

## The Nigerian Home and Children With Cerebral Palsy: A Thematic Literature Review

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### Abstract

*Cerebral palsy is a special need that is not well pronounced on the pages of academic databases in Nigeria compared to developed countries like The United Kingdom and the United States of America. This study examines the strategies of engagement adopted by the Nigerian home in promoting learning among early years learners with cerebral palsy. It also investigates the prominent learning resources for children with cerebral palsy in Nigerian homes. Moreover, the challenges faced by the Nigerian home in the bid to make educational resources available for learners have been explored. This study adopts the thematic literature review using the secondary method of data collection. The interpretative philosophical view and deductive research approach were explored in this research. Data collection was done through the aid of Research Gate, Scopus, Science Direct, and Pub Med. The various sources of data collection include textbooks, peer-reviewed journals, educational websites, and academic articles. It was found that Nigerian homes engage in inclusive communication settings, play-learn activities, and smart technologies to meet the learning needs of children with cerebral palsy. Adaptive equipment and computer-based learning resources were the prominent learning resources for children with cerebral palsy in Nigerian homes. The challenges faced by the Nigerian home in the bid to make educational resources available for learners were inadequate awareness, poor funding, and discrimination. It was recommended that there should be an*

*increase in government support and increase awareness of cerebral palsy in Nigerian society.*

**Keywords:** Home, Children, Cerebral Palsy, Nigeria

### Introduction

Pedagogical activities are complex not because of the dynamic of training involved but the need for teachers to be open-minded in the process of doing their jobs (Drechsler et al., 2020). In most cases, when teachers work with children with special needs, it is expected that they are passionate, professional, and particular about the changing needs of learners (Obaka, 2017). That said, while different studies such as Obaka (2017); Drechsler et al. (2020); and Oluyimide and Adeleke (2020) have focused mainly on the education of children with special needs in school, the present study is keen on how the home perceive children with special needs, the dynamics and complexities of working with the children. On this note, and as a way of streaming this study to a concise direction, the focus is on children with cerebral palsy. Although the researcher would have considered engaging children with other forms of special needs, the subject of cerebral palsy and home involvement seems to be relatively under-researched in Nigeria.

Cerebral palsy is one of the leading special needs in the world that limits the ability of learners to stand right, walk effectively, and carry out physical activities like their peers. According to the works of Donald et al. (2014), cerebral palsy is a physical disability that often occurs in people in their childhood based on social or medical factors. It was added that children sometimes suffer from cerebral palsy due to the kind of experiences that their mothers had during pregnancy- this includes food quality, circumstances surrounding birth, and after-birth realities (Donald, Samia, Kakooza, & Bearden, 2014). According to a more recent report, the Centers for Disease Control and Prevention in 2024 asserted that 4 out of every 1000 live births tend to have cerebral palsy. In the same vein, 10% of children between the ages of 3 and 8 tend to have cerebral palsy (CDC, 2024). These statistics show that the prevalence of cerebral palsy among children globally is relatively high. Hence, discussing cerebral palsy is not out of context, and the quality of attention that children get in the Nigerian home.

According to the findings of McIntyre *et. al.*, (2022), the experience of cerebral palsy among children is high among children from developing countries based on the effects of poverty. Some of the leading countries around the world with the highest rate of children with cerebral palsy include Moldova, Bangladesh, China, India, Nigeria, and Uganda –(McIntyre *et. al.*, 2022). In addition to this, poverty is prevailing as a major cause of cerebral palsy among children. More so, some mothers do not have access to quality care experiences and viable hospital settings before, during, and after birth. For instance, the poverty rate in Nigeria as of the year 2024 is 40.7% (World Bank, 2024). It has also been found that Nigeria recently overtook India in extreme poverty ranking (Adebayo, 2024). This is with the fact that there exists a nexus between poverty and the prevalence of cerebral palsy among children. It is therefore not a bad idea to consider Nigeria as the scope of the present study. Since Nigeria is on the list of countries with a prevailing rate of children with cerebral palsy, there is a need to examine the roles of Nigerian homes in meeting the evolving needs of this study.

### **Conceptualization and Issues with Cerebral Palsy**

It has been argued that children with special needs are not disabled but they are children who have disabilities. These children are special because they have areas of need that require special attention (Oluyimide & Adeleke, 2020). Regardless of the myriads of needs that these children have, they are not less of humans- they are unique, talented, and have all that it takes to rule the world just like children without disabilities (Oluyimide & Adeyemi, 2023). That said, scanning through different forms of special needs that children might have, the present study investigates deeply into children with cerebral palsy.

According to the research by Donald *et. al.*, (2014), cerebral palsy is a form of special needs that reduces the ability of children to engage their physical skills effectively; skills such as writing (fine motor) and sporting activities (gross motor) among others. In other words, cerebral palsy is a physical disability that affects the day-to-day activities of people. Cerebral palsy has also been seen as a type of neurological disorder that affects infancy and children which limits their ability to move from one end to the other (Richards & Malouin, 2013). This does not stop with difficulties in

movement but also affects the ability of children to carry out academic activities such as writing, sitting comfortably in the classroom, and even reading effectively (Vitrikas, Dalton, & Breish, 2020). By implication, when children have cerebral palsy, their school activities are negatively affected with an effect on their academic and social performance (Aduful *et. al.*, 2023).

One of the major issues with cerebral palsy is the management. It has been found according to Tseng *et al.* (2018), in a study that was done in Taiwan that parents were not adequately informed and aware of cerebral palsy. This, in a way, reduces the extent to which parents engage in early intervention in working with children with cerebral palsy (Tseng, Lee, Chou, Sheu, & Lee, 2018). In another study that was conducted in Sweden, most of the children with cerebral palsy in the study areas were due to the effect of malnutrition that their mothers experienced during pregnancy (Himmelmann & Uvebrant, 2014). This is a similar reality in the Nigerian home as some selected mothers in Benin (from low income-homes) do not have adequate awareness of cerebral palsy (Sogbossi, Houekpetodji, Kpadonou, & Bleyenheuft, 2022). On this note, aside from poverty in homes, poor awareness is another challenging factor that can deteriorate the need for attention of children with cerebral palsy. As this study unfolds, more findings will be unveiled based on the Nigerian context.

### **Types of Cerebral Palsy and Their Implications for Early Years Learning**

The different types of cerebral palsy are presented in this section which include spastic, ataxic, athetoid (dyskinetic), hypotonic, and mixed cerebral palsy. They have also been found to have direct and indirect implications for learning among children. These are systematically presented as follows.

#### ***Spastic Cerebral Palsy***

This is the most prominent type of cerebral palsy in the world with a prevalence rate of 77% (Ali, Bhat, Ahmed, & Ahmed, 2022). When children have spastic cerebral palsy, some of the experiences that they have include spasticity movements, feeling jerky, and increased muscle tone. A leading factor that causes spastic cerebral palsy is when children

experience motor cortex damage in the brain (Abate et. al., 2024). The motor cortex is an area of the brain that is in control of voluntary movement (Patel, Neelakantan, Pandher, & Merrick, 2020). Hence, when children have spastic cerebral palsy, they have issues with physical coordination and effective communication processes in school and at home (Bottcher, 2010). Their parents and teachers have the job of making sure that the children feel comfortable and provided with flexible learning environment for effective learning opportunities.

### ***Ataxic Cerebral Palsy***

This is another type of cerebral palsy that is not very common among children globally, it is - about 2.4% prevalence (National Institute of Neurological Disorders and Stroke, 2024). It is caused by the inability of children to have access to ataxic (voluntary movements) which leads to movement imbalance. Here, when the cerebellum (a part of the brain that ensures balance control and motor movement regulation) of children is damaged, they tend to experience ataxic cerebral palsy (Khan et. al., 2024). Most of the children in this category experience different symptoms such as shakiness, spreading feet apart when walking, poor coordination, and speech difficulties (Yoo, Ahn, & Park, 2021). By inference, the academic and social activities of this kind of children are affected based on the fact that they do not have access to effective fine and motor skills control.

### ***Athetoid Cerebral Palsy***

When children are diagnosed with athetoid cerebral palsy, they tend to experience a combination of two types of cerebral palsies (choreoathetosis and dystonic). This is the case when children experience loosened muscles (hypotonia) and stiffened muscles (hypertonia) as this leads to the fluctuation of the muscle coordination (Li & Arya, 2024). Also, children who have athetoid cerebral palsy could have experienced both brain basal ganglia and cerebellum damage at the same time according to Haberfehlner et. al., (2020). The brain's basal ganglia are a part of the brain that is in charge of a cluster of nuclei that aid motor control and support effective cognitive activities (Haberfehlner et. al., 2020). Some of the symptoms that are exhibited by children who have athetoid cerebral palsy

include problems with posture, feeding issues, rigid or stiff body, and floppiness in the limbs (Patel et. al., 2020). This means that when children experience this kind of cerebral palsy, they find it difficult to jump, walk, and also express their fine and gross motor skills effectively.

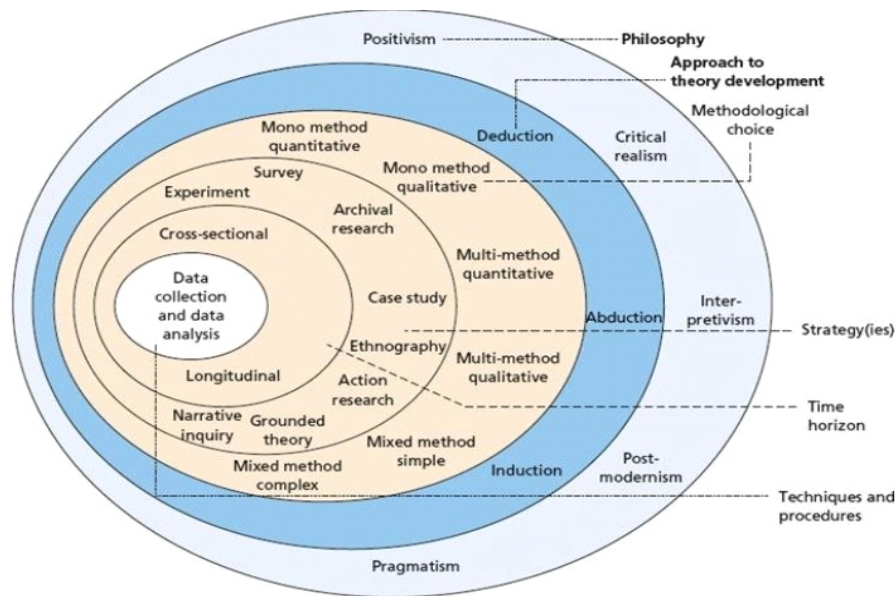
### ***Hypotonic Cerebral Palsy***

Hypotonic also known as atonic cerebral palsy is not very common among children with a prevalence rate of about 2.6% (Levy et. al., 2020). Children who have hypotonic cerebral palsy experience floppy muscles which make them often experience loss of strength (Moawad, 2024). Such a child also has delays with their developmental milestones such as crawling, standing, and walking muscles (Khan et. al., 2024). They tend to experience delays in their movement compared to other children with other forms of cerebral palsy. Some of the common symptoms that children with atonic cerebral palsy include flexible joints and ligaments, loose muscles, lack of head control, and poor balance and stability (Moawad, 2024). In all of these, these children largely have difficulty with communication or language. So, they often have issues with learning languages, words, and sentences in school. Some of them also experience learning barriers which can include emotional, social, and intellectual.

### ***What Makes a Nigerian Home?***

In this study, the concept of the Nigerian home is hinged on the different people that are available in the home environment to meet the changing needs of learning. Some of these stakeholders include parents, family members, siblings, and relatives. According to the findings of Daniel, Okefenam, Ugorji, Agbasi, Onyido, Odoh, Fakorede, and Egbujo (2021), it was asserted that it is not enough for parents alone to be involved in the care of children without the assistance of other relatives and family members. Although the home is majorly made up of parents, other key players such as relatives and society members should not be taken out of the picture when it comes to working with children who have special needs (Daniel et. al., 2021). A good way to describe a typical Nigerian home is a communal environment that embraces cultural practices, collective education, and traditional development practices among their children. It has been added that African homes are full of cultures and traditions-





**Figure 1: Saunders' Research Onions Model (Saunders, Lewis, and Thornhill, 2019)**

Leaning on Saunders' research onions, this study adopts the interpretive research philosophy which has to do with the collection of data from a plethora of sources (Alharahsheh & Pius, 2019). Interpretivism is a philosophical view that also gives room for critical analysis of data which is done in the present study (Goldkuhl, 2012). The inductive research approach is also engaged in this study which is keen on the collection of data from “specific” to “general” (also known as the bottom-up approach) (Burney & Saleem, 2008). On this note, the collection of data was done from a surfeit of studies on the Nigerian home and its impact on the learning of children with cerebral palsy.

It must also be asserted that the qualitative method of data collection was done in this study as information was sought from different databases such as Research Gate, Scopus, Science Direct, and Pub Med. The various sources of data collection include textbooks, peer-reviewed journals, educational websites, and academic articles. The search strings that were

engaged include home, cerebral palsy, learning, strategies, and development. In all of these, this study is action research as the focus is on the increase of effective learning practices among children with cerebral palsy in the larger Nigerian society. The inclusion criteria and Boolean operators that have been included in the study are reported in Tables 1 and 2 (below).

**Table 1: Inclusion and Exclusion Criteria**

Parameters	Inclusion criteria	Exclusion criteria
Research title	All data that are related and relevant to the study objectives are included. These are the strategies of engagement adopted by the Nigerian home in promoting learning among early years learners with cerebral palsy ; the prominent learning resources for children with cerebral palsy in Nigerian homes ; and the issues mitigating home in the bid to make educational resources available for learners.	All themes and subjects that are not relevant to the specific objectives of the study.
Research type	Peer-reviewed journals, empirical studies, articles that are adequately referenced, and studies that have detailed methodology.	Journals that are not peer -reviewed, studies that do not have empirical findings (or do not have a result section), articles that are not adequately referenced, and studies without detailed methodology.
Language of publication	English Language	Other languages such as French, and Arabic, apart from English Language.
Time of publication	Papers that have been published in the last 10 years, that is, 2014 to 2024. However, theories will be engaged regardless of their time of publication.	Studies that have been published more than 10 years from the time that the research was conducted.

**Table 2: Boolean Operator**

S/N	Theme Search	or	Alternative Search	of	Learners	In	Educational Industry	in	Country
1	Strategies of engagement adopted by the Nigerian home in promoting learning .	or	Techniques of engagement adopted by the Nigerian home in promoting learning .	of	Children with ADHD	In	Early years education	in	Nigeria
2	Prominent learning resources	or	Foremost learning resources	of	Children with ADHD	In	Early years education	in	Nigeria
3	Issues mitigating home in the bid to make educational resources available for learners	or	Challenges mitigating home in the bid to make educational resources available for learners	of	Children with ADHD	In	Early years education	In	Nigeria

In line with the inclusion and exclusion criteria that have been presented in Tables 1 and 2, the research is intentional about accessing viable studies and articles. The search strategy as presented in the Boolean operator also contributes to the viability of findings in the study. The thematic method of data analysis is used in the study which includes sorting of data, development of codes, design of themes, interpretation, and discussion of findings. All these processes added to the designing of recommendations in tune with the findings.

## Findings and Discussion

### Strategies of Engagement Adopted by the Nigerian Home in Promoting Learning among Early Years Learners with Cerebral Palsy

### Enhanced Inclusive Communication Settings

A prominent way that has been found to work with children with cerebral palsy is the adoption of an inclusive communication strategy. Here is a method that is explored by ensuring the provision of inclusive learning settings for children at home. According to the findings of Abdel Malek, Rosenbaum, and Gorter (2020), a significant relationship was found between inclusive learning settings and effective learning among children with cerebral palsy. It was added that when parents show care toward children with cerebral palsy, their self-esteem and attitude toward learning increase (Abdel Malek, Rosenbaum, & Gorter, 2020). The issue, however, is the fact that many parents do not have adequate awareness about cerebral palsy and many special needs, hence, children are discriminated against and stigmatized in such homes and societies (Olatunji et. al., 2023). Olatunji *et. al.* (2023) asserted that it was not until recently that Nigerian parents got to know that the treatment of children with cerebral palsy is affordable and that such children can perform effectively academically and be socially relevant in society. In a study done in Cross River State by Duke *et. al.* (2021), it was argued that there is a need for more educational stakeholders such as parents and the Nigerian government to be more intentional about working with Nigerian homes toward the provision of a conducive learning environment (Duke et. al., 2021).

### Adoption of Play-Learn Activities

Play according to the submissions of Maria Montessori has been described as the work of the child- it is a tool that aids the promotion of learning among children (Modest & Mwila, 2023). In a study that was conducted in Ibadan, Nigeria, it was posited that play-learn activities are becoming more prominent in Nigerian homes towards improving the social and academic performance of children with cerebral palsy (Ajayi, Fatudimu, & Hamzat, 2022). It was also stressed that different games such as gross motor activities, mindfulness, puzzles, coloring games, cool math games, meditation, and art therapy improve the cognitive abilities of children with cerebral palsy (Ajayi, Fatudimu, & Hamzat, 2022). In another study in Kaduna, Nigeria, it was found that play-learn activities have engaged children to be more participatory in academic activities in school because

their parents facilitate play among them at home –(Lasisi, Ani, Lasebikan, Sheikh, & Omigbodun, 2017). It is on this note that Lasisi *et. al.*, (2017) recommended that play-learn activities should not just be delimited to Nigerian homes but should also be taken seriously among children with cerebral palsy in schools.

### **Assistive/Smart Technologies**

In a study by Adeyemi and Oluyimide (2024), it was posited that there is an increase in the use and adoption of assistive technologies in Nigerian homes and schools. Some of the prominent technologies that were found to engage children in learning include note-taking applications, voice-to-text software, computer-based learning programs, and gaming (Adeyemi & Oluyimide, 2024). While these technologies are effective and functional among children with cerebral palsy, the main challenge is addiction to the technological tools, in the absence of proper monitoring and supervision from parents (Paul, Nahar, Bhagawati, & Kunwar, 2022). Aside from the need to ensure that children are not addicted to technological tools, their learning processes are supported. For example, during the COVID-19 pandemic, an application, *Read Along* was developed by Google to aid learning among children (Shantha, Arunkumar, and Premalatha, 2023). The researcher was one of the volunteers who engaged in the application to aid learning among children with special needs. The outcomes of the *Read Along* were effective among the learners, especially in the process of developing their academic and social performance. A study conducted in five southern states in Nigeria, however, showed that only 8.07% of participants were adequately informed about the use of assistive technologies for children with special needs at home (Okonji & Ogwezzy, 2019).

### **Prominent Learning Resources for Children with Cerebral Palsy in Nigerian Homes**

#### **Adaptative Equipment**

Like every other child with special needs, it is expected that they have access to different forms of teaching and learning resources so that they can gain independence and autonomy. According to the works of

Oluyimide and Adeleke (2020), the different forms of equipment that are available for learning among children with special needs in Osun State include walkers, braces, and wheelchairs among others. Although Oluyimide and Adeleke (2020) carried out their study among children with different forms of special needs, those who have cerebral palsy were also involved in the process. One of the main challenges was that most of the children lived in school and rarely lived with their parents. However, even when they are at home, they still use adaptive equipment. This is with the main aim of making sure that the children find it easy to move around and engage their gross and fine motor skills effectively. For instance, the use of wheelchairs has been linked with the ability of children to gain support when they need to move around by themselves (Sogbossi, Houekpetodji, Kpadonou, & Bleyenheuft, 2019). A study that was done among Zimbabwean mothers showed that there is an increase in the rate of wheelchair (with joystick control) provision for their children compared to the Nigerian homes (Dambi, Jelsma, and Mlambo, 2015). By implication, there is a need to ensure that Nigerian homes are more intentional about the provision of flexible and technology-based wheelchairs for their children. In the area of making walkers and braces available for children, the Nigerian home is efficient in this area (Onyeaso, 2023). In addition, the Nigerian home can still do more in the provision of adaptive seating devices for children with cerebral palsy according to the findings of Aduful *et. al.*, (2023).

#### **Computer-Based Learning Resources**

The Nigerian home is beginning to do more in the use of computer-based learning among children with special needs just like developed countries (Sandlund, Waterworth, and Häger, 2014). While the use of computer-based video game therapy is very famous in the UK and USA, Nigerian parents are getting interested in the adoption of these learning resources for children. For instance, gamification has been seen as the new reality for learning among children with special needs (especially those with cerebral palsy) in Nigeria according to the findings of Gkintoni, Vantaraki, Skoulidi, Anastassopoulos, and Vantarakis (2024). The various forms of games that were discussed to have been effective among children include interactive learning games, serious games, augmented reality,

cooking games, and reward systems ———"(Gkintoni, Vantaraki, Skoulidi, Anastassopoulos, & Vantarakis, 2024). Active video game play is effective in the promotion of rehabilitation therapies among children with cerebral palsy (Howcroft et. al., 2014). Scanning through these findings, Sunday *et. al.*, (2022) asserted that many challenges are militating the inadequate adoption of computer-based learning resources among children with cerebral palsy in Nigeria which include funds and poor awareness.

### **Challenges Faced by the Nigeria Home in Make Educational Resources Available for Learners**

#### **Financial Constraints**

Money is very essential to human activities- this is the same reality with the process of getting educational resources available for children with cerebral palsy. A famous challenge facing Nigerian society is poverty which affects every sector including the educational industry (World Bank, 2024). In tandem with findings such as Oluyimide and Adeleke (2020); and Oluyimide and Adeyemi (2024), it was asserted that funding is the major challenge in developing the social and academic skills of children with special needs in Nigeria. Many children with cerebral palsy have also been found not to have access to quality care in a sampled Hospital in Kano because there are inadequate funds to provide rehabilitation for the children" (Abdullahi, 2019). This is the same case with another study in Kano where the provision of learning resources is hindered by inadequate funds —(Ogoke & Iloeje, 2017).

#### **Discrimination Towards Family and the Child**

In the past, discrimination was often against children with special needs, however, in recent times, it has been found that parents who have children with special needs are also faced with stigma in society ' ———"(Oduyemi, Okafor, Eze, Akodu, & Roberts, 2021). In their study, Oduyemi *et. al.*, (2021) asserted that the stigmatization among parents and families who have children with special needs is often caused by people in the inner circle and those who are closer to the home. Here is one of the reasons why

some parents tend to keep their children with special needs away from the public. Some parents also homeschool their children and do not allow them to go to school so that they do not face discrimination, segregation, and name-calling according to the research by Daniel *et al.* (2021)

#### **Inadequate Awareness about Cerebral Palsy**

Awareness creation has been found as an important tool to aid in creating an effective learning culture among children with cerebral palsy. It has been found that not so many parents are aware of the dynamics and complexities of cerebral palsy in Nigeria- which in a way has reduced the ability to work with children with such a need effectively. For instance, the findings of Okonji and Ogwezzy (2019) showed that educational stakeholders such as parents and teachers did not have adequate awareness about children with cerebral palsy. This, therefore, affects the ability of parents to engage in early intervention when working with children with cerebral palsy. In Port Harcourt, Nigeria, it was also revealed that only 23% of parents were informed about the consequences of cerebral palsy among children and only 12% had adequate awareness of the symptoms exhibited by children with cerebral palsy '—(Eke & Adeyemi, 2023).

### **Recommendations**

#### **Increase in the Rate of Awareness about Cerebral Palsy**

There should be more awareness about the symptoms of cerebral palsy among parents and the larger society. It is the role of the media and non-government agencies to carry out awareness activities to inform parents about the need to be encouraged when working with children with special needs. When Nigerian society is also aware of cerebral palsy and its complexities and implications for learning, there will be a decrease in the rate of segregation.

#### **Provision of Financial Support for Parents who have Children with Cerebral Palsy**

Finance is key to meeting the social and academic needs of children with cerebral palsy. The Nigerian government should create a financial support



scheme for parents who have children with cerebral palsy. Also, they can be given scholarships to support their education without needing to bother their parents. This, in a way, will encourage parents not to feel deterred from having children with special needs.

### There should be an increase in Stakeholder Support

Stakeholder support has to do with the functionality of different people such as teachers, community members, non-governmental agencies, government, and the larger society in meeting the evolving needs of children with cerebral palsy. The children should be supported socially and emotionally. They will also be able to explore their skills to the brim without any form of discouragement.

### Conclusion

This study has examined the strategies of engagement adopted by the Nigerian home in promoting learning among early years learners with cerebral palsy. It has also investigated the prominent learning resources for children with cerebral palsy in Nigerian homes. Moreover, the challenges faced by the Nigerian home in the bid to make educational resources available for learners have been explored. It was found that Nigerian homes engage in inclusive communication settings, play-learn activities, and smart technologies to meet the learning needs of children with cerebral palsy. Adaptive equipment and computer-based learning resources were the prominent learning resources for children with cerebral palsy in Nigerian homes. The challenges faced by the Nigerian home in the bid to make educational resources available for learners were inadequate awareness, poor funding, and discrimination. It was recommended that there should be an increase in government support and increased awareness of cerebral palsy in Nigerian society.

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## **An Assessment of the Impact of Cartoons on the Learning Outcomes of Preschoolers in Lagos State**

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### ***Abstract***

*Technology has allowed educators to select suitable instructional resources and methods, and children discover many words from cartoons which they may apply in daily life. Cartoons also motivate children to speak the intended language. The study examined the effects of educational cartoons on the learning outcomes of preschoolers in Lagos State. The study adopted the quasi-experimental research design. The population of the study consisted of all the nursery pupils in public nursery and primary schools in Yaba Metropolis. The sample of the study comprised 52 nursery two pupils in two intact nursery classes from two randomly selected public nursery and primary schools in the study area. 10-item instrument titled Preschoolers' Literacy Outcomes (PLO) was used to measure the pupils' learning outcome in literacy. The validity of the instrument was ensured by experts in English Education and test and measurement in the University of Lagos, Akoka. The instrument was trial tested with 10 randomly selected pupils from a private nursery school in Yaba. The Kuder-Richardson's formula (K-R 21) was used to determine the consistency of the items within the instrument. The PLO yielded a reliability index of 0.84, which is high enough and considered usable. Analytical techniques including frequency distribution tables, mean scores, and Analysis of Covariance (ANCOVA) were used to analyse the collected data. The findings of the study revealed that there is significant effect of educational cartoons on the learning outcomes of preschoolers in*