

PROMOTING E-LEARNING THROUGH RESOURCE ADEQUACY IN EARLY CHILDHOOD CARE DEVELOPMENT AND EDUCATION (ECCDE) CENTRES IN DELTA STATE

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Abstract

This study investigated the essence of promoting e-learning through resource adequacy in early childhood care development and education (ECCDE) centres in Delta State. Three research questions guided the study. A descriptive survey research design was employed. The population for the study comprised 1,096 caregivers in 679 ECCDE centres in Delta State. Sample size of the study constituted 110 caregivers selected from 68 ECCDE centres in Delta State using the stratified random sampling technique and drawn at 10%. An 18-item questionnaire developed by the researcher and titled “E-Learning Resource Adequacy Questionnaire (ELRAQ)” served as an instrument for data collection. The research instrument was validated by three experts from the Department of Early Childhood Care, including a Measurement and Evaluation expert from the Faculty of Education, Nnamdi Azikiwe University, Awka. Reliability of the instrument was determined through a pilot-test by sampling 15 caregivers from 3 ECCDE centres in Anambra State. Data obtained from the sampled caregivers were computed using the Cronbach Alpha method which gave internal consistency reliability coefficients of 0.65, 0.74 and 0.66 for the three clusters and summed up to give an overall reliability coefficient value of 0.68. Data were analyzed using mean score at 2.50 rating and standard deviation. Findings of the study indicated among others that the multimedia, on-line and virtual image applications e-learning resources were less adequate in early childhood care and

development education (ECCDE) centres in Delta State for promoting teaching and learning. From the findings of the study, it was recommended among others that Delta State Government should equip and flourish the ECCDE centres with adequate multimedia and online electronic resources in order to effectively promote e-learning in the classrooms. The private sector should also be encouraged to provide most of the multimedia resources like television, radio cassette player, ipods, ipads and projectors, among others, for promoting e-learning in the ECCDE centres in Delta State.

Keywords: *Promoting, E-Learning, Resources, Adequacy, ECCDE centres*

Early Childhood Care Development and Education (ECCDE) is education provided for children below the ages of 5 years especially at the ECCDE centres. The Federal Republic of Nigeria (FRN, 2013) stated that ECCDE is the care, protection, stimulation and learning in children from 0-5 years in a crèche or nursery school whose main aim is to prepare children for primary level of education. Other aims of educating children at this early stage of life as further indicated by the Federal Republic of Nigeria (FRN, 2013) in the National Policy on Education (NPE) include providing adequate care, supervision and security for the children while their parents are at work. Inculcating in children the spirit of enquiry and creativity through exploration of nature, the environment, art, music and the use of toys, among others. Developing a sense of co-operation and team spirit in children and teaching the rudiments of numbers, letters, colours, shapes and forms, through plays. Inculcating social, moral norms and values in children and among others. From the foregoing aims of establishing the ECCDE, educating children at their very tender ages in the ECCDE centres seems to be a difficult task to handle and cannot be effectively accomplished without the use or adequacy of e-learning technologies and resources. This is so because children tend to learn faster through practical and play-way method with the support of e-learning resources, equipment and devices. For instances, when such virtual electronic devices like the computer is presented in the classroom, children focus more attention in the teaching and learning task. Computer as part of e-learning training resources aims at developing in children different types of skills like manipulative, listening, communicative, interpersonal, questioning and co-operative skills, among others, during classroom interactions. It helps to build and support children's cognitive, affective and psychomotor learning (Ghirardini, 2011).

E-learning therefore as described within the context of this present study simply entails the use of electronic resources, equipment or devices in teaching and learning in the ECCDE centres. According to Ghirardini (2011), e-learning can be described as use

of different electronic instructional methods like synchronous and asynchronous methods to facilitate children learning. It is delivered using different media elements, such as text, graphics, audio, visual and video. It provides as much learning support as possible (through explanations, examples, interactivity, feedback, glossaries, etc.), in order to make learners self-sufficient. E-learning as described by Patil (2015) include multimedia learning, technology enhances learning, computer based instruction, computer based training, computer assisted instruction or computer aided instruction, internet based training, web based training, online education, virtual education, virtual education environments. Each of these alternative names emphasis a particular aspect, component or delivery method. Examples of e-learning resources which can be utilized in the ECCDE centres will include the use of multimedia devices like radio, television, ipods, ipads, smart phones, different projectors, and other software components and applications like the internet, Microsoft applications, graphics, among others, as indicated by Ghirardini (2011) and Patil (2015). Patil (2015) observed that e-learning can occur through numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning. However, there are quite some numerous advantages for using e-learning technology and learning materials in the ECCDE classroom and they include that e-learning creates avenues for a more active learning class, diversified teaching method, better student attention and realization, effective time management for teachers or caregivers and visual stimulation (Van, 2016). E-learning can offer effective instructional methods, such as practicing with associated feedback, combining collaboration activities with self-paced study, personalizing learning paths based on learners' needs and using simulation and games. In citing examples, children and their instructors can use communication e-learning tools such as e-mails, discussion forums, chats, polls, whiteboards, application sharing and audio and video conferencing to communicate and work together. Also, effective use of audio greatly increases the effectiveness of a course. Audio can be used in combination with on-screen text to summarize or expand key points or to accompany video sequences. Audio narration is more effective than printed text when providing comments on animations, video sequences or a series of static frames showing a transformation. Indeed, learners' visual channel can become loaded if they have to process graphics than the printed words.

Given all the aforementioned benefits, promoting e-learning at the ECCDE centres through resources adequacy is of utmost importance but in reality this medium of learning is yet to be highly utilized in all the ECCDE centres in Delta State. This has been the main thrust of this study. Few observations by the researcher in Delta State showcase situations where many of the caregivers in the ECCDE centres are yet to effectively utilize many of these e-learning resources in the teaching and learning in the centres. Several studies like that of Van (2016) for instance showed that although

students need e-learning but most times these resources are found wanting. Other studies also have their mix about the use of e-learning in education. It is therefore upon this background that the present study sought to investigate the essence of promoting e-learning through resources adequacy in early childhood care and development education (ECCDE) centres in Delta State.

Statement of the Problem

Educating children at their very tender ages in the ECCDE seems to be a difficult task to handle because children at this stage of life need to experience the reality of teaching not only on abstract information. Children while experiencing the real teaching makes them become more active and engaging in learning more than been passive learners. E-learning is one way of promoting children learning at the ECCDE centres because it provides opportunities for learners to become more adaptive and participative during teaching. The situation of things in the ECCDE centres in Delta State paints a picture where many of the caregivers still depend on the traditional method of teaching. The use of technology in promoting teaching and learning are yet to flourish. The situation of poor learning in the ECCDE centres in Delta State raises a lot of concern and questions for both the researcher and other education stakeholders to determine whether technological resources such as multimedia resources , online resources and virtual image resources, are adequate for promoting e-learning in early childhood care and development education (ECCDE) centres. For quality education to triumph there is need for focus to be diverted in the promotion of e-learning in the ECCDE centres through resources adequacy, which stands to be the problem of the present study.

Purpose of the Study

The purpose of this study was to determine the essence of promoting e-learning through resources adequacy in early childhood care and development education (ECCDE) centres in Delta State. Specifically, the study aimed at ascertaining promoting e-learning through adequacy of:

1. Multimedia resources in early childhood care and development education (ECCDE) centres in Delta State.
2. On-line resources in early childhood care and development education (ECCDE) centres in Delta State.
3. Virtual image applications in early childhood care and development education (ECCDE) centres in Delta State.

Research Questions

The following research questions guided the study:

1. How adequate are the multimedia resources for promoting e-learning in early childhood care and development education (ECCDE) centres in Delta State?
2. How adequate are the on-line resources for promoting e-learning in early childhood care and development education (ECCDE) centres in Delta State?
3. How adequate are the virtual image applications for promoting e-learning in early childhood care and development education (ECCDE) centres in Delta State?

Method

Research Design

A descriptive survey research design was employed in the study. Nworgu (2015) opined that this research design enables the researcher to collect data and describe them in a systematic manner of the characteristics, features or facts about a given population. Studies of such nature are interested in describing certain variables in relation to the population of the study and generalization drawn. This research design was chosen in order to enable the researcher conduct a field investigation and gather information (that is, data) from a sample of a large population of caregivers in the ECCDE centres, and use a statistical tool to analyze data and draw generalization based on this study on promoting e-learning through resources adequacy in early childhood care and development education (ECCDE) centres in Delta State.

Population

The population for the study comprised 1,096 caregivers in 679 public ECCDE centres in Delta State. However, in Delta State, there exists both public and private ECCDE centres but the present study only focused on public ECCDE centres. This information was collected from the Planning, Research and Statistics Department of the Universal Basic Education Commission, Delta State (2019).

Sample and Sampling Technique

Sample size of the study constituted 110 caregivers selected from 68 public ECCDE centres in Delta State using the stratified random sampling technique and drawn at 10%. The stratified random sampling technique was employed to enable the researcher control a sizeable number of caregivers in the ECCDE in order to carry out the study. In this case, the caregivers and the ECCDE centres were stratified based on their location according to the 25 LGAs in Delta State, thereafter selection were made using 10%. Only 10% of the caregivers including the ECCDE centres were selected from the population. This is in line with the recommendations of Nworgu (2015) who opined that 10% to 80% of a given large population is okay for any study.

Instrument for Data Collection

An 18-item questionnaire developed by the researcher and titled “E-Learning Resource Adequacy Questionnaire (ELRAQ)” served as an instrument for data collection. The research instrument was constructed based on the purpose of the study and research questions. The response items on the questionnaire was structured on a 4 point scale of Very Highly Adequate (VHA) – 4, Highly Adequate (HA) – 3, Less Adequate (LA) – 2 and Very Less Adequate (VLA) – 1 in order to answer the statements on the research instrument. Each of the clusters in the questionnaire represented the research questions.

Validation of the Instrument

The research instrument was validated by three experts from the Department of Early Childhood Care, including a Measurement and Evaluation expert from the Faculty of Education, Nnamdi Azikiwe University, Awka. These experts scrutinized the research instrument and determined its face validity. Corrections and useful suggestions made by the experts on the instrument were incorporated before final drafts were made for distribution. Areas where the experts made corrections on the instrument were based on double-barrel items, content coverage and sentence construction.

Reliability of the Instrument

Reliability of the instrument was determined through a pilot-test by sampling 15 caregivers from 3 ECCDE centres in Anambra State on a single test administration. The ECCDE centres in Anambra State although had similarities with those in Delta State, but this area was not part of the study. Carrying out the pilot test in Anambra State prevented a situation of bias on the part of those to be used as sample in the present study. After the test, data obtained from the sampled caregivers were computed using the Cronbach Alpha method which gave internal consistency reliability coefficients of 0.65, 0.74 and 0.66 for the three clusters and summed up to give an overall reliability coefficient value of 0.68. This result showed that the instrument was reliable to collect the necessary data for the study.

Method of Data Collection

Information was retrieved from the respondents through a personal, direct contact and hand delivery process with the help of three research assistants. These research assistants were students from primary education department from one of the COEs who were instructed on how to communicate to the respondents to retrieve the necessary information from them, having been briefed about the purpose of the study. An on the spot method was used to retrieve all the copies of the questionnaire, in essence, both the researcher and research assistants waited for the respondents to fill the questionnaire and retrieved them immediately. Exercise of distributing the questionnaire to the respondents

took a period of one week. A total of 110 copies of the questionnaire were distributed to the respondents and all of them were retrieved, whose rate of return was at a 100%.

Method of Data Analysis

Data were analyzed using mean score at 2.50 rating and standard deviation. The decision rule for taking decisions on the items on the instrument was bench marked at 2.50 based on the 4 point scale response items. Any mean score that rated at 2.50 and above was considered to be in agreement with the statement and therefore considered as Highly Adequate. Any mean score that rated below 2.50 was considered to be in disagreement with the statement and therefore considered as Less Adequate.

Results

Research Question 1: How adequate are the multimedia resources for promoting e-learning in early childhood care and development education (ECCDE) centres in Delta State?

Table 1: Mean Scores and SD of Respondents Rating on Adequacy of Multimedia Resources for Promoting E-Learning in Early Childhood Care and Development Education (ECCDE) Centres in Delta State

N = 110

S/N	Please indicate how adequate the following multimedia resources are for promoting e-learning in your centre	VHA	HA	LA	VLA	X	SD	Decision
1	Television	10	11	46	43	1.89	0.92	Less Adequate
2	Radio cassette player	6	18	54	32	1.98	0.82	Less Adequate
3	ipods	8	14	65	23	2.06	0.79	Less Adequate
4	ipads tablets	11	13	50	36	1.99	0.92	Less Adequate
5	CD-ROM/DVD packages	14	16	30	50	1.95	1.05	Less Adequate
6	Laptops	5	17	41	47	1.82	0.85	Less Adequate
7	Desktop computers with monitors	9	10	35	56	1.75	0.93	Less Adequate
8	Projectors	15	20	48	27	2.21	0.96	Less Adequate
9	Interactive whiteboard	14	16	42	38	2.05	1.00	Less Adequate
10	Interactive video and films	3	12	42	53	1.68	0.77	Less Adequate

Grand Mean	=	1.94	0.92	Less Adequate
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Analysis of result presented in Table 1 revealed that all the ten items from 1 to 10 rated below 2.50 of the acceptable mean score in agreement with all the statements. None of the items rated above 2.50 of the acceptable mean score in order to disagree with any of the statements in the table. Moreover, the grand mean of 1.94 indicated that the respondents reacted negatively to all the statements which showed the multimedia resources for promoting e-learning in the ECCDE centres in Delta State were less adequate. The standard deviations are small showing that the respondents' scores are tightly clustered around the mean.

Research Question 2: How adequate are the on-line resources for promoting e-learning in early childhood care and development education (ECCDE) centres in Delta State?

Table 2: Mean Scores and SD of Respondents Rating on Adequacy of On-Line Resources for Promoting E-Learning in Early Childhood Care and Development Education (ECCDE) Centres in Delta State

N = 110

S/ N	Please indicate how adequate the following on-line resources are for promoting e-learning in your centre	VHA	HA	LA	VLA	X	SD	Decision
11	Internet	9	13	43	45	1.87	0.92	Less Adequate
12	YouTube	8	11	56	35	1.93	0.84	Less Adequate
13	Webcasting	13	18	37	42	2.02	1.01	Less Adequate
14	Video and audio conferencing	5	10	42	53	1.70	0.82	Less Adequate
15	Skype	7	6	40	57	1.66	0.85	Less Adequate
Grand Mean		=				1.84	0.90	Less Adequate

Analysis of result presented in Table 2 revealed that all the five items from 11 to 15 rated below 2.50 of the acceptable mean score in agreement with all the statements. None of the items rated above 2.50 of the acceptable mean score in order to disagree with any of the statements in the table. Moreover, the grand mean of 1.94 indicated that the respondents reacted negatively to all the statements which showed the online resources for promoting e-learning in the ECCDE centres in Delta State were less adequate. The standard deviations are small showing that the respondents' scores are tightly clustered around the mean.

Research Question 3: How adequate are the virtual image applications for promoting e-learning in early childhood care and development education (ECCDE) centres in Delta State?

Table 3: Mean Scores and SD of Respondents Rating on Adequacy of Virtual Image Applications for Promoting E-Learning in Early Childhood Care and Development Education (ECCDE) Centres in Delta State

N = 110

S/N	Please indicate how adequate the following virtual image applications are for promoting e-learning in your centre	VH A	HA	L A	VL A	X	SD	Decision
16	Animations	5	11	64	30	1.9 2	0.7 4	Less Adequate
17	Cartoons	29	33	27	21	2.6 4	1.0 7	Adequate
18	PowerPoint graphic designs	11	15	39	45	1.9 3	0.9 7	Less Adequate
Grand Mean		=				2.1 6	0.9 9	Less Adequate

Analysis of result presented in Table 3 revealed that two of the items 16 and 18 rated below 2.50 of the acceptable mean score in disagreement with the statements. Only item 17 was rated above 2.50 of the acceptable mean score showing that the respondents accepted that cartoons are adequate for promoting e-learning in the ECCDE centres in Delta State. The standard deviations are small signifying homogeneity in the respondents responses for the items raised. The table also showed that the respondents recorded a grand mean score of 2.16. Going by the bench mark for interpreting the respondents score, the answer to RQ3 is that virtual image applications for promoting e-learning in ECCDE centres in Delta State is less adequate.

Discussion of the Findings

The findings of this study generally revealed that electronic resources were less adequate for promoting e-learning in the ECCDE centres in Delta State. It was discovered that multimedia resources such as the television, radio cassette player, ipods, ipads tablets, CD-Rom/DVD packages, laptops, desktop computers with monitors, projectors, interactive whiteboard and interactive video and films, were less adequate in the ECCDE centres. Whereby the multimedia resources were less adequate in the ECCDE centres this could create difficulties in promoting children learning. Thus, this finding corroborates with the finding of Van (2016) study which indicated that although students need e-learning but most times these resources are found wanting. The finding of the study indicated that such online resources like the internet, YouTube, webcasting,

video and audio conferencing and Skype were less adequate for promoting e-learning in the ECCDE centres in Delta State. This finding agrees with the finding of Van (2016) which showed that e-learning resources were not adequate for students' learning. However, whereby the online resources are adequately provided, they could be effective tools for promoting children learning in the ECCDE centres.

It was further discovered that virtual image resources like the use of animations and PowerPoint graphic designs were less adequate for promoting e-learning in the ECCDE centres in Delta State. Animations, cartoons and graphic designs are effective virtual applications that could be utilized in inculcating some social skills in children when adequately provided. Thus, this finding agrees with the finding of Patil (2015) who discovered that e-learning which can occur through numerous types of media that deliver text, audio, images, animation, and streaming video, are sometimes not adequate in many teaching and learning environment.

Conclusion

E-learning which has a potential to overtake the traditional teaching method is definitely an effective tool for promoting children education in the ECCDE centres in Delta State. E-learning supports caregivers in facilitating instruction in any educational environment like those of the ECCDE centres. Recently, many educational institutions implement e-learning system in their own training programmes to satisfy their learners' needs. The present study survey results on e-learning resources adequacy showed that the multimedia resources, on-line resources and virtual image applications were less adequate for promoting learning; also children need it in order to study and likewise to develop their skills at the ECCDE centres. Since e-learning could match or suit children learning, it could be a very effective and practical learning method. Therefore, for effective learning at the ECCDE centres, children do need e-learning. As a result, there is a real need for a well-established e-learning environment at the ECCDE centre where both the caregivers and children can rely on. This study therefore shows that e-learning should be highly integrated in the ECCDE centre through resources adequacy for optimum performances and creating supportive learning environments. Without supportive environments which can be established through e-learning, it will be difficult to achieve meaningful gains in academic. If the administrators likewise other stakeholders in the ECCDE centres want to improve children learning and performances, they should not ignore the social support, training and interaction provided using electronic resources in which e-learning can offer for children to be successful in their academics. Upon this benchmark recommendations were made.

Recommendations

The following recommendations have been proffered;

1. Delta State Government should equip and flourish the ECCDE centres with adequate multimedia and online electronic resources in order to effectively promote e-learning in the classrooms. The private sector should also be encouraged to provide most of the multimedia resources like television, radio cassette player, ipods, ipads and projectors, among others, for promoting e-learning in the ECCDE centres in Delta State.
2. Administrators in the ECCDE centres in collaborations with the State Universal Basic Education (SUBEB) should ensure that online resources such as the internet, YouTube, webcasting and among others are adequately provided for promoting e-learning in the ECCDE centres in Delta State
3. The caregivers should be encouraged by their administrators in the ECCDE centres to adequately utilize virtual image applications like the use of animations and PowerPoint graphic design in order to promote e-learning in the ECCDE centres in Delta State

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