Night Rain – J. P. Clark

What time of night it is
I do not know
Except that like some fish
Doped out of the deep
I have bobbed up belly wise
From stream of sleep

….

The poem is a Nigerian poem. It is a free verse as well as an enjambment. In other words, it has neither rhyme nor punctuations. In its present state, it could pose an obstacle to comprehension. However, if the teacher inserts punctuation marks into the first five lines of "Night Rain" and changes, s/he might have something like this:

What time of night it is, I do not know.
Except that like some fish
doped out of the deep,
I have bobbed up belly wise
from the stream of sleep.

The teacher of poetry can further transform the verse into prose by simple rearrangement. The teacher may do the transformation in partnership with the teacher. The result could be:

I do not know what time of night it is. Except that, I have woken from sleep to find myself floating like a doped fish in a stream.

It should be noted, however, that often a poem is deliberately structured to convey a special meaning. The teacher should let the students be aware of this, and, then, use some exemplars whether from the set poems or outside the recommended poems.

Dramatize the poems

One of the ways of transforming a poem is by dramatizing it. Dramatising a poem is described by Elting and Firkins (2006) as "…an approach to learning where students can use theatrical techniques to develop a response to the poem". Giebert (2014), from literature review some of the benefits of dramatizing poetry, has argued that dramatization heightens the enjoyment of poetry. The author, therefore, suggests that, "to be fully appreciated, poetry needs to be heard and spoken by learners, not just read in silence" (p.91). It is also believed that poetry performance can help students to "…explore the aesthetic function of language and, more widely, develop confidence in using English as a communicative tool" (Elting & Firkins, 2006, p. 127). Therefore, dramatizing poetry does not only make meaning more explicit, it also helps in developing the language skills of the learners, especially in a second language situation.

The performance of a poem could be within the class setting or on a specialized stage. Therefore, once the students are acquainted with the plot of the poem, they can act it out in form of a play. They may have to embellish, prepare a stage, organize props, costumes and select casts from among themselves. Performing "Night Rain," for instance, will not only make the class more participatory, it will also allow the activation of the various intelligences of the students (Gardner, 2006). The stage performance of the play may require a cast of four students, three acting as the poet personae and his siblings, while one acts as the mother. The props such as earthenware, or even buckets, two mats, one for sleeping, and the other to

be used as roofing mat. That one will have to be punctured with some large holes to depict the holes in the thatched roof in the poem. Where possible, the students can perform the play outdoors under an improvised or students-made hut. The teacher can work with the class to improvise a script that tells the story and provides appropriate dialogue.

Conclusion

In the Ezekiel's vision referenced, the prophet was taken gradually to a depth that was too deep for wading, but swimming. The teachers of poetry can adopt the same principle. Thus, the teachers should not plunge students suddenly into prescribed poems. Rather they should introduce the learners gently, gradually, progressively, pleasurably into poetry by starting from the familiar to the unfamiliar, diverging from the stereotypes of teacher-centred pedagogy with emphasis on teacher or text-imposed interpretation of poems. The use of songs, transforming into prose, and dramatization are some of the ways the Ezekiel strategy may be implemented. This may not only prevent metrophobia, not only to prevent metrophobia, but also to correct it. In fact, it can generate *metrophilia*, the love of poetry.

References

Akporobaro, F. B. O. (2008) Introduction to Poetry. Lagos: Princeton Publishers.

Blake, J. (2016). Poetry for children – Primary showcase. Poetry by Heart. Retrieved 28/12/2017 from http://www.poetrybyheart. org.uk/PBH-KS1-KS2-Guide-for-teachers-Summer-2016.pdf

Bradburn, N., Parks, K., & Reynolds, M. (2006). Poetry in America: A summary of the study. University of Chicago: National Opinion Research Center (NORC).

Chamberlin, L.J.. , J. (1991). Teaching as instructional leadership. *American Secondary Education* . 19, (3), 13-17, 32

Chinweize, J. C. & Madubuike, I. (1980). Towards the decolonization of African literature. Vol 1: African poetry and their critics. Enugu: Fourth Dimension.

Clark, J. P. (n.d) Night Rain. Retrieved from http:// folk.uio.no/mariesha/webmag/nightRain.html

Elting, S. & Firkins, A. (2006). Dramatizing poetry in the second language classroom. *English Teaching*: *Practice and Critique* December, 2006, 5, (3). 127 -136.Retrieved from http://education.waikato.ac.nz/research/ files/etpc/2006v5n3art5.pdf

Fakeye D. O. (2012) Genral Preference and Senior Secondary Schools Literature-in-English Achievement. Cross-Cultural Communication 8, (4), 39-45. DOI:10.3968/j. ccc.1923670020120804.1163

Fritscher, L. (2018) Coping With Metrophobia: The Fear of Poetry. Verywell Mind. Retrieved 25th June 2018 from https://www. verywellmind.com/metrophobia-fear-of-poetry-2671870

Giebert, S. (2014). Shall I Approach Thee Through Improvised Play? Dramatising Poetry. *Scenario, 2014* (2), 91-98. Retrieved from http://scenario.ucc.ie

Gardner, H. Multiple Intelligences: New Horizons in Theory and Practice. New York: Basic Books, 2006.

Hughes, J. (2007). Poetry: A Powerful Medium for Literacy and Technology Development Research What Works? Research into Practice. *Monograph* # 7. Retrieved from http://www. edu.gov.on.ca/eng/literacynumeracy/inspire/ research/Hughes.pdf

Lew, F. (2003). Unit Plan Grade 10 Poetry: Poetry through Song. Retrieved 28/12/2017 from education.library.ubc. ca/files/2011/06/10Frances-Lew-Poetry-through-Song.pdf

Linaberger, M. (2004). Poetry top 10: A foolproof formula for teaching poetry. *The Reading Teacher, 58*(4), 366-372.doi: 10.1598/RT.58.4.6.

Nelson, B. S. & Sassi, A. (2000).Shifting Approaches to Supervision: The Case of Mathematics Supervision *Educational Administration Quarterly 36*(*4) (October 2000) 553-584.Retrieved* from http://eaq.sagepub.com

Ogunnaike, J., and Akinbode, O. (2011). Towards effective teaching of poetry in Nigerian junior secondary schools. *Journal of the Nigeria English Studies Association* (*JNESA) 14*(1), 92 - 99.

Panavelil, A. (2011). Teaching Poetry in an EFL/ESL Class: An Integrative and Communicative Approach. *ELT Voices India,* 11 -20.

Parr, M., and Campbell, T. (2006). Poets in practice. *Reading Teacher*, 60(1), 36-46. Retrieved 11/12/2014 from www.wm.edu/centers/ttas/resources/articles/

Paul Lansky (n.d). Retrieved from https://paul.mycpanel.princeton.edu/poetry

Rukeyser, M. (2011). *The life of poetry, Chapter 1*. American Academy of Poetry. Retrieved from https://www.poets.org/poetsorg/text/life-poetry-chapter-1

Vala, J. Doubalová, K., Sladová, J. & Rerichová, V. (2012). Possibilities of positive influence on the attitude of students towards poetry. Procedia - Social and Behavioural Sciences. 69, 1259 – 1263.

Welson, C. (2007). Poetry: removing the fear factor. 2007 Day of Reading. The University of Illinois at Springfield.

Xerri, D. (2012). Poetry teaching and multimodality: Theory into practice. *Creative Education.*3 (.4), 507-512.

TEACHING MENTORING AND ACADEMIC STAFF PROFESSIONAL COMPETENCE IN UNIVERSITIES

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Abstract

Mentoring has been recognized over the years as being critical to improving professional competence and growth of organizational members. This present research gathered data from 200 academic staff on teaching mentoring and academic staff professional competence in universities in Cross River State, Nigeria. A correlation research design was adopted for the study. One research hypothesis was raised to guide the study. Two research instruments titled "Teaching Mentoring Questionnaire (MPQ)" and "Academic Staff Professional Competence Questionnaire (ASPCQ)" were developed and validated for data collection. The items in the two instruments were weighted on a 4-point response scale. The reliability of the instruments using Cronbach Alpha method were 0.85 and 0.83 respectively. Data collected were analyzed using Pearson Product Moment Correlation. The hypothesis raised was tested at 0.05 level of significance. Results of data analysis revealed that teaching mentoring significantly related to lecturers' professional competence in terms of lesson presentation, teaching method and students' assessment. Recommendations were made, among which was that mentoring shouldbe encouraged and instituted in universities on formal basis.

Keywords: *Mentoring practices, academic staff, professional, competencies, universities*

Introduction

University education is central to the transformation of any society. At the centre of this transformation is the lecturer, who is responsible for the transfer of knowledge and skills to students through research and teaching. Academic staff professional competence is crucial to this transformation process. For this to be effective, academic

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staff should have the mastery of their area of specialization; they should have skills and ability to present their lesson to students with standard and acceptable methods that meet the learning desires of the students. More so, they should be able to assess students creditably and qualitatively as demanded by the university system. Lecturers' inability to be effective in lesson presentation, or to employ effective teaching method and carry out adequate assessment of students' academic activities, may be due to poor mentoring.

Academic staff professional competence involves the capacity to plan and direct the job process in a way that motivates lecturers to carry out their teaching adequately, so as to produce the expected result in terms of lesson presentation, application of suitable teaching methods and proper assessment of students. A professionally competent lecturer interact very well with students in the learning environment and encourages students' contribution during the learning exercise. They are not rigid to a particular method of teaching as they vary their teaching methods to arouse students' interest in the learning process. They also evaluate students' performance through administering of continuous assessment tests to students, in line with the university requirement.

Many new academic staff experience difficulties in the transition of roles from learners to teachers. The transition may be very demanding, most especially in the universities where the learners are mature and more aware of the mental prowess of these teachers. In the light of these circumstances, the new lectures may always be under immense pressure in the discharge of their duties, because of fear of criticism and disappointment from their students. The aforementioned challenges may hinder some lecturers' teaching effectiveness, which subsumes teaching, research, administrative duties, supervision of projects and thesis, assessing students work and so on. Lecturers' ineffectiveness in their assigned duties may lead to frustration and depression. It may as well suppress students' yearning for learning, and may force them to embark on anti-learning behaviour such as attending night clubs, joining bad association, sorting and others. Thus to curb this ugly situation in our citadels of learning, mentoring become necessary to assist new lecturers in the university system to be effective in their teaching.

Teaching in the university is very demanding and stressful especially among newly employed faculty members. Factors responsible for poor teaching effectiveness by academic staff appear to be within the university system and would have been averted if proper orientation and mentoring programmes were carried out for lecturers at their point of entry. This would have given them the opportunity to learn fast and adjust to the demands of their new community.

Mentoring has been a powerful tool in empowering and improving the quality of teaching in the university education. Ekechuku and Horsefull (2015 :37) sees mentoring as a process for the transmission of knowledge, social capital, and the psychosocial support perceived by the recipient as relevant to work, career or professional development. Mentoring is a close and personalized relationship between senior faculty members (with career

experience) and newly employed Faculty members, aimed at providing emotional and moral support; feedback on specific task performance, knowledge and challenges to the newly employed lecturers (Johnson, 2007). Mentoring in the University System among lecturers is directed towards the needs of individual lecturers in order to assist them accomplish the task of teaching, research, administration and other tasks. This means that mentoring subsumes offering advice, assistance and support to new faculty members in career progression and beyond. The purpose of mentoring is to ensure that the appropriate ways of doing things are transferred to the new generation.

From the ongoing, it is logically admissible that mentoring relationship provides guidance, advice and supports to new faculty members. Hence there is to some extent some form of association between mentoring services and lecturers' teaching effectiveness. This study therefore concerns itself with teaching mentoring and academic staff professional competence in Cross River State Universities. Teaching mentoring refers to the guidance given to the teacher mentee to identify areas/ skills in himself/herself that need to be enhanced, help develop competencies required for successful interaction and learning experiences, so as to improve their classroom instruction practices and students achievement (Ingersoll, & Strong, 2004).

Peretomode (2017) observed that while mentoring has long been recognized as a useful technique for improving on, and enriching the experiences, skills, knowledge and expertise of employees in an organization (including academic institutions in developed countries), only recently has its usefulness been realizes in higher institutions in Nigeria. Thus the current study iscarried out to find out the relationship between teaching mentoring and academic staff professional competence in Universities in Cross River State.

Statement of the problem

The poor output of new lecturers in the university community in Nigeria, most especially in Cross River State has been disturbing in recent years. It has been observed that these new faculty members barely cope with their day-to-day activities ranging from teaching, research, supervision of projects and theses, assessment of students' work, administrative duties, and so on. This development which is attributed to poor mentoring of new faculty members has a negative influence on their job effectiveness, which is their ability to successfully adopt professional practices in their job roles by way of lesson presentation, adopting proper teaching method and effective assessment of students' performance. The lack of effective mentoring programmes for newly appointed lecturers has resulted in deterioration of commitment and teamwork, low level of confidence during lecture delivery, poor choice of teaching methods, alarming rate of sorting and examinations malpractices. Other problems include poor human relationship when executing administrative tasks, as well as, poor academic performance of students noticeable in poor grades in assessment and in examination scores.

Theuniversity system to some extent is not explicit regarding mentoring as it does not assign specific senior faculty members

the duty of mentoring new faculty members. Thus everyone is busy in his/her work in order to advance in their educational status thereby, leaving the new lecturers isolated and void of guidance. This situation makes some of them encourage examination malpractice in order to cover their lapses in teaching, rush over lectures in order to make up for lost periods, teach contents that are not in the curriculum and set examination questions on topics they did not teach in the class. This ugly situation prevails because of lack of teaching mentoring. At this point therefore, it is relevant to ask the question: How does teaching mentoring relates to academic staff professional competence inCross River State Universities?

Literature review

Research such as that done by Sorcinelli and Yun (2007), found that mentors must be more than just a friend to beginning teachers; they must also know how to help them translate theories about teaching and learning into practice. Further research by Giles, Cramer, and Hwang (2001) found that novice teachers who had been mentored were able to move to an awareness of student needs earlier than peers who had not been mentored and who had remained in the survival phase. Since being aware of student needs is the ultimate goal of every teacher, support that helps novice teachers operate more effectively in the classroom seems critical" to their success as a teacher.

Fluckiger, McGlamery and Edick (2006) opined that, mentoring can help new teachers improve classroom practices and learn professional responsibilities to become effective sooner. In a national study on mentoring, in the United States, Ingersoll and Smith (2004) found that 70% of new teachers were matched with mentors in the same discipline. Ingersoll et al further reported that teachers are more likely to continue teaching when they receive mentoring on content area. Huling (1990) advocate matching beginning teachers and their mentors by proximity. Related to this, Irinaga-Bistolas, Schalock, Marvin, and Beck (2007), revealed that beginning teachers in rural settings, who were paired with a mentor in the same building, had their informational, instructional and emotional needs being met at higher levels than participants whose mentors were in another location,

Supporting teachers to improve their practice is central to improving learning outcomes for students, and although the field still lacks conclusive research linking instructional coaching to student achievement, studies by Brown, Anfara, Hartman, Mahar and Mills (2002) indicated that coaching helps teachers better understand new instructional practices and incorporate new strategies into classroom instruction. Moskowitz and Stephens (1997) noted that, depending on school size, student population, and the specific needs of new teachers, the goals and structure of a mentoring programme may vary from school to school. In general, mentoring programmes function to help beginners make the transition from "students of teaching to teachers of students". According to Moskowitz et al (1997), they considered the mentoring period to be the first three years on the job, and many districts provide formal induction programmes and other types of support for two, if not three full years,

Valli (2001) after a long investigation of educators tutoring, inferred that starting instructors utilized academic devices learned as a part of educator training just when they had been polished with and upheld by an accomplished instructor. In a review by Carter and Francis (2000), they found that there was extensive proof that fledglings depend vigorously on the coaches' proficient ability, help, bolster, and are esteemed for giving individual down to earth learning and situational particular help with instructing. In another comparable review by Johnson (2001), in Illinois, USA,62 first year instructors in three schools were met with regards to the variables they felt added to accomplishment fornew educators in the classroom setting. Among the hugest achievement calculated was coaching by experience instructors. An investigation of a programme at the University of Nebraska done by Fluckinger, McGlamery and Edick (2006), it was uncovered that new instructors could indicatepropelled learning and abilities because of full-time tutoring.

From an exploration on the scholarly result of educators in the wake of coaching, Feiman-Nemser (2001) felt that compelling tutoring can possibly develop effective instructing and to build up the aura and aptitudes of constant change.Likewise, a study conducted by Giles, Cramer and Hwang (2001) found that, fledgling instructors who had been guided could move to an attention to understudies needs sooner than companions who had not been tutored. Sweeney (2004) opined that, coaching was one of the best instruments for giving educational modules introduction to youthful speakers. Feiman-Nemser (1996) scrutinized coaching for its capability to advance ordinary standards

and practices, with new instructors risking grabbing less viable ways to deal with educating. In spite of this probability, the need and significance of tutoring of new in takes into the educational system cannot be overemphasized.

From the review carried out in this study, it was found that few researches on mentoring has been carried in the Nigerian setting hence the need for the present study to find out the relationship between teaching mentoring and academic staff professional competence.

Hypothesis

1. There is no significant relation between teaching mentoring and academic staff professional competence.

Methods

The study which adopted a correlational design was carried out in Cross River State. Two universities were involved in the study; University of Calabar and Cross River State University of Technology. Two hundred and ten (210) junior academic staff consisting of 74 females and 136 males constituted the sample for the study. From the University of Calabar, 150 academic staff were sampled while 60 academic staff were sampled, from Cross River State University of Technology. From each of the institutions used for the study four students were sampled to assess each academic staff professional competence. Thus of 840 students taught by the sampled lecturers were used to assess their professional competence.

Two research instruments titled "Teaching Mentoring Questionnaire" (TMQ), meant to generate data from mentors on teaching

mentoring and "Academic staff Professional Competence Questionnaire"(ASPSQ) for studentsto assessed academic staff professional competence were used for data collection. TMQ had two sections: Sections A and B while section B comprised point Likert response option ofStrongly Agree (SA), Agree (A), disagree (D) and strongly Disagree (SD). This section contained six items which measure teaching mentoring. ASPCQ comprised 18 items which measured academic staff professional competence in terms of lesson presentation, teaching method and students' assessment. It was measured on a four point scale of Always, Sometimes, Very rare and Not at all. To establish the validity of the instruments, it was presented to two experts in measurement and evaluation in the Faculty of Education, university of Calabar for scrutiny, suggestions and comments. The errors pointed out were corrected. To determine the reliabilityof the instruments, Cronbach alpha reliability method was utilized. The reliability coefficient obtained indicated

0.85 and 0.83 respectively, which were high enough, hence the justification for the utilization of instrumentsfor data collection. The instruments were administered on the respondents in their various institutions. At the end of the exercise, only 200 copies were successfully retrieved. Data collected were analyzed using Pearson product moment correlation analysis.

Results

Hypothesis 1: There is no significant relationship between teaching mentoring and academic staff professional competence.

The independent variable in this hypothesis is teaching mentoring while the dependent variable is academic staff professional competence classified into lesson presentation, teaching method, and students' assessment. Pearson product moment correlation coefficient statistical technique was used to test the hypothesis. The hypothesis was tested at 0.05 level of significance. The result is presented in Table 1.

Table 1

Pearson's product moment correlation analysis of the relationship between teaching mentoring and academic staff professional competence in universities.

Variables	$\sum X$ $\sum X^2$ $\sum Y \sum X^2$	$\sum X^2 \sum X^2$ EY^2	$\sum XY \sum X^2Y$	I_{XY}
Teaching mentoring (X_1)	3886	78238		
Lesson presentation (Y1)	3452	61250	68224	0.54*
Teaching method (Y2)	2930	44294	58021	0.56*
Students assessment (Y5)	2977	45711	58820	0.49*

* P <0.05, df =198, critical r =0.196

The result in Table 1 show that, the calculated r-value for lesson presentation (0.54*), teaching method (0.56*) and students' assessment (0.49*), were all found to be higher than the critical r-value of 0.196 needed for significance at 0.05 alpha level with 198 degrees of freedom. With this result, the null hypothesis was rejected for all the sub-variables of academic staff professional competence. This means that there is significant relationship between teaching mentoring and academic staff professional competence in universities in Cross River State. A critical look at the results revealed that increased in teaching mentoring will certainly lead to increase in academic staff professional competence in terms of lesson presentation, teaching method, and students' assessment.

Discussion

This hypothesis aimed at finding out the relation between teaching mentoring and academic staff professional competence in terms of lesson presentation, teaching methods and students' assessment. The result of this hypothesis revealed that there is a significant relationship between teaching mentoring and professional competence of academic staff. Hence the null hypothesis was rejected. Meaning that teaching mentoring significantly relates with professional competence of academic staff in universities in Cross River State especially in their lesson presentation, teaching methods, and students' assessment. The findings of this study can be explained by the fact that mentoring is a critical strategy for increasing academic staff professionalism. Quality mentoring integrates new lecturers into the professional culture of the universities, as well as, giving them the tools they need to educate their students.

The result of this hypothesis affirmed the findings of Fluckinger, McGramery and Edick (2002) and Giles, Cramer and Hwang (2001), that teaching mentoring enabled newly employed lecturers to adopt advanced teaching skills and knowledge. They also posited that teaching mentoring helps the newly appointed lecturers to identify the needs of the students earlier than their counterparts who were not exposed to teaching mentoring programme. The finding supported the views of Brown et al., (2008) that teaching mentoring helps newly employed lecturers to understand new instructional practices, technology innovative practices and implement them into classroom instruction.

The finding of this hypothesis equally amplified the findings of Feiman-Nerman (2001) whonoted that effective mentoring has the potential to cultivate powerful teaching and to develop the disposition and skills of continuous improvement. Valli (2001), in the same light noted that beginning teachers used pedagogical tools learned in teacher education only when they had been practiced with and supported by an experienced teacher.

Feiman-Nemser (2001), confirmed that mentoring can indeed promote effective teaching, but only if mentors are adequately prepared. Knight (2009) also affirms that, instructional coaches need to identify the teaching practices, learning strategies, tools and other interventions that have the greatest likelihood of helping students.

Conclusion

Arising from the finding of this study, it was concluded that teaching mentoring has significant relationship with academic staff professional competence in terms of lesson presentations teaching methods and students' assessment.

Recommendations

Based on the findings of this study the following recommendations were made.

The Government both at the federal and state levelsshould encourage mentoring programmes for newly appointed academic staff in Universities and this should be provided on formal basis with necessary infrastructure to facilitate it in all institutions.

Administrative heads of tertiary institutions (Vice Chancellors, Deans, and Heads of Department) should ensure that effective and efficient mentoring programmes exist and are encouraged in their respective Faculties and Departments.

The school heads should ensure that the newly appointed lecturers are fully aware of the benefits of institutional mentoring.

References

Brown, K., Anfara, V., Hartman, K., Mahar, R., & Mills, R. (2002). Professional development of middle-level principals. Paper presented at the annual meeting of the American Educational Research Association. Seattle, W.A.

Carter, M. & Francis, R. (2000). Mentoring and Beginning Teachers' Workplace Learning, Paper presented Oct. 1. the AARE Conference, Sydney, Australia. http://www.aar.edu.au/0Opap/ear00232.htm (accessed 1St February 2014)

Feiman-Nemser, S. (1996). Teacher mentoring: a critical review. ERIC Digest. Retrieved September 8, 2005, from http://www.ericdigests.org/i997-1 /mentoring.html.

Feiman-Nemser, S. (2001). Helping novices learn to teach. *Journal of Teacher Education,* 52 1, 17-31.

Ekechukwu, R. O. & Horsfall (2015). Academic mentoring in higher education: A strategy to quality assurance in teacher education in Nigeria. *European Journal of Research and Reflection in Educational Sciences,* 3(2), 37-45

Fluckiger, J., McGlamery, S. & Edick, N. (2006). Mentoring teachers' stories: Caring mentors help novice teachers stick with teaching and develop expertise. Delta Kappa Gamma Bulletin, 8-13.

Giles. C. Cramer, M., & Hwang, S. (2001). Beginning teacher perceptions of concerns: A longitudinal look at teacher development. *Action in Teacher Education,* 23, 89-98.

Huling-Austin, L. (1990). Teacher induction programmes and internships. In W. R. Houston (Ed.), *Handbook of research on teacher education*. New York: Macmillan Publishing Company.

Ingersoll, R. M., & Smith, T. M. (2004). Do teacher induction and mentoring matter? NASSP Bulletin, 88638, 28-40.

Irinaga-Bistolas, C., Schalock, M., Marvin, R., & Beck, L. (2007). Bridges to success: A developmental induction model for rural early career special educators. Rural Special Education Quarterly, 261,13-22.

Johnson, W. B. (2007). On being a mentor: *A guide for higher education faculty*, Lawrence Erlbaum Associates.

Knight, J. (2007). Instructional coaching: A partnership approach to improving instruction. Thousand Oaks, CA: NSDC: Corwin Press.

Moskowitz, J & Stephens, M. (1997). From students of teaching to teachers of students: Teachers induction around the Pacific Rim. Singapore: Asia pacific economic cooperation secretariat.

Peretomode, V. O. (2017). *Mentorship: A panacea to academic excellence, manpower development and national building*. A keynote address delivered at the 20th anniversary celebration and home coming ceremony of alumni of the department of educational administration and planning, University of Calabar, Calabar , held on 24th February, 2017.

Sorcinelli, M. D. & Yun, J. (2007). From mentor to mentoring networks: mentoring in the new academy, change 39 6.

Sweeney, B. (2004). *Teacher mentoring and induction: The state of the art and beyond.* Thousand Oaks, California: Corwin Press.

Valli, L. (2001). A beginning teacher survey study: A theoretical perspective. Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA.