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Original Research Article

Management of Innovations in Early Childhood Education for Sustainable Development Goals in Bayelsa State

Dr. J. C. Nzokurum[1*], Nwankpa Lawrence Ezewoko (M.ED)[1]
[1]Department of Educational Management, Faculty of Education, University of Port Harcourt, Nigeria

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Abstract: This study examined management of innovations in early childhood education for sustainable development goals in Bayelsa State. Two research questions and two corresponding null hypotheses guided the study. The theoretical position was anchored on the "Piaget theory of cognitive development propounded in (1963). This study adopted a descriptive survey design with a population of 256 approved early childhood education centres across the 8 Local Government Areas in Bayelsa State. A stratified random sampling technique was used to draw a sample size of 300 caregivers from the population. A self-constructed questionnaire tagged: "Management of Innovations in Early Childhood Education for Sustainable Development Goals in Bayelsa State Questionnaire (MIEECESDGSQ)" was used for data collection. Test-retest technique was used to determine the reliability of the instrument which yielded a coefficient index of 0.81 through Pearson Product Moment Correlation Coefficient (r). Mean and rank order were used in answering the research questions while z-test statistics was used in testing the hypotheses. The findings revealed among others; computer assisted instruction and team teaching innovative early childhood education enhances sustainable development goals. Based on the findings, it was recommended among others that programmes that are figured out as innovative by school administrators should be well implemented so as to achieve the purpose for which such programmes were put forward.

Keywords: Management, Innovations, Early Childhood Education, Sustainable Development Goals.

INTRODUCTION

The years before a child reaches kindergarten are among the most critical in his or her life to influence learning (ED.gov. 2010); and this becomes a challenge and commitments to the parents, teachers, community and government to ensure that these young children receive appropriate training in their early stages of life. Early childhood education programmes are highly recognized and promoted in developed societies to give children the opportunity to learn phenomenal amount of experiences at home and surrounding environments. Heward (2009) explained in this scenario that children grow and develop in orderly ways, learning to move about their world, communicate, and play. As their ability to manipulate their environment increases, so does their level of independence.

Nigeria generally and Bayelsa State in particular is currently going through challenging times in providing her young citizens quality education. Some important issues facing Nigeria's policy makers include ineffective planning and implementation of programmes, accountability, and management of scarce resources, shortage of highly qualified early childhood teachers, undefined curriculum and inclusion. Accordingly, Mindes (2007) added that early childhood educator's challenges are enormous and they include parent partnership, respect for cultural diversity, appropriate early intervention assessment and linking curriculum and assessment practices appropriately.

Early childhood/pre-primary education according to National Policy on Education document is the education provided in an educational institution to children prior to their entering the primary school. It includes the crèche, the nursery, and the Kindergaten (NPE, 2013). Ibiam and Ugwu (2009) defined it as the education designed to develop the habits, attitudes and skills needed for primary education. Maduewesi (2013) believes it encompasses the care, development, and education of children below the age of six years. The earliest years of a child's life is very critical. This influence how the rest of childhood and adolescence unfold. Yet, in most developing countries including Nigeria, the policies, programmes and budget of the

***Corresponding Author:** Dr. J. C. Nzokurum
Department of Educational Management, Faculty of Education, University of Port Harcourt, Nigeria

nations have not reflected the seriousness with which the matter ought to be addressed for sustainable development.

A sustainable society is one that meets its needs without compromising the quality of future generations to meet theirs (Akpan, 2007). Actions are considered sustainable if there is a balance between resources used and resources generated; resources are as clean at end use as at beginning; the viability, integrity and diversity of natural systems and functions are restored and maintained; they lead to enhance local and regional self-reliance; they help create and maintain community and a culture of peace; and each generation preserves the legacies for future generations.

Innovation is derived from the Latin word "innovatus" meaning altered: It is an aspect of educational change that involves the alteration of some aspects of educational programmes and practices. Sacks and Ruzzi reported on two popular innovative model approaches applicable to pre-school education. The first is the Montessori philosophy built on the belief that children are highly capable learners who need minimal input to learn from their environments. Key elements of the Montessori Method are mixed age classroom (integrated), student autonomy in choosing learning tasks and experimental design. The second innovation is strong parent involvement to further the goals of promoting critical thinking and collaboration among young children. This one is popularly known as Reggio Emilia approach. It is focused on strong home-school relationships, long term projects, the recognition that children possess multiple symbolic languages, and the role of the child's environment as teacher (Sacks and Ruzzi, 2005). Hence the study examined management of innovations in early childhood education for sustainable development goals in Bayelsa State.

The theoretical position of this study is anchored on Piaget theory of cognitive development propounded in (1963). This theory concerns itself with knowledge and how human gradually acquire, construct and use it. According to Piaget, children move from the different stages of mental development. He classified these stages as:

Sensorimotor stage: He described this stage as a period of tremendous growth and change. At this stage children use what they are born with (such as looking, sucking, grasping and listening) to learn more about their environment. Piaget called this stage sensorimotor stage because it is through the senses and motor abilities that the infant gain basic understanding of the world around them.

Pre-operational stage: It begins around age 2 to as children start to talks and lasts until approximately age 7 years. Children at this stage begin to engage in symbolic plays and learn to manipulate symbols and develop speaking ability.

Concrete operation stage: This period spans from the time of middle childhood. It begins around age seven and continues until approximately eleven. It is characterized by the development of logical thought. Children become much more logical and sophisticated in their thinking during this stage of development.

Formal operational stage: It is the final stage of Piaget's theory of cognitive development. It begins at age 12 and lasts into adulthood. Thinking becomes more sophisticated and advanced.

The relevance of this theory to this study is that teaching should start from the area of interest, experience and gradually move into more difficult areas. In other words, teaching must start from the known to the unknown. Therefore, those who teach children should be trained on the rudiments of handling little children. School cannot replace the home, the home is the best place for laying foundation for the proper all round growth and development of the child. Therefore all school activities must be based on love, acceptance and discipline. The education of young one should combined activities with moral and intellectual development.

Computer-assisted instruction is the most recent method used in the teaching learning process. It involves the use of computer equipments in teaching and learning. Meziobi in Okoringa (2016) opined that computer assisted instruction is a "system of individual computer learning where computer is used in instructional activities. The computer is used in instructional activities. The computer stores the instructional materials and controls its sequence while the learner (child) is in direct interaction process with the computer and lesson programmed into the computer system.

The introduction of computer assisted instruction into educational practices has widened the scope of opportunities in early childhood education for sustainable development (Nwabueze, 2010). Its usage in early childhood education has a lot to contribute in achieving the sustainable development goals through global partnership for early childhood education development. Early childhood learners can collaborate with partners elsewhere through information communication technologies. This would promote the opportunity to mirror educational systems elsewhere through information generation and exchange on areas like training and retraining of teachers equipping them with basic modern technology, choice of content, and distribution of teaching and learning materials as well as sharing information and linking other development partners. In the same vein, the use of computer-assisted instruction is also useful in the area of poverty

alleviation; it creates job opportunities for management. School personnel can run their own call centers and recharge card sales. Research has shown that the combination of conventional and computer assisted instruction has been most effective in raising student achievement scores. Computer-assisted instruction is used through the entire range of education from pre-school to professional school. It has been offered to a wide variety of fields including all the main school subjects taught in early childhood education. The following are some of the benefits of computer assisted instruction.

1. It encourages creativity on the part of the learner which leads to positive thinking and mental development.
2. It exposes learners to varieties of materials that could motivate them to learn more
3. It helps to improve educational technology thereby leading to improved learning.
4. It allows student work at their own pace and ability.
5. It provides learners the freedom to experiment with different options.
6. Computer assisted instruction helps students' understand difficult concepts through sensory approach.
7. The computer provides immediate feedback to the learner when there is error or misconception (Okeke Oti, 2010).

Team-teaching itself is a concept with several meanings. According to Shaffer (2011) team-teaching occurs when two or more teachers are performing educational services in the same course/subject. Accordingly, team teaching affords the opportunity for shared teaching, shared observation as well as self-evaluation procedures that lead to self improvement and goals achievement. The greatest appeal of team teaching is its involvement of a team of teaching staff in diagnosing learners' needs, planning activities determining goals/objectives and assessing students, therefore teachers should encourage this technique.

Teams are resources of an organization which helps to encourage togetherness in the work place in line with the achievement of administrative task and organizational goals. They consist of professionals from different background with the intention to promote mutual understanding and commitment to build and sustain organizational objectives for sustainable development. This is to say teams are made up of individuals with different personalities, ideas, strengths, weaknesses, and levels of enthusiasm and demands from the jobs (Edward, 2002). This implies that weaknesses and strengths are common among the professionals but with team approach, organization objectives can be achieved through adequate monitoring and nurturing (Nwafor, 2016).

In the same vein, teams are group of people who interact and influence each other for the purpose of attaining organizational objectives. This definition therefore has a few important components worth noting. First, all teams exist to fulfill some pre-determined purpose such as providing services, assembling products, designing a new model or making an important decision. Secondly, team members are held together by their interdependence and need for collaboration to achieve common goals. All teams require some form of communication so that members can co-ordinate and share common objectives. Thirdly, team members influence each other although some members are more influential than others regarding the team goals and activities. Finally, a team exists where its members perceive themselves to be a team.

Cooperation between teachers in early childhood education has been widely recognized as a powerful issue in teacher professional development. Two or more teachers can move effectively respond to the educational and psychological needs of the learners (Shafer, 2011). The virtues of working in a team are closer relationships between the team members, joint responsibilities, personal and professional growth, whereas the approach itself tends to be focused on collaborative planning which is presented through a more interactive approach.

Statement of the Problem

A good number of nursery schools in Nigeria are still run by private individuals despite the government lip service of getting involved. These programmes are still faced with the challenges of providing quality training and recruitment for teachers on a continual basis, provision of learning materials that are age appropriate and a nationally accepted curriculum for teaching the children. It has been observed that nursery schools in Nigeria currently operated on university campuses, schools premises, premises of industrial and business organizations, church premises, town halls, and residential buildings. The facilities are considered generally poor and ineffective and therefore, cannot drive sustainable development.

It has been noted that over 1,429 caregivers in nursery schools surveyed in the South Eastern part of Nigeria, below 20% of the observed centers have teachers who with Nigeria Certificates of Education (NCE), much less university degrees. Many were high school graduates who were writing to complete the requirement for university education. Furthermore, these often inexperienced, under-motivated teachers have too much workload, therefore, resulting in the children receiving ineffective education and inadequate care, which is bound to affect their eventual growth and intellectual development. The issues, therefore, lies on whether there are innovative practices in early

childhood education centres for sustainable development goals.

Aim and Objectives of the Study

The aim of the study was to examine management of innovations in early childhood education for sustainable development goals in Bayelsa State. Specifically, the objectives were to:

1. Find out how computer-assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State.
2. Determine how team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State.

Research Questions

The study was guided by the following research questions.

1. How does computer-assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State?
2. How does team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State?

Hypotheses

The study was anchored on the following hypotheses.

H_{01}: There is no significant difference between the mean scores of male and female caregivers on how computer-assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State.

H_{02}: There is no significant difference between the mean scores of male and female caregivers on how team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State.

METHODOLOGY

This study adopted a descriptive survey design. The population of the study comprised all the two hundred and fifty six (256) approved Early Childhood Education Centres in the eight (8) Local Government Areas in Bayelsa State. Source: (Statistics Department of Bayelsa State Ministry of Education, Yenegoa 2020). A stratified random sampling technique was used for this study. A sample size of 300 teachers out of 1,200 teachers was drawn from the population. The instrument used for data collection was 12 items questionnaire tagged: "Management of Innovations in Early Childhood Education for Sustainable Development Goals in Bayelsa State Questionnaire (MIEECESDGQ)". The instrument was validated by experts in the field of Educational Management and Measurement and Evaluation of the University of Port Harcourt. Test-retest technique was used to determine the reliability of the study using data from the pilot study carried out on 20 participants outside the sample size. A reliability index of 0.81 was established using Pearson Product Moment Correlation Coefficient which is high, reliable and adequate for the study. The instrument were administered personally by the researcher and all the copies distributed were retrieved without loss. Research questions were analyzed using tables, mean and standard deviation and the mean scores 2.50 and above were seen as agreed while below 2.50 were seen as disagreed. The null hypotheses formulated were tested using z-test at 0.05 alpha level of significance. The weighted mean scores are as follows:

SA = 4 points
A = 3 points
D = 2 points
SD = 1 point

$$\text{Thus, } 4 + 3 + 2 + 1 = \frac{10}{4} = 2.50$$

RESULTS

Research Question One: How does computer assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State?

Weighted mean, standard deviation and rank order statistics of male and female caregivers on the ways computer-assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State

		n = 180				n = 120			
S/No	**Items**	**Male caregivers $\bar{X}$**	**SD**	**Remarks**	**Rank order**	**Female caregivers $\bar{X}$**	**SD**	**Remarks**	**Rank order**
1.	It encourages creativity on the part of the learner which lead to positive thinking and mental development	2.97	1.72	Agreed	3rd	3.1	1.8	Agreed	3rd
2.	It exposes learners to varieties of materials that could motivate them to learn	3.24	1.8	Agreed	2nd	3.3	1.8	Agreed	2nd

3.	It helps to improve educational technology thereby leading to sustainable development	2.11	1.5	Agreed	6th	2.3	1.5	Agreed	6th
4.	It allows learners to work at their own pace and ability	3.04	1.7	Agreed	4th	2.94	1.7	Agreed	4th
5.	It leads to self-directed learning that students can decide when, where and what to learn	2.92	1.7	Agreed	5th	2.92	1.7	Agreed	5th
6.	Privacy helps the shy and slow learners learn	3.10	1.8	Agreed	1st	3.0	1.7	Agreed	1st
	Grand mean	**17.38 2.89**	**10.22 1.70**	**Agreed Agreed**		**17.56 2.92**	**10.2 1.7**	**Agreed Agreed**	

From Table 1 above, items 6, 2, 1, 4, 5 and 3 with a mean scores of 3.10, 3.24, 2.97, 3.04, 2.92 and 2.11 respectively were accepted, as their mean is above 2.50, the respondents agreed that the ways computer-assisted instruction enhances innovative early childhood education in Bayelsa State includes among others; it encourages creativity on the part of the learner which lead to positive thinking, it exposes learners to varieties of materials that could motivate them to learn, it helps to improve educational technology thereby leading to sustainable development, it allows students' to self-directed learning that student can decide when, where and what to learn. The grand mean 2.89 and 2.92 showed that computer-assisted instruction enhances innovative early childhood education for sustainable development goals in Beyelsa State.

Research Question Two: How does team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State?

Weighted mean, standard deviation and rank order statistics of male and female caregivers on how team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State.

		n = 180				**n = 120**			
S/No	**Items**	**Male teachers $\bar{X}$**	**SD**	**Remarks**	**Rank order**	**Female teachers $\bar{X}$**	**SD**	**Remarks**	**Rank order**
7.	Team members help in building capabilities of their combinations through a workable synergy	2.9	1.7	Agreed	6th	3.0	1.7	Agreed	6th
8.	Team member can develop effective mutual relationship to achieve team goals	3.4	1.8	Agreed	1st	3.2	1.8	Agreed	1st
9.	Team teaching affords the opportunity for shared teaching, shared observation as well as self-evaluation procedures that lead to self improvement	3.2	1.8	Agreed	2nd	3.0	1.7	Agreed	2nd
10.	Team work in school help in stress reduction which add to administrative effectiveness	3.2	1.8	Agreed	3rd	3.3	1.8	Agreed	3rd
11.	Through teams cooperation team members become more flexible and more capable of adapting solutions	3.2	1.7	Agreed	4th	3.0	1.7	Agreed	**4th**
12.	Team work in school enhances goals achievement	3.0	1.7	Agreed	5th	3.0	1.7	Agreed	5th
	Grand mean	**18.9 3.15**	**10.6 1.76**	**Agreed Agreed**		**18.5 3.08**	**10.4 1.73**	**Agreed Agreed**	

From Table 2 above, items 8, 9, 10, 11, 12 and 7 with the mean scores of 3.4, 3.3, 3.2, 3.0 and 2.9 respectively were accepted because their mean was above 2.50 in the final analysis. The grand mean of 3.15 and 3.03 showed that team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State.

Test of Hypotheses

The null hypotheses formulated for the study were tested by the means of z-test analysis, which is a test of difference of mean.

H_{01}: There is no significant difference on the mean ratings of male and female caregivers on how computer assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State.

Summary of z-test analysis on the mean ratings of male and female caregivers on how computer assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State

Category	N	$\overline{X}$	SD	Level of sig	Df	z-cal	z-crit	Decision
Male	180	2.89	1.70					
Female	120	2.92	1.7	0.05	298	0.64	+1.96	Not significant

In the above table, the degree of freedom is 298, the z-calculated is 0.64 while the z-critical is +1.96 at 0.05 alpha level. Therefore, the null hypotheses which says that there is no significant difference between the mean ratings of male and female teachers on how computer assisted instruction enhances innovative early childhood education for sustainable development goals in Bayelsa State was not rejected in the final analysis.

H_{02}: There is no significant difference between the mean scores of male and female caregivers on how team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State.

Summary of z-test analysis on the mean ratings of male and female caregivers on how team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State

Category	N	X	SD	Level of sig	Df	z-cal	z-crit	Decision
Male	180	3.15	1.76					
Female	120	3.08	1.73	0.05	298	0.45	+1.96	Not significant

The table showed that the calculated z is 0.45 and the table z is +1.96 at the degree of freedom of 298. Since the calculated z is less than the critical z, the null hypothesis was not rejected, which means, there is no significant difference between the mean ratings of male and female teachers on how team teaching enhances innovative early childhood education for sustainable development goals in Bayelsa State.

DISCUSSION OF FINDINGS

It was generally accepted that computer assisted instruction enhances innovative early childhood in that it encourages creativity on the part of the learner which lead to positive thinking and mental developmental, it exposes learners to varieties of materials that could motivate them to learn more, it helps to improve educational technology thereby leading to sustainable development, it allows students work at their own pace and ability and it leads to self-directed learning. This finding is supported by Nwabueze (2010) who opined that the introduction of computer – assisted instruction into educational practices has widen the scope of opportunities in schools for sustainable development.

The result of the analysis signified that the ways team teaching enhances innovative education include among others; team members help in building capabilities of their combinations through a workable synergy, team member can develop effective mutual relationship to achieve team goals, team teaching affords the opportunity for shared teaching, shared observation, as well as self evaluation procedures that lead to self improvement, team work in school help in stress reduction which add to administrative effectiveness, through teams cooperation team members become more flexible and more capable of adapting solutions and teamwork in school enhances goal achievement. This finding correspond with the work of Smith (1996) in Okoringa (2016) who found out that team members in an organization or institution interact to help each other accomplish specific task and promote one another's success. This is to say that team members must take an interest in both the group and each individual achievement and be prepared to achieve their stated goals collectively.

CONCLUSION

Based on the findings of the study, it was concluded that innovative early childhood education practices stand to correct dysfunctional education systems, promote scientific and technological progress in education and also offers physical, intellectual, moral and spiritual development. There is also a strong need

for team teaching as a means of working cooperatively to achieve organizational goals and sustainable development.

RECOMMENDATIONS

Based on the findings and conclusion, the following recommendations were offered for implementation.

1. Computer – assisted instruction should be encouraged because it exposes learners to varieties of materials that could motivate them to learn more, widen the scope of opportunities for sustainable development goals.
2. Programmes that are figured out as innovative by school administrators should be well implemented so as to achieve the purpose for which such programmes were put forward.

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