

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 the treatment group. Hence, this study recommends that teachers should be encouraged to incorporate educational cartoons in teaching preschoolers to foster good academic performance. Parents should also be encouraged to expose their children to more of educational cartoons than other forms of cartoons. Government should also equip public schools with necessary resources to facilitate the use of educational cartoons.

Keywords: Technology, Instructional Resources, Instructional Methods, Educational Cartoons, and Preschoolers

Introduction

Stories have been essential aspects of children's education and amusement over the course of history, especially within Nigerian communities. Historically, storytelling played a crucial role in imparting moral principles, societal restrictions, and cultural standards to young people. Furthermore, it served as a pivotal means of establishing strong connections between parents, grandparents, and children, promoting effective communication and mutual comprehension across different generations. Nevertheless, the advancement of technology has led to a significant transformation in children's entertainment. Traditional midnight storytelling sessions, which were once widespread, have been largely displaced by contemporary technological options like television, laptops, and smartphones. Cartoons have emerged as the predominant form of entertainment (Akande, 2023). This transition prompts a significant inquiry on how this alteration in media impacted the educational achievements of preschoolers?

Cartoons have become an integral part of children's everyday routines, providing more than just passive amusement. Their visual appeal is enhanced by vibrant colours, innovative environments, and distinctive character models. These elements captivate the attention of children, arouse their curiosity, and enable them to

form an emotional bond with the characters seen on the screen. Cartoons, with their uncomplicated and frequently amusing plots, are easily comprehensible for young children, providing both amusement and educational value. Moreover, numerous cartoons include components that foster education, such as alphabets, numerals, puzzles, and ethical teachings, hence enhancing children's cognitive, emotional, and social growth (Parlakylidiz, Seven, &Parlakylidiz, 2022).

Preschool education, as defined by the Federal Republic of Nigeria's National Policy on Education (FRN, 2014), refers to the initial formal education given to children between the ages of 3 and 5 before they start primary school. It functions as the fundamental basis for the entire educational system. The primary objective of preschool is to facilitate a seamless transition for children from their home environment to the school setting. Preschoolers, as defined by Klenk (2001), encompass children between the ages of three and five. According to Obidikeand Enemu (2016), they possess high levels of energy, creativity, curiosity, and a strong desire for knowledge acquisition. The participants in this study are preschoolers, specifically children between the ages of three and six, who are currently enrolled in a preschool programme. Preschoolers primarily acquire knowledge by engaging their sensory organs, including touch, sight, and hearing. Consequently, they can be classified as tangible or audio-visual learners who may benefit from the utilisation of technologies like animated cartoons.

Despite this, it is evident that the predominant instructional method in Nigerian schools is the lecture technique, which does not seem to foster cognitive development in preschoolers as anticipated by many parents (Nchedo, Ogbeche, & Okeke, 2022). While learner-centred techniques like video tapes and animated cartoons have the potential to enhance the cognitive development of preschoolers, there is typically a lack of focus on using animation cartoons for teaching purposes and how animation can be integrated to facilitate learning (Musa, Ziatdinov, & Griffiths, 2013).

Chiangtong (1975 in Gani, 2020) explains that the term "cartoon" originated from the Latin word "charta," which translates to "paper." During that time, "cartoon" referred to the act of painting on big textile curtains, creating patterns or drawings on mirrors, and producing mosaics. There are seven different sorts of cartoons, which include political cartoons, graphical cartoons, amusement cartoons, comic book or serial cartoons, commercial cartoons, feature-length animated cartoons, and television cartoons. This study examines the impact of animated cartoons. An animated cartoon is a form of animation that is made by capturing sequential images of drawn patterns, resulting in the illusion of continuous motion (Gani, 2020).

In the last decades, cartoons have been an efficient educational tool alongside multimedia technology, especially due to advancements in video quality, easy accessibility of cartoons on video-sharing platforms like YouTube and Teachers tube, widespread use of mobile devices, and faster internet connections. Thus, multimedia research on cartoons and teaching and academic achievement has increased. According to those studies, sound, images, texts, and animations in audiovisual or cartoons generally engaged children, helping them learn (Sinor, 2011). It was underlined that they help children develop mentally, physically, and psychologically and discover their hidden skills (Cho, 2012). However, studies on the effects of cartoons on teachers' in-class teaching methods are neglected or insufficient.

Cartoons' educational benefits and drawbacks have been noted by scholars. Irkin (2012) emphasises that violent-comics caused negative student behaviour. Mayer *et. al.*, (2001) also note that cartoons can mislead learners because they usually simplify a topic and may inhibit them from learning through imagination and mental models. Slang and foreign words may harm children's linguistic development, while excessive cartoon viewing may impede socialisation and critical thinking. Some cartoons teach religion and values poorly, according to Yorulmaz (2013).

It is well known that children in this age range are difficult to control, especially if their teaching is not accompanied by calming techniques. Due to the difficulty of capturing students' attention, Jamal, Ibrahim and Surif (2019) suggest employing visual instructional tools like cartoons. Cartoons should be used in course programs and education like other technologies (Bulbul &Cuhadar, 2011). Teachers who struggle with digital teaching medium also struggle with integration and return to their old teaching methods (Elmas &Geba, 2012). Teachers who choose the best digital tools and materials for pupils should know their educational impact. By selecting technologically appropriate course activities, they boost

learning outcomes (Conole&Alevizou, 2010). Gunes and Baki (2011) claim that teachers' cognition, belief, and attitudes are unsuccessful because their learning and teaching beliefs have not changed.

This study employs the social learning theory, which is crucial for comprehending the influence of cartoons on the educational achievements of preschool children. Bandura's (1977) social learning theory highlights the interplay between cognitive, behavioural, and environmental factors that shape human behaviour. The statement underscores the significance of observation, imitation, and modelling in the process of acquiring new behaviours. Bandura argues that if individuals had to rely exclusively on their own activities to acquire behaviour, the process of learning would be extremely difficult and time-consuming. Instead, the majority of behaviours are acquired through observational modelling, whereby individuals assimilate new behaviours by observing others. The understanding of how preschoolers assimilate and imitate behaviours and attitudes depicted in cartoons is crucial in this process. The theory delineates four distinct stages of social learning which are attention, retention, motor reproduction, and motivation (Baran & Davis, 2003). Preschool-aged children are highly susceptible to influence, and when they are exposed to cartoons, they tend to imitate the behaviours they see. This can have an impact on their ability to read and write, understand numbers, and develop social and emotional skills. Therefore, social learning theory offers a strong framework for analysing the possible impact of media, including cartoons, on the educational achievements of preschoolers in Lagos State.

Scanlan (2000 in Gani, 2020) found that media cartoons assist pupils understand concepts. He emphasises the way cartoons assist pupils understand subject matter with cartoon-based learning approach. The study found that cartoons and student-centered teaching can boost classroom learning. Research shows that animated cartoons help kids learn. Verhallen, Bus, and de Jong (2006) opined that children pay more attention to moving graphics than static ones. Ghilzai, Alam, Ahmad, Shaukat, and Noor (2017) found that Pakistani children who watched cartoons had higher proficiency in languages than those who did not. Lodhi, Ibrar, Shamim, and Naz (2018) found that animated cartoons increased children's cognition. The study also indicated that cartoons improved male and female children's intra and interpersonal conduct. Cartoon-based teaching was examined by Eker and Karadeniz (2014). The quasi-experimental pre-test, post-test control group approach was used with 56 4th graders. The study found that experimental pupils retained more than the control group. In Ilorin, Kwara State, Sulyman, Ajayi, and Reuben (2022) examined how animated films affect social studies students' performance. The study used primary 2 intact classes using a quasi-experimental design. Experimental pupils outperformed control pupils. Omer and Yuksel (2020) examined how three-dimensional cartoons affect preschoolers' spatial perception. The study included 83 48–60-month-old preschoolers. The study employed Solomon four-group experimental design. Researchers devised a concept development test to assess children's conceptual growth. The results showed that cartoons significantly affected preschoolers' conceptual development. These studies show that educational cartoons might help preschoolers in Yaba metropolis Lagos State, learn.

However, the integration of cartoons into official learning contexts in Nigeria is currently limited, despite their significant instructional potential. Cartoons are often disregarded by educators as a teaching tool, even though they have been demonstrated to be beneficial in enhancing engagement and enjoyment in learning (Fleischer, 2010). Gani (2020) opined that cartoons can function as potent visual tools that not only inspire learners but also provoke discourse and improve understanding of intricate concepts. Due to their remarkable characteristics, they serve as a helpful tool for strengthening fundamental principles in both language and mathematics.

Hence, this research aims to evaluate the influence of cartoons on the educational achievements of preschoolers in Lagos State, with a specific emphasis on the impact of these visual tools on the enhancement of literacy skills. Gaining understanding of this connection is crucial for educators as they investigate inventive approaches to captivate children and enhance educational achievements in an ever more technologically advanced society.

The specific objectives of the study are to:

- examine the effect of educational cartoons on the learning outcomes of preschoolers in the treatment group; and
- find out whether the effect of educational cartoons on the learning outcomes of preschoolers in the treatment group is influenced by student gender

Research Questions

- What is the effect of educational cartoons on the learning outcomes of preschoolers in the treatment group?
- What is the influence of student gender on the effect of educational cartoons on the learning outcomes of preschoolers in the treatment group

Research Hypothesis

H₀1: There is no significant effect of educational cartoons on the learning outcomes of preschoolers in the treatment group

Methodology

This study adopted 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. One of the two selected classes was made the control group, comprising 27 pupils, while the other class comprising 25 pupils was made the treatment group. One instrument titled 'Preschoolers' Literacy Outcomes' (PLO) was used to measure the pupils' learning outcome in literacy with 10 items. The validity of the instrument was ensured by experts in the field 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. The PLO was administered to the two groups before any teaching took place and the pupils' answer scripts from the two groups were recorded separately. At another appointed time, the researchers taught the two groups "Word Formation and Simple Sentence Construction". The control group was taught with traditional method and the treatment group was taught with animated cartoon, then the PLO post-test was administered to the two groups and recorded separately for analysis purpose. Analytical techniques including frequency distribution tables, mean scores, and Analysis of Covariance (ANCOVA) to analyse the collected data.

Results

Table 1: Preschoolers' Demographics

Characteristics	Options	Frequency	Percent (%)
Gender	Male	24	46.2
	Female	28	53.8
	Total	52	100.0
Age	3-4 years	13	25.0
	5-6 years	39	75.0
	Total	52	100.0

Source: Field Survey, 2024

Table 1 shows that 46.2% of the preschoolers were male and the majority 53.8% of them were female. While the majority (75.0%) of them were within the age bracket 5-6 years and the remaining 25.0% of them were ages 3-4.

Hypothesis: There is no significant effect of educational cartoons on the learning outcomes of preschoolers in the treatment group

Table 2: Analysis of Covariance (ANCOVA)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1191.941 ^a	3	345.514	11.455	.000	.183
Intercept	6689.879	1	6674.879	193.201	.000	.557
Gender	32.905	1	31.905	.940	.121	.006
Group ^{Between}	970.956	2	455.478	13.855	.001	.654
Error ^{Within}	5318.283	48	36.989			
Total	94599.000	52				
Corrected Total	6510.224	51				

a. R Squared = .654 (Adjusted R Squared = .593)

Table 2 shows that there was a significant difference in mean scores [$F(2,43)=36.989$, $p=0.001$] between the groups, whilst adjusting for gender (as the moderator). The partial Eta Squared value indicates the effect size and should be compared with Cohen's guidelines (0.2 – small effect, 0.5 – moderate effect, 0.6 – large effect). It can be seen that for groups the effect size is large (0.654). This value is also used to describe how much of the variance in the dependent variable is explained by the independent variable (65.4%). Furthermore, the influence of the covariate (gender) can be determined using the Sig. column, which shows $0.121 > 0.05$, which indicates that the influence of gender on the students' achievement in the treatment group test is not significant.

Hence, the null hypothesis that states "there is no significant effect of educational cartoons on the learning outcomes of preschoolers in the treatment group" is rejected, while its alternative that states "there is a significant effect of educational cartoons on the learning outcomes of preschoolers in the treatment group" is therefore accepted.

Discussion of Findings

The results of this study indicate that instructional cartoons like "Super Why", "Sesame Street", "Dora the Explorer", etc., have a notable impact on the learning outcomes of preschoolers. This is in line with Scanlan (2000), media cartoons aid in the comprehension of concepts by learners. He highlights the manner in which cartoons assist learners in their understanding of subject matter using a pedagogical method centred around cartoons. According to the study, the utilisation of cartoons and student-centered teaching methods might enhance the process of learning in the classroom. Studies indicate that animated cartoons have a positive impact on children's learning. Verhallen, *et al.* (2006) discovered that children exhibit a greater level of focus towards animated visuals compared to motionless ones. In a study conducted by Ghilzalet al. (2017), it was discovered that Pakistani children who regularly viewed cartoons demonstrated greater linguistic skills compared to those who did not engage in this activity. These findings are supported by Eker and Karadeniz (2014), Sulyman, *et al.* (2022), and Omer and Yuksel (2020).

Conclusion

This study confirms previous studies that instructional cartoons improve preschoolers' learning. Cartoons help children understand things better when taught utilising animated content. Using cartoons with student-focused teaching has been found to improve classroom learning. Children are more engaged by animated graphics than static ones. Cartoon-watching children also develop better language skills. Cartoons can help young learners develop cognitively and linguistically, according to these findings. Thus, using cartoons in preschoolers' education can improve learning and academic advancement.

Recommendations

The following recommendations were made;

- Animated cartoons can help pupils understand literacy, as it can make learning more fun and help you remember things;
- Educational policymakers and content creators in Nigeria should work together to create high-quality, learning-focused cartoons. These cartoons should cover children's developmental milestones and meet curriculum standards.
- Teachers should learn how to use cartoons in instruction. Access to a variety of educational cartoons and teaching materials will improve their utilisation of this medium;
- Parents should offer educational cartoons at home to increase parental involvement in children's learning. This can enhance classroom learning and intellectual and language development; and
- Cartoons' long-term effects on early childhood development, such as problem-solving, creativity, and social behaviour, should be studied to ensure that instructional content is effective and suitable.

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