

Managing Material Resources for Effective Teaching and Learning in Early Childhood Education Centres in Port Harcourt Metropolis, Rivers State, Nigeria.

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Abstract

This study investigated Managing material resources for effective teaching and learning in Early Childhood Education in Port Harcourt Metropolis of Rivers State. Three research questions and three hypotheses guided the study. The descriptive research design was used. The population for the study was 510 Public Early Childhood Education Centres (ECEC) in Rivers State with 2547 teachers. A sample size of 225 ECEC, 743 teachers and 225 head teachers totalling 968 respondents was used for the study. Stratified random sampling technique was used to draw the sample size. A self-designed questionnaire titled: Managing Material Resources for Effective Teaching and Learning Questionnaire was used to collect data from the respondents. The instrument was validated by three experts while Cronbach alpha was used to achieve a reliability index of 0.79. Mean and standard deviation was used to answer the research questions while z-test was used to test the hypotheses. Findings among others showed that material resources should be used based on the manufacturer's manuals and selection of suitable locations within the school for children's activities should be prioritized. Some recommendations made were: early childhood caregivers and school heads should keep up to date inventories of material resources that will help reduce loss and improve effective teaching and learning in Early Childhood Centres in Rivers State.

Key words: Early childhood, Controlling, Material resources, Organizing, Planning.

Introduction

Early childhood education is the formal training given to children between the ages of one to five. It includes the crèche, kindergarten and nursery. The Federal Government of Nigeria (FGN, 2014) in her National Policy on education given in an educational institution to children prior to their entering the primary school, it is also stated that the purpose of early childhood education shall be to: effect a smooth transition from home to school, prepare the children for the primary level, provide adequate care supervision and security for the children while their parents are at work, inculcate social and morale norms, inculcate in the child a spirit of enquiry and creativity through the exploration of nature, the environment, art, music and the use of toys etc.

This level of education is the foundation for inculcating social values and personal habits which are known to last for a life time. Early childhood education is the critical period for developing the brain to be able to handle information, express emotions normally and be proficient in language. It is basically a period for establishing the foundation for the general improvement of the child most significantly, the experience of a child in transition to primary education is critical because what is learnt, prior to primary school need to be sustained for the child to do well later in life. Ajala (2012), stated that if early childhood education was not supported by stimulating

and enriching physical and social environment, the chances of a child's brain developing to its full potentials will be slim.

A key element in the delivery of quality early childhood education is the provision of adequate quality material resources.

Material resources are physical resources utilized by educational institutions in the process of implementing educational programme. They act as ancillaries for the achievement of educational goals and objectives. They encompass classroom, video CDs, television, multimedia computer software, white board, interactive or smart board, recreational ground, toilet facilities, just to mention a few, they are used in the teaching-learning process to implement the curriculum so effectively as to achieve educational objectives. Knezevich (2006) explained that material resources does not necessarily mean the school buildings alone, it is the provision of safe structure, adequate sanitary facilities, adequate shelter, balanced visual environment, room for work and play, the various types of equipment and materials on hand in schools, the size of the learning classroom within the school building, as well as the nature of the classroom environment. All of these constitute material resources in early childhood education centres. However, for the goals/objectives of early childhood education to be actualized appropriate management of material resources is highly required.

Management of material resources in education has been observed as a powerful tool to bring about effective teaching and learning and material resource management in early childhood centres is therefore the process of ensuring that building and other technical systems support the operations of the school. The material resources in pre-school are very essential; they are needed for realization of the objectives of that level of education. Material resource management in early childhood centres is a tactical planning tool for modernization of the existing facilities as well as developing helpful measures for continuous maintenance, reconstruction and rejuvenation. Therefore, management of material resources in classroom setting involves the application of scientific methods planning, organizing, decision making, coordination and controlling of the physical environment of practical learning for the actualization of the educational goals and objectives (Asiabaka, 2008). Management of material resources include planning, procurement and provision in the right quality and quantity, supervision, auditing and maintenance of such facilities (Amie-Ogan, 2020).

Effective or efficient learning could be said to have actually taken place when the material resources which are believed to aid the teaching-learning process are made available in school in the right quality and quantity.

Conceptual clarification of material resources management

The school administrator is often charged with the responsibility of maintenance and replacement of most school facilities depending on the availability of fund. Okafor (2006) noted that material resource management is as important as the human resource management. Material resources in early childhood education tends to depreciate as soon as they are provided and put into use. Therefore, there is a need for maintenance through repair and servicing of components in order to restore their physical condition and sustain their working capacity. Maintenance of the material resources by school administrators in early childhood education enhance performance and durability of the materials for teaching the pupils. The maintenance of the material resources according to Adeboyeje (2000) are preventive, corrective, breakdown and shutdown maintenance services. Preventive maintenance occurs regularly by checking and rechecking the available material resources use for educational purposes (Abdulkareem and Fasasi, 2013). Preventive is not only better but it is also cheaper than any other measures, it is proactive in nature, corrective maintenance involves reactivation or replacement breakdown completely, and a major repair or replacement may be needed by the school management (Adeboyeji, 2000).

Material resource management start from the planning of such material. Planning for material resources in the early childhood education centres entails thinking ahead and deciding on actions to take in using the instructional materials and facilities to improve learning in the school. Wanda (2013) stated that planning skills equip the teachers to think ahead and accomplish educational goals. At the inception of a school, certain basic materials stipulated by government must be available at the school. These facilities must be adequately planned for. The facilities include the impermanent properties and physical infrastructure. The infrastructures are assets rooted in and located on the land belonging to an educational institution and used for educational purposes.

Organization of material resources is also an important responsibility of the early childhood administrators in managing resources. This implies arranging or putting the required material resources in order, which will take into consideration the material to be used, the time of use and the activities or play to be performed. According to Olaitan, et al (2000) the following guides are suggested for organizing new and existing facilities: review the occupational objectives and

goals of the programme; list and arrange the learning activities which are meant to take place, examine the equipment and materials necessary for the projected learning activities, determine and arrange the approximate boundaries of each materials desired for the learning activities among others. Nwachukwu (2006) pointed out that the teacher decides which organizing element among those within the chosen system will be most relevant, most meaningful and most useful materials for the specific pupil who should work and gain experiences using the materials. In order to facilitate progress in classroom instruction, the course of study has to be organized as well. The organization of course of study will enhance pupils' appreciation of the programme and help in their career choice. The main contribution of organization is that it ensures proper utilizations of available materials. It therefore becomes imperative that material resources in early childhood education be effectively organized for instructional delivery through the acquisition of the relevant resource management skills by the administrators. These administrators need to facilitate instructional delivery in such a way that it will be easy for the teacher to teach and the learners to learn. The classroom must be arranged in a manner that it will assist the teacher to effectively manage the class. Pre-arrangement of instructional materials are important because, time required for instruction will be wasted for class reorganization if the classroom is not well organized. Instructional materials in the classroom have to be organized in such a manner to facilitate easy accessibility during instructional delivery. Logical sequences of activities are required in order to effectively organize a pre-school classroom and materials for effective instructional delivery.

Controlling involves seeing that material resources are used according to specifications and secondly taking remedial actions when needed to prevent unsatisfactory results. Material resource management in schools has direct impacts on the teaching and learning process and is a key determinant of educational outcomes. Movement of materials in school should be controlled to avoid loss of materials. Uwaifo (2009) observed that these materials suffer perforation in the hands of teachers and learners. This is an indication of poor management of material resources as rightly stated by Adebessin (2003) that mismanagement of available material resources in pre-school education has aggravated its inadequacy. This implies that effective supervision should be adopted to control the use of material resources.

Statement of the problem

Early childhood education is given to children in preparation for primary school education. It includes the crèche, the nursery and the kindergarten. The objective of preschool education includes providing a smooth transition from home to school, providing adequate care and supervision for the children when parents are at work and preparing children for primary education amongst others. The school system may not be able to attain these set out objectives without proper management of material resources. However, it was observed that material resources in early childhood centres are insufficient and sometimes the existing ones are not properly organized and stored by the care givers for easy access when needed, supervised, maintained and are under-utilized or over-utilized. These factors have discouraged teachers and reduce their passion for teaching. Based on the aforementioned problems of improper management of material resources, the researcher decided to proffer solution to managing early childhood education in Rivers State.

Purpose of the study

The main purpose of the study is to investigate the influence of material resource management for effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State, Nigeria, Specifically the study sought to:

1. Investigate the extent to which planning managing material resources influence effective teaching and learning in early childhood education centres in Port Harcourt Metropolis of Rivers State.
2. Ascertain the extent to which organizing material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State.
3. Determine the extent to which controlling material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State.

Research questions

Based on the objectives of the study, the following research questions guided the study:

1. To what extent does planning material resources influence effective teaching and learning in early childhood education centres in Port Harcourt Metropolis of Rivers State?
2. To what extent does organizing material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State?

3. To what extent does controlling material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State?

Hypothesis

1. There is no significant difference in the mean responses of caregivers and head teachers on the extent to which planning material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State.
2. There is no significant difference in the mean responses of caregivers and head teachers on the extent to which organizing material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State.
3. There is no significant difference in the mean responses of caregivers and head teachers on the extent to which controlling material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis Rivers State.

Methodology

The research design used for this study was the descriptive survey design. The population for the study was the 510 public Early Childhood Education Centres in Rivers State, 510 head teachers and 2037 caregivers, totalling 2547 respondents. A sampling size of 225 Early Childhood Education Canters representing 44% of the population was used. Stratified random sampling technique using balloting without replacement was used to draw a sample of 225 head teachers and 734 caregivers totalling 968 respondents. A self-designed questionnaire was used to collect data from the respondents. The instrument had two (2) sections, section A and B. Section A dealt with demographic information while section B had 26 items. The response pattern of the items was a structured four-point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE). With values 4, 3, 2 and 1 respectively. Cronbach alpha reliability techniques were used to determine and obtain a reliability of index of 0.79. Mean, standard Deviation statistics was used to answer the research questions. In terms of decision mean items below 2.50 are rated to a low extent while mean items between 2.50 above is rated to a high extent. Also, the null hypothesis will be accepted if the critical value is higher than the calculated value of 1.96 and will be rejected if the critical value is lower than the two calculated values. The hypothesis was tested using z-test statistics at 0.05 level of significance. Any response therefore, with a calculated z-value above the z-critical value of 1.96 was rejected and below 1.96 was accepted.

RESULTS

Research Question 1: To what extent does planning material resources influence effective teaching and learning in early childhood education centres in Port Harcourt Metropolis of Rivers State?

Table 1: Mean Responses of caregivers and Head Teachers on Planning Strategies Needed for the Management of Material Resources for Effective Teaching and learning in early childhood Education in Rivers State.

S/ N	Questionnaires Item	Teachers		Head Teachers		Mean Set	Remark
		$N_1 = 743$ $X_1 = SD_1$		$N_2 = 225$ $X_2 = SD_2$			
1.	Material resources should be planned for based on current pupils' enrolment	2.75	0.89	2.79	0.88	2.78	HE
2	Material resources should be used based on the Manufacture's manuals.	2.76	0.87	3.21	0.79	3.00	HE
3	Standards should not be compromised for provision of material resources in the centres	2.84	0.88	2.80	0.88	2.82	HE
4	There should be a plan for routine maintenance of available materials in the centres	2.91	0.88	2.76	0.88	2.84	HE
5.	Selecting suitable location within school for children activities should be prioritized	2.92	0.87	2.76	0.86	2.84	HE
6	Selecting toys and other instructional materials based on age of the pupils is important	2.77	0.89	2.74	0.89	2.76	HE
7	Teachers and minders should be assigned responsibility roles on the proper use of toys by pupils	2.41	0.49	2.40	0.49	2.41	HE
8	Equipment and materials should be planned based on the preschool curriculum	2.90	0.85	2.68	0.83	2.79	HE
9	Decisions should be taken on the methods of storage required for materials used in the centers	2.92	0.82	2.74	0.83	2.83	HE
10	Maintenance schedule should be developed for regular maintenance of tools, equipment and machines	2.79	0.81	2.40	0.89	2.60	HE
Aggregate		2.80	0.83	2.73	0.82	2.77	

Table 1 above revealed that all items except item 7 on planning strategies were rated by the respondents above the criterion mean of 2.50. This signifies that all the items except item 7 on planning strategies are effective in the management of material resources for effective teaching and learning in early childhood education centres.

Research Question 2: To what extent does organizing material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State?

S/ N	Questionnaires Item	Teachers		Head Teachers		Mean Set	Remark
		$N_1 =$ $X_1 =$	743 SD₁	$N_2 =$ $X_2 =$	225 SD₂		
11	Arranging materials resources based on form and colour to captivate pupils interest	2.92	0.87	2.76	0.87	2.84	HE
12	Storing materials before and after use	2.80	0.88	2.84	0.88	2.82	HE
13	Taking inventory of materials that are no longer in use and those that need repairs	2.79	0.81	2.80	0.88	2.80	HE
14.	Appropriate arranging materials in order of utilization is an organization strategy for managing material resources	2.77	0.89	2.74	0.89	2.76	HE
15.	Instructional material are categorize under indoor and outdoor materials	2.76	0.86	2.76	0.86	2.76	HE
16.	Materials should be used for activities they are made for	2.84	0.88	2.74	0.89	2.79	HE
17.	Materials should be organized to facilitate movement of people in the classroom	2.68	0.83	2.92	0.82	2.80	HE
18.	Methods of storage, and security of tools and equipment are important in material resources management	2.90	0.85	2.68	0.83	2.79	HE
19.	Predictive maintenance of materials should be adopted to avoid breakdown of materials resources	2.77	0.82	2.74	0.83	2.76	HE
	Aggregate	2.80	0.85	2.78	0.86	2.79	HE

Table 2 showed that all items on organizational strategies were rated by the respondents above the criterion mean of 2.50. This signifies that all the items on organizational strategies are effective in the management of material resources for effective teaching and learning in early childhood education.

Research Question 3: To what extent does controlling material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State?

Table 3: Mean Responses of caregivers and Head Teachers on Controlling Strategies Needed for the Management of Material Resources for Effective Teaching and Learning in early Childhood Education in Rivers State.

S/ N	Questionnaires Item	Teachers		Head Teachers		Mean Set	Remark
		$N_1 =$ $X_1 =$	743 SD₁	$N_2 =$ $X_2 =$	225 SD₂		
20	Assigning competent store officer to be responsible for the security of toys and instructional materials	2.76	0.86	2.68	0.83	2.72	HE
21	Monitoring the movement of instructional materials is important	2.70	0.78	2.79	0.81	2.75	
22.	Detecting misuse of materials agree with the view to check on such demeanor	2.79	0.81	2.64	0.83	2.72	
23.	Making necessary corrections in the conduct of pupils while using materials resources	2.74	0.89	2.92	0.82	2.83	
24.	Preventing damage to the materials and available facilities in the school should be given premium	2.55	1.03	2.49	0.50	2.52	
25.	An identification system should be put in place to deter material resources theft	2.84	0.88	2.70	0.78	2.78	
26.	Pupils should be regular monitored and guided in the use of appropriate material resources	2.92	0.82	2.36	1.03	2.74	
	Aggregate	2.76	0.87	2.68	0.80	2.72	

Table 3 above showed that all the items on controlling strategies were rated by the respondents above the criterion mean of 2.50. This signifies that all the items on controlling strategies are effective in the management of material resources for effective teaching and learning in early childhood education.

Hypotheses

HO₁: There is no significant difference in the mean responses of caregivers and head teachers on the extent to which planning material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State.

Table 4: z-test analysis of difference between the mean opinion scores of teachers and headteachers on the planning strategies needed for the management of material resources for effective teaching and learning in early childhood education in Rivers State.

Respondents	X	SD	Df	SL	z-cal	z-cri	Decision
Caregivers	2.80	0.83					No significant differences
Head Teachers	2.73	0.82	966	0.05	1.12	±1.96	

Table 4 shows a summary of mean, standard deviation and z-test of difference between the mean opinions of teachers and head teachers on the planning strategies needed for the management of material resources for effective teaching and learning in early childhood education. The z-test calculated stood at 1.12 while the z-critical value was ±1.96, using 966 degrees of freedom at 0.05 alpha level of significance. Since the z-calculated is less than the z-critical, the null hypothesis was accepted. This infers that, there is no significant difference between the mean scores in opinions of teachers and head teachers on the planning strategies needed for the management of material resources for effective teaching and learning in early childhood education in Rivers State.

H02: There is no significant difference in the mean responses of caregivers and head teachers on the extent to which organizing material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis of Rivers State.

Table 5: z-test analysis of difference between the mean opinion scores of teachers and head teachers on the organizational strategies needed for the management of material resources for effective teaching and learning in early childhood education in Rivers State.

Respondents	N	X	SD	Df	SL	z-cal	z-cri	Decision
Teachers	743	2.80	0.83					Accepted

Head Teachers	225	2.73	0.86	966	0.05	0.32	1.96
Total	968						

Table 5 shows a summary of mean, standard deviation and z-test of difference between the mean opinions of teachers and head teachers on the organizational strategies needed for the management of material resources for effective teaching and learning in early childhood education. The z-calculated is 0.32 while the z-critical value was 1.96, using 966 degrees of freedom at 0.05 alpha level of significance. Since the z-calculated is less than the z-critical, the null hypothesis was accepted. This infers that, there is no a significance difference between the mean opinion scores of teachers and head teachers on the organizational strategies needed for the management of material resources for effective teaching and learning in early childhood education.

H03: There is no significant difference in the mean responses of caregivers and head teachers on the extent to which controlling material resources influence effective teaching and learning in early childhood education in Port Harcourt Metropolis Rivers State.

Table 5: z-test analysis of difference between the mean opinion scores of caregivers and head teachers on the controlling strategies needed for the management of material resources for effective teaching and learning in early childhood education in Rivers State.

Respondents	N	X	SD	Df	SL	z-cal	z-cri	Decision
Teachers	743	2.76	1.16					Accepted
Head Teachers	225	2.68	1.19	966	0.05	1.29	1.96	
Total	968							

Table 6 shows a summary of mean, standard deviation and z-test of difference between the mean opinions of teachers and head teachers on the controlling strategies needed for the management of material resources for effective teaching and learning in early childhood education. The z-test statistics calculated stood at 1.29 while the z-critical value was 1.96, using 966 degrees of freedom at 0.05 alpha level of significance. Since the z-calculated is less than the Critical, the null hypothesis was accepted. This infers that, there is no significance difference between the

mean opinion scores of teachers and head teachers on the controlling strategies needed for the management of material resources for effective teaching and learning in early childhood education.

Discussion of Findings

Findings on research question 1 showed that planning strategies needed for the management of material resources for effective teaching and learning in early childhood education: that material resources should be used based on the manufacturers manuals; there should be a plan for routine maintenance of available materials in the centres, selecting suitable location within school for children activities should be prioritized, decision should be taken on the methods of storage required for materials used in the centres, standard should not be compromised for provision of material resources in the canters, equipment and materials should be planned based on the preschool curriculum, material resources should be planned for based on current pupils enrolment, selecting toys and other instructional materials based on age of the pupils is important and maintenance schedule should be developed for regular maintenance of tools, equipment and machines with a grand mean of 2.77. this is in agreement with Izuagie (2015) who opined that the following planning skills are needed for the management of material resources in pre-school via determining children instructional activities in the pre-school, planning toys and facilities in the pre-school based on current students enrolment; setting standard for provision of toys and providing adequate number of toys and instructional materials for effective use by the pre-schoolers. The findings of this study also collaborated with the report New Jersey State Department of Education (2009) which identified the major planning skill needed by teachers to include identifying the materials resources to be used to foster instruction amongst others. Planning activities are the bedrock of any successful management of material resources.

Findings on research question 2 revealed that: arranging material resources based on form and colour to captivate pupils interest, storing materials before and after use taking inventory of materials that are no longer in use and those that need repairs, organizing material to facilitate movement of people in the classroom, materials being used for activities they are made for, method of storage and security of tools or equipment appropriate arrangement of materials in order of utilization and adoption of predictive maintenance of materials in order to avoid breakdown of material resources were organizational strategies needed for the management of

material resources for effective teaching and learning early childhood education with a grand mean of 2.79. This is in agreement with Ogbuanya, Nweke and Ugwoka (2017) whose independent study revealed some organizational strategies needed for material resources management as arrangement of tools and material before and after use, grouping of students during shop practice to enhance mastery as well as sorting materials in cabinets. These findings also support Ajala (2012), whose study on initiatives for material resources management in pre-school showed that items such as arranging all the materials in conformity with safety regulation, providing guideline, using material in groups, arranging material in order of utilization and so on are effective organizational strategies.

Finding on research question 3 showed that making necessary correction in the conduct of peoples while using material resources use of identification system to deter material theft, monitoring the movement of instructional materials, pupils regular monitoring and guided use of appropriate material resources, assigning competent store officer to be responsible for the security of toys and instructional materials detecting misuse of material with the view to check such demeanour and preventing damage to the materials and available facilities being given premium were controlling strategies needed for the management of material resources for effective teaching and learning in early childhood education with a grand mean score of 2.72. Again, this finding was in agreement with the view of Izuagie (2015) who stated that skills of controlling resources in teaching and learning in early childhood centre involve assigning store officer, giving appropriate directives for the use of materials, controlling the application of instructional material and monitoring the movement of instructional materials that are movable. Sampong (2006) in agreement also listed the following as controlling strategies needed for material resource management which is an identification system to deter tool and equipment theft students should be guided in the use of appropriate materials, tools and predictive maintenance of materials should be made.

The study revealed that there is no significant difference between the mean opinion scores of teacher and head teachers on the planning, organizational and controlling strategies needed for the management of material resources for effective teaching and learning in early childhood education. This shows that the two groups have the same perception on the strategies needed for material resource management.

Conclusion

From the findings of the study, proper education of the child at the pre-primary level is of global concern because economic task on most parents has made it inevitable and the child of today is the adult of tomorrow. Child-centred and child-friendly education through adequate leadership and effective management of resources will boost the quality development of these children. Any mal-formation of the child at this level, physically, spiritually, socially and intellectually affects the adult personality. Therefore, all stake-holders of education should ensure that both instructional and recreational material resources, provided for early child education are well guided and properly channelled for meritorious outcomes.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Head teachers should use routine maintenance, preventive maintenance, appropriate storage and monitoring strategies as part of their prioritized plans for toys, instructional aids, school buildings and facilities in early childhood centres in rivers state.
2. Early childhood care givers and school heads should keep up to date inventories of material resources that will help to reduce lost and improve effective teaching and learning.
3. Early childhood care givers need the knowledge and skill of controlling to be able to manage material resources effectively.

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