

facilities and pupils' interest. Though, Okobia (2012) stressed that value systems are type of culture, norms, belief, religion, education and philosophies attainable in a given society, however, disorientation, home background and moral decadence are on the high side in the society. Therefore, Felder (2013) noted that for teachers to effectively teach values and its concepts, the teacher must be aware of the family background of the pupils to know how to teach them differently when need be- in this direction, they need to help the pupils in becoming better ones. Therefore, the total development of learners should be looked into (Yusuf, Afolabi & Loto, 2016; Oluyimide & Adeleke, 2020).

Conclusion

The study concluded that Education will surely be incomplete if it didn't involve the study of human values that can help every child become a kinder, compassionate and empathetic individual thus nurturing emotional intelligence in every child.

Recommendation

The study therefore recommended that essential values for basic living should be inculcated and taught at basic level of education which will serve as basic foundation for future development of a child.

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A STUDY OF ICT UTILIZATION IN THE TEACHING AND LEARNING OF BASIC SCIENCE IN JUNIOR SECONDARY SCHOOLS IN OSUN STATE, NIGERIA

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Abstracts

This study examines perception of teachers and students toward ICT utilization in the teaching and learning of Basic Science in Osun State Junior Secondary schools. The study employed exploratory and explanatory research design. The paper consisted of all Basic Science teachers as well as students in Ife Central Local Government Area of Osun State. Five Basic Science teachers were interviewed to gain insight into use of ICT in teaching the subject. Additionally, a total number of four hundred students offering Basic Science were randomly selected from 10 schools in the study area. The findings of the study revealed that teachers have positive perception towards ICT utilization in teaching Basic Science in the study area. Similarly, students have positive perception towards the use of ICT resources in learning Basic Science. The finding likewise showed that ICT would aid students' level of assimilation in learning the subject. Finally, the finding revealed three reasons raised by the teachers about why ICT should be integrated into the teaching of Basic Science and Technology in the Schools. The implications for the findings are discussed in the study. The paper concludes that teachers and students offering basic science in the study area have positive perception towards ICT utilization in teaching and learning of basic science. This conclusion stems from the fact that the teachers are well informed about the integration of ICT in the teaching of Basic Science.

Keyword: ICT utilization, Basic Science, teaching and learning, integration, exploration and explanation research, perception

Introduction

The generation of students being taught in schools in current dispensation are termed digital native. Digital native belongs to the age groups that are “native speakers” of digital language in the respect of Internet, computers and video games (Prensky, 2001). The digital natives are the generations of people categorized as: Millennials (born between 1980–1995) (Nicholas, 2020); Gen Z (born between 1995–2010) (Wood, Griffin, & Miranda, 2021); and Gen Alpha (born 2010 to the present day) (Jha, 2020). This set of generations are believed to be typically more fluent in the use of technology and information

and communication technology (ICT) based discussion. This simply because they were born or raised in the digital era. In this current era, technology is integral to the digital natives because students in this dispensation can adapt to the evolution of any technology. This implies that the digital natives could easily adapt themselves to any new technologies and will not avoid using the technology. The digital natives could effortlessly device how to learn and use the new technologies within the shortest possible time without much trouble (Kurt, Günüş, & Ersoy, 2013). Thus, digital natives use technology without any anxiety. It is therefore believed that the digital natives have learning preferences and styles with the use of ICT different from their teachers who belong to the previous generation (digital immigrants (Prensky, 2001)). On this note, students of this present era would expect them taught in schools with their native language, digital.

The use of ICT for teaching and learning in Nigerian Basic Education is gaining a wide spread attention in recent time. This may likely be occasioned by the global pandemic, COVID-19. Although at the international level, before the pandemic, ICT has been tremendously utilized to perform different tasks in various field of studies, like; medicine (Onditi, 2019), agriculture (Ismail, 2016), climate change education (Bakare, 2020), military (Debora, 2021), and education among others (Chukwu, 2020). Previous studies have shown that ICT has been deployed for digitization of education (Djido & Retnawati, 2022; Djurayevich, 2021) in relation to school management and security (Chukwu, 2020), as well as for teaching and learning processes (Chukwu, 2020; Crossdale, Mbaegbu, & Nwosu, 2019).

Utilization of ICT is conceived as the act of using computer related devices to perform a task in any given field. For instance Namubiru (2017) defines ICT utilization in relation to his field as the application of ICT to access market related information for market transactions (like mobile money services). Ikusika (2021) regarded ICT utilization as the extent to which ICT is used for the purpose of doing class works, assignments and or homework. Thus, in this paper, ICT utilization is referred to as the use, deployment, adoption, integration, or application of ICT resources

for teaching and learning processes in any environment.

In utilizing ICT for pedagogical processes, scholars have argued that there are various factors that could possibly influence teacher/student use of ICT to teach or learn respectively. Five other key factors highlighted by Gaitho (2014) in a study conducted in Kenyan Primary schools, are; access to power, computers, internet facilities, training on how to use ICT devices, and technical support personnel in schools. In addition, Muasa (2019) identified 10 factors influencing teaching and learning with ICT among preservice teachings in Kenya Colleges of Education. Similarly in Uganda, Guma, Faruque, and Khushi (2013) found In a review study conducted by Buabeng-Andoh (2012), he categorized the factors influencing use of ICT in teaching and learning into three, namely; personal, institutional and technological factors. In Nigeria context, according to Jegede (2007), factors like, attitude, skill or competency, availability of ICT resources, and self-efficacy affect use of ICT. It is seen from these studies that all identified factors fall within the three categories of Buabeng-Andoh (2012). As such, the factors considered in this study cut across the three domains pointed out in Buabeng-Andoh (2012), namely; ICT facilities, teacher and student's perception and ICT utilization. To this end, this paper is guided by three research questions, namely:

- ♦ What extent is teachers' perception of ICT integration into teaching of Basic Science in Ife?
- ♦ What extent is the student's perception of ICT Integration into learning Basic Science contents in Ife? and
- ♦ What informs teachers integration of ICT into Basic Science in Ile-Ife?

There appeared to be limited or few empirical local and national studies on the integration, adoption, utilization or use of ICT in the teaching and learning of Basic Science. Among those reviewed in this paper, Muhammed (2021) found that ICT facilities are mostly inadequate in Zaria schools. Similarly, in the available schools, teachers cannot effectively integrate ICT into teaching Basic Science in the schools because the teachers lack adequate training and technical supports. The author pointed out two reasons why the teachers could not integrate ICT into teaching Basic Science amongst primary school pupils in Zaria. This is because the teachers lacked adequate training and technical supports that can drive integration of ICT into teaching of Basic Science. In a study by Aramide, Olojo, and Adekanye (2013) found that specialized classroom/laboratory (Mean = 0.52), library (Mean = 0.52), and science laboratory

(Mean = 0.25) were most preferred location to access ICT resources by science teachers in Federal Unity Schools in Nigeria. The finding further showed a low level of ICT utilization among the science teachers. Similarly, a low level of ICT usage for laboratory-based/experiment-based activities was identified in the selected schools. Further, positive relationships were established between location of access and ICT use ($r = 0.186$) and degree of accessibility and ICT use ($r = 0.438$). A positive relationship was also established between location of access as well as degree of accessibility ($r = 0.374$). Also, a joint significant relationship was established among location of ICT access, degree of ICT accessibility, and ICT use.

Crossdale et al. (2019)'s study investigated ICT use in teaching and learning business studies amongst junior secondary school students in Delta State. The authors found that unavailability and non-utilization of ICT resources required for teaching and learning in business subjects in the selected schools. The study further reveals that different categories of challenges like level of infrastructural deficit militate against the teaching and learning business subjects with ICT.

In a study conducted by Chukwu (2020) in Enugu to examine ICT utilization in the management of primary education. The study found that ICT is somewhat utilized for record keeping as well as teaching and learning in primary schools in the State. However, the author was not detail enough on what was taught and learnt with ICT as well as how ICT was used in teaching and learning in the selected primary schools. At international level, majority of studies have shown that teachers have positive perception towards use of ICT for teaching in schools. For example, a study by Nyamekye, Baffour-Koduah, and Asare (2021) who used interview guide to interrogate Ghanaian language teachers found that exhibit the teachers have a positive perception of ICT integration into education. Similarly, in a study conducted in Zanzibar by Suleiman, Suleiman, and Juma (2018) found that the teachers demonstrated positive perceptions towards utilizing ICT in classroom setting. Likewise, Ashari (2021) found that teachers had supportive perception towards the use of ICT in the classroom. However, Ng and Yunus (2021) found that there is no relationship between Malaysian primary teachers' perceptions of the impact of ICT use in teaching processes. In Nigerian context, a study conducted in the North by Wachau, Oloyede, and Bamidele (2015) found that teachers specifically trained in the use of computer have positive attitude towards the utilization of ICT resources in teaching Basic Science ($t = 9.459$, $p = 0.000$). The authors claimed that strategic training of teachers effectively improves their competencies

on ICT integration into the classroom and enhances their attitude towards computer usage.

Study (Ashari, 2021) has also shown that students have positive disposition toward their exposure to the use of ICT resources for learning. In a study by Ashari (2021) who found that students have positive perception towards the use of ICT to learn in schools. This was because the students considered the integration of ICT into their classroom activities easier for them and that ICT was a pleasant device for the students to learn new things from the internet.

Methodology

This paper adopted a mixed method approach. This was due to the nature of data and participants involved in the study (Creswell, 2013). The population of the study consisted of all Basic Science teachers and students in Ile-Ife. The sample size consisted of 400 students and five teachers offering and teaching Basic Science respectively. Two research instruments were

Results

Research Question 1: What extent is teachers' perception of ICT integration into teaching of Basic Science in Ife?

To respond to the above research question, the data collected from five teacher using interview protocol were transcribed and thematically analyzed. The excerpts obtained are as illustrated below.

Respondent 1: "ICT means information and communication technology. So, pertaining to science in secondary schools, precisely, if ICT is involved in the teaching of basic science, it will have positive impact in teaching and also enhance students learning, that's my personal view about ICT. And also, "the effect of ICT is beneficial, ICT serves as instructional materials, for instance we want to enlighten the students about who a pilot is, we can always display it. This is a contractor; this is what a contractor looks like etc. We need to show them these images; we can even do that with power point presentations. When I teach with ICT, it makes explanations easier and the children will comprehend more, but due to insufficient resources we draft something similar, it also creates room for engagement."

Respondent 2: "ICT means information and communication technology, it's a tool that can be used to enhance learning effectively, if it is used in teaching, students will understand better."

Respondents 3: "Well, I think ICT is a plus to teaching all subjects not just basic science, but if schools will utilize ICT in the teaching of Basic science, it will benefit both the students and management because I think it's easier and well explanatory."

Respondent 4: "For a teacher, ICT will lessen our burden; it will also make teaching easier. I can easily use ICT to get more contents that will enhance effective learning, because majority of the student does not even have a text book, so using ICT will really benefit them also."

Respondent 5: "If there's ICT, it will be fully prepared for the class, if ICTs are available; students will be willing to learn because they will love to see something creative, display of diagrams. They will pay more attention and will get motivated to learn."

From the above excerpts the respondents perceived that ICT integrated into teaching and learning of Basic Science will have positive impact in teaching and also enhance students learning. This implies that teachers use of ICT resources in their teaching of Basic Science

will aid learning of the subject amongst students. In addition, the result revealed that the teachers opined that ICT utilization will help students and educators in getting contents of Basic Science easily than using the conventional method of searching printed textbook.

They also pointed out that students will be willing to learn digitally. Based on these results, it is concluded

that the teachers have good perception of ICT utilization in the teaching of Basic Science in schools.

Research Question 2: What extent is the student's perception of ICT Integration into learning Basic Science contents in Ife?

In order to respond to this research question, the gathered data were analyzed using descriptively by using simple percentage. The results are as presented in Figure 1.

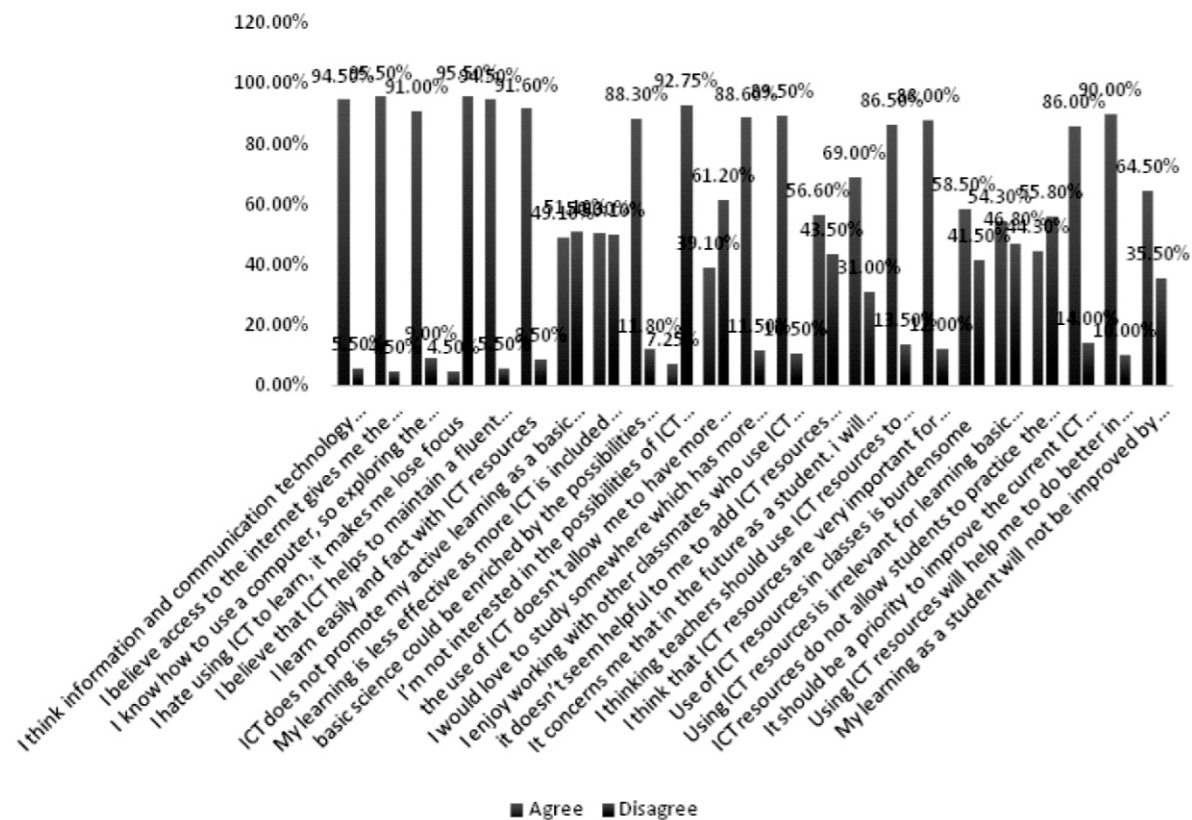


Figure 1: Student perception of ICT integration into Basic Science Learning.
Source: Authors Survey 2021

From Table 1, the result shows that 378(94.5%) of the respondents agreed that ICT makes learning easier while only 22(5.5%) disagrees that ICT makes learning easy. Similarly, 382(95.5%) of the respondents agree that access to the internet brings better opportunity to learning basic science concepts but 18(4.5%) disagreed. In addition, 364(91%) of the respondents agreed that they know how to use computers and exploring the computer for learning purposes while 32(9%) disagreed to this fact. Also, 18(4.5%) of the respondents agree that they dislike using ICT to learn Basic Science but 382(95.5%) disagreed with the statement. Further, 378(94.5%) of the students agreed that ICT helps to maintain a fluent communication, when it comes to teaching and learning but only 22(5.5%) disagreed with this statement. Also, 366(91.6%) of the respondents agreed that they learn easily and fast with ICT resources while 34(8.5%) disagreed that ICT

resources made learning Basic Science easier. On the other hand, 196(48.6%) of the students believe that ICT does not promote their active learning of Basic Science concepts but 204(51.4%) disagreed with the statement. 200(50%) of the students agreed that their learning is less effective as more ICT is included in studying while the remaining 200(50%) believe otherwise. More so, 353(88.3%) of the respondents agreed that Basic Science can be enriched by the possibilities offered by ICT resources while only 47(11.8%) of the respondents disagreed with the statement.

Also, 29(7.25%) of the students agreed that they are not interested in the possibilities of ICT resources utilized in learning Basic Science while 371(92.75%) think otherwise. Similarly, 156(39.1%) of the respondents agreed that the utilization of ICT doesn't allow them to have more significant learning in Basic

Science while 244(60.9%) disagree with the statement. Furthermore, the result showed that 354(88.6%) of the respondents agreed that they will love to study somewhere which has more ICT resources to learn Basic Science concepts but 46(11.5%) of the students disagreed with the statement. Likewise, 358(89.5%) of the respondents agreed that they enjoy working with other classmates who used ICT resources to learn Basic Science but 42(10.5%) of students felt otherwise. Also, 226(56.6%) of the respondents agreed that it doesn't seem helpful to them to add ICT resources in learning Basic Science while 174(43.5%) thought otherwise. The result further indicated that 276(69%) of the respondents believe that it concerns them that in the future as a student and they will have to use ICT resources more in learning science while 124(31%) disagreed. Also, 346(86.5%) of the respondents think teachers should use ICT resources to facilitate student's learning of basic science while 54(13.5%) disagreed with the statement. In addition, 352(88%) of the respondents think that ICT resources are very important for learning nowadays while only 48(12%) believe that ICT is not so important. Likewise, 234(58.5%) of the respondents believe that the use of ICT resources in classes is burdensome but 166(41.5%) disagreed with the statement. Similarly, 217(54.3%) of the respondents agreed that using ICT resources is irrelevant for learning basic science while 183(46.6%) with the statement. Likewise, 177(44.3%) respondents agree that ICT resources do not allow students to practice the acquisition of some intellectual skills in basic science but 223(55.8%) disagreed with the statement. Additionally, 344(86%) of the respondents agreed that it should be a priority to improve the current ICT infrastructure in their school while 36(14%) felt otherwise. The result also showed that 360(90%) respondents agreed that using ICT resources will help them to do better in learning Basic Science but only 40(10%) disagreed. Lastly, 258(64.5%) of the respondents agreed that their learning of Basic Science as a student will not be improved by the utilizing ICT resources but 142(35.5%) do not agree that learning as a student will not be improved by the use of ICT resources in basic science.

Based on the above results, this paper concluded that students' perception towards the utilization of ICT resources in learning Basic science is highly positive. This is because majority of the students believe that ICT resources are very important for learning nowadays. The respondents also held a view that the integration of ICT enables them learn Basic Science easily and faster.

Research Question 3: What informs teachers integration of ICT into Basic Science in Ile-Ife?

In responding to this question, the teachers were interviewed and their excerpts are illustrated below?

- students will learn faster and gain more because what we are teaching them when they see the diagrams, it will install in their brain faster than reading.
- It will make teaching and learning easier, students can see the pictorial form/evidence of what I'm teaching, not just writing theory and the likes. Like for instance now, if I am explaining the growth of plants, talking about 1 month, 6 months let say perennial and annual crop, they will understand better if the diagrams are displayed".
- For a teacher, it will lessen our burden, it will also make teaching easier, I can easily use ICT to get more contents that will enhance effective learning, because the majority of them doesn't even have a text book.
- The effect is beneficial, ICT serves as instructional materials, its good if it can be used to teach students particularly for example, skeletal system; it's can be used in teaching student if projector is use, if its display student will be able to understand better when they see the structure and everything and the teachers explain.

From the above excerpts, three major reasons were induced from the respondents' views about ICT integration into teaching and learning of Basic Science in the study area. The reasons are that:

- students learn faster and gain more understanding because they will see the pictorial representation of what is been taught in the classroom.
- teaching and learning are easily done because of the pictorial form/evidence of what is been taught rather than the usual theoretical or traditional mode of teaching; and
- course contents are easily stored, retried and disseminated to learners.

Based on the results above, it was concluded that the utilization of ICT into teaching Basic Science in schools will surely enhance learning of the subject among students.

Discussion

This study examines teachers and students' perception of ICT utilization in the teaching and learning of Basic Science in Osun State Junior Secondary schools. The study employs exploratory and explanatory research design. The findings of this paper revealed that the teachers have positive perception of ICT utilization in

the teaching Basic Science in the schools. The implication for this finding is that teachers plan to deploy ICT resources to teach Basic Science in schools if the ICT devices are available and adequate. The finding of this paper is in line with that of Nyamekye et al. (2021) who found that the teachers they interviewed exhibited positive perception of ICT integration in education. In similar study by Suleiman et al. (2018) found that Zanzibar teachers demonstrated positive perceptions towards utilizing ICT in classroom setting. Likewise, the finding corroborated that of Ashari (2021) who found that teachers had supportive perception towards the use of ICT in the classroom. In addition, the finding is in conformity with the study by Wachau et al. (2015) who found that teachers who are specifically trained in the use of computer have positive attitude and perception towards the use of ICT in teaching Basic Science. However, Ng and Yunus (2021) found in their study that there is no relationship between Malaysian primary teachers' perceptions of the impact of ICT use in teaching processes. This may likely be because the teachers lacked the required ICT literacy to digitize teaching processes.

The findings of this paper further showed that students' perception towards the utilization of ICT resources in learning Basic Science is highly positive. This is because majority of the students believe that ICT resources are very important for their learning nowadays. The thought of the students are in line with the postulation of Prensky (2001), that they are digital native. Similarly, the respondents held a view that the integration of ICT will enables them learn Basic Science easily and faster than use of the conventional methods. This finding is consistent with that of Ashari (2021) who found that students have positive perception towards the use of ICT to learn in schools. This was because the students considered the integration of ICT into their classroom activities easier for them and that ICT was a pleasant device for the students to learn new things from the internet.

In addition, the findings in this present study revealed three reasons advanced by the teachers which informed their perception of ICT integration into teaching Basic Science in schools. These reasons are: students learn faster and gain more understanding because they will see the pictorial representation of what is been taught in the classroom; teaching and learning are easily done because of the pictorial form/evidence of what is been taught rather than the usual theoretical or traditional mode of teaching; and course contents are easily stored, retried and disseminated to learners.

This paper found that the utilization of ICT into teaching Basic Science in schools will surely enhance learning of the subject among students. The implication for this finding is that the utilization of ICT resources in the teaching Basic Science in Osun State schools will not only aid learning Basic Science but other subjects as well. This finding is similar to that of Ashari (2021) who found that teachers perception towards the use of ICT in classroom is because the teachers were more effective and efficient in the teaching and learning process with the use of technology. Similarly, the finding by Suleiman et al. (2018) revealed that Zanzibar teachers' have positive perceptions towards ICT in teaching because the use of ICT resources motivates teachers to teach and students to learn.

Conclusion

This study examined teachers and students' perception toward utilization of ICT in the teaching and learning of Basic Science in Osun State Junior Secondary schools. Based on the findings in the study, the paper concludes that both teachers and students have positive perception towards ICT utilization in teaching and learning Basic Science in Osun State. This conclusion stems from the fact that the teachers are well informed about the integration of ICT in the teaching of Basic Science. The implications for the findings are that teachers will be interested to deploy ICT resources to teach Basic Science in Osun State schools if the ICT devices are readily available and adequate. In addition, the students feel that the integration of ICT is learning enabler since it will facilitate assimilation rather than the usual conventional methods. It is suggested that study should be conducted to investigate utilization of ICT in teaching and learning of other subjects in Osun State).

Recommendations

Based on the findings of this paper, the following recommendations are hereby made;

1. Basic science teachers and students should be allowed to have access to ICT facilities, regular training and seminars should be organized for basic science teachers in junior secondary schools on the application of ICT to enhance the teaching of basic science.
2. Government should provide adequate ICT facilities and internet service for easy access to ICT facilities and interest to basic science teachers and students; Electronics libraries (e library) should be established in all junior secondary schools.
3. Ministry of Education should regularly facilitate the training of selected teachers and

administrators in secondary schools on ICT education.

4. There should be curriculum review to promote and facilitate a compulsory ICT driven curriculum for junior Secondary Schools in Osun state; Government should facilitate the re-engineering of research and development in junior schools, using ICT tools and devices.

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EVALUATING THE RESPONSIVENESS OF EARLY CHILDHOOD EDUCATION CENTRES TO SPICE DEVELOPMENT OF CHILDREN IN SOUTHWESTERN NIGERIA

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Abstract

The study assessed the children level of developmental appropriateness which covers the Social, Physical, Intellectual, Creative and Emotional (SPICE) developments of children in early childhood centres in Southwestern Nigeria. This was with the ultimate view to determining the responsiveness of early childhood education programme to children developmental needs in Southwestern Nigeria. The study employed descriptive survey research design. The population consisted of children between ages 3 and 5, their parents as well as pre-school teachers in Southwestern Nigeria. A multi-stage sampling procedure and simple random sampling techniques were used in selecting 1,080 pupils, 1,080 parents and 108 pre-school teachers as the sample size for the study. One instrument was used for this study, named Child SPICE Observation Inventory (C-SPICE-01)-DAP. Data collected were analyzed using mean, standard deviation and t-test analysis. Results showed that the assessment of the level of overall SPICE development was appropriate (68%). The study concluded that assessment of the level of SPICE developments are vital variables in developmental appropriateness of children in pre-primary schools in Southwestern Nigeria.

Keywords: Assessment; Development; SPICE; Early Childhood Centres; Children; Responsiveness; Skills; Appropriate; Practice.

Introduction:

Education is a life wire to growth and development of any given nation. When any society therefore is plagued with inability of giving adequate education to their youngsters, such will be backward and development will be stunted. Kingdom and Maeka (2013) postulated that education is the life of a nation, is the life wire of its industries and also the foundation of moral regeneration and revival of its people.

Obiye (2019) opined that education is universally acknowledged as an essential tool in the process of natural development to empower people with the knowledge, skills, value and attitude to improve their quality of life, enhance productivity and capacity to

learn new skills that would enable an individual to participate more fully in the development process. Every developed nation of the world had invested immensely in the lives of their youngsters. That is the reason behind their skills acquisition, outcome of various research for better growth and development. This is revealed in their works and articulation of different projects, proposals and dynamics in accomplishment of lofty goals and objectives in moving their nation forward. Meeting the all-round needs of youngsters is very important to their development which invariably leads to the development of the nation at large. To grow a nation, people of creativity and special talents or skills are needed. Therefore, developmental needs of the youngsters are very needful for the nation building.

Early childhood education is a kind of education given to children of the age zero to eight years. The simple way of catching them young and developing their God-given talent is essential and that their education must start as early as possible when their brain can easily catch up with things on their rudiments of growth and development.

Early childhood education is meant to assist the vulnerable children to get involved in their environment. This invariably will help the youngsters to get along in their environment to conquer every challenge it may pose to them. This could be done through introducing all round developments which covers their Social, Physical, Intellectual, Creativity and Emotional developments with the acronym (SPICE). FGN (2004) refers to early childhood education as the education given in any educational institution to children prior to their entering the primary school. It includes the crèche, the nursery and the kindergarten. Sending of youngsters to early childhood institution shows that child right is cherished and uplifted in accordance to Aduke and Amudalatu (2016) who declared that education is essential to human right.

Early childhood years are the most crucial to their physical, cognitive, social and emotional development. The rapid pace of physical and mental