Psychological Appeals in Digital Media Animation for Learning in Nigeria

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Abstract
This study examines the potentials and challenges of integrating digital media animation into the Nigerian educational landscape. The study's objectives include assessing the impact of digital media animation on learning outcomes and, identifying barriers to effective implementation. A systematic literature review methodology was employed, drawing insights from academic journals, books, and expert opinions. The analysis focused on effectiveness, accessibility, and cultural relevance, informed by empirical studies and theoretical frameworks, particularly framing theory. Findings suggested promising prospects for digital media animation in improving learning outcomes, with challenges such as limited technology access and cultural disparities identified. The study concludes by emphasizing the need to capitalize on digital media animation's potentials while addressing existing obstacles. Recommendations include investing in digital infrastructure, fostering cultural sensitivity in content creation, and promoting stakeholder collaboration. Through this approach, the study contributes insights to inform future educational initiatives in Nigeria, aiming for more inclusive and effective learning environments.

Keywords: Animation, Cartoon, Classroom, Digitalization & Education

Introduction

Education is widely acknowledged as the cornerstone of national growth and development in any country worldwide. In today's world, optimal learning thrives in environments that are both conducive and equipped with high-quality, technology-supported materials. The integration of technology in education, defined by Drexel University School of Education as the utilization of technology to enhance the student learning experience, exemplifies this concept. This integration not only facilitates multi-faceted learning but also caters to the diverse instructional needs of students, regardless of classroom size or learning environment. Innovative technologies such as smartphones, tablets, computers, and virtual classrooms have revolutionized the learning landscape, fostering active student engagement and yielding positive educational outcomes. Such innovations not only create good environment for learning but also give the learners a new outlook for education.

The use of technology in education creates meaningful and tailored learning experiences for students across various age groups (Drexel University School of Education, n.d.). Modern technology in learning opens up a plethora of possibilities, including the creation and development of relevant learning materials spanning different subject areas. According to D'Angelo (2018), technology empowers students to engage with and comprehend curriculum content effectively. Moreover, it enables educators to seamlessly integrate technology into various curricular and extracurricular activities, such as classroom lessons, assignments, and assessments. Notably, technology plays a pivotal role in crafting instructional materials for early childhood education, with digital media animation content emerging as a popular tool in this regard.

Digital media animation content in education is designed to enhance learning by leveraging computer-generated imagery (CGI) to create interactive animations that aid in problem-solving and information retention. CGI encompasses image manipulation and digital visualization

practices (Rehak, 2023), allowing creators to produce animations ranging from scenes to characters and special effects in games, films, and television (McDonald, 2020). This technology simplifies content creation, particularly in the realm of digital media animation, where CGI facilitates the development of backgrounds, characters, environments, special effects, and entire animated narratives (Straub, 2023).

Animation, tailored to specific age groups, serves as a compelling tool to capture learners' attention and maintain their focus throughout the learning process. Furthermore, animation content distills complex concepts into digestible visual representations, making abstract ideas more tangible (Bairstow, 2023). Bairstow further notes that animation content entertains students, promoting engagement and novelty, provides visualizations for information, sustains attention, and elucidates temporal representations of evolving concepts in modern times.

In Nigeria, educational institutions are increasingly embracing technology to enhance learning experiences, with digital media animation emerging as a promising tool. However, the application of psychological appeals in digital media animation for education in Nigeria presents both opportunities and challenges. On one hand, the adoption of digital media animation fosters innovative approaches to education and curriculum development, aligning with the country's technological advancement. On the other hand, socio-cultural and socio-economic challenges inherent in Nigeria may hinder effective implementation.

In recent years, there has been a notable shift towards digital technologies in education, driven by advancements in communication and information technology (Ogunrinde & Onyene, 2019). Digital media animation, with its ability to engage audiences through visual storytelling and interactive content, holds immense potential for transforming traditional learning paradigms. By incorporating psychological appeals into digital media animation, educators can create immersive learning experiences that enhance understanding and retention of educational concepts (Adegbilero-Iwari & Adesope, 2020). Previous studies have shown that exposure to animation content can improve academic achievement (Anekwe & Opara, 2021; Astumbe et al., 2015), as animation breathes life into inanimate objects (Kwasu, 2015).

However, the application of psychological appeals in digital media animation for education in Nigeria faces challenges. Cultural diversity, socio-economic disparities, and technological limitations pose significant hurdles that must be addressed to unlock the full potential of animated content in education (Okoro, 2019; Ayodele & Adebayo, 2018). Cultural nuances influence how psychological appeals are perceived by Nigerian audiences, emphasizing the need for culturally tailored content (Oluwadara, 2020). Additionally, socio-economic inequalities exacerbate disparities in access to digital resources, hindering marginalized communities' ability to benefit from animated learning content (Oladapo & Adebowale, 2020). The lack of local expertise in animation production further complicates the development of culturally relevant content (Ogbonna, 2021), compounded by challenges such as inadequate electricity supply in rural areas.

Despite these challenges, collaborative efforts between educators, animators, psychologists, and policymakers can address these hurdles and harness the power of psychological appeals in digital media animation for education in Nigeria. Initiatives aimed at promoting digital literacy and expanding access to technology can bridge the digital divide, ensuring equitable access to animated learning resources across Nigeria (Ayodele & Adebayo, 2018). These efforts, informed by thorough research, represent a beacon of hope for technological learning advancement in Nigeria and Africa as a whole.

In summary, the application of psychological appeals in digital media animation holds great promise for enhancing learning outcomes in Nigeria. By addressing challenges related to

cultural diversity, socio-economic disparities, and technological limitations, stakeholders can create an inclusive digital learning environment that empowers Nigerian learners to excel in the 21st century. This study explores the prospects and challenges associated with the adoption and implementation of psychological appeals in digital animation content for education in Nigerian schools.

Overview of Psychological Appeals

Psychological appeals encompass a range of persuasive strategies aimed at influencing human behavior and attitudes by appealing to emotions, beliefs, and cognitive processes (Adegbilero-Iwari & Adesope, 2020). Emotional appeals evoke feelings such as happiness, sadness, fear, or excitement to create a connection with the audience and elicit desired responses (Okoro, 2019). Cognitive appeals, on the other hand, engage the audience's rationality and reasoning, presenting logical arguments and evidence to support a particular viewpoint or course of action (Ogunrinde & Onyene, 2019). Together, these psychological appeals play a crucial role in shaping perceptions, attitudes, and behaviors, making them valuable tools for communication, marketing, and education in diverse contexts (Ayodele & Adebayo, 2018).

In animation, there are higher chances of humans reacting to appeals embedded in animation. It is even more so when such appeals are emotional in nature and conveyed in form of facial expressions (Wisessing *et al*, 2020). This implies that appeals embedded in animation usually elicit a form of reaction from humans who are exposed to such contents in form of digital animation. Psychological appeals are based on the "appeal" principle in animation and are primarily used to capture and maintain the attention as well as focus of the audience throughout the duration of the content. According to Tabarsi (2016) animators take advantage of the appeal principle and capacity in animation to create interesting contents for the audience. Animation and associated aesthetics have also proven to be useful in the academic environment for drawing and maintain the attention of students (Bairstow, 2023; Bhokare, 2023).

Digital Media Animation as a Concept

Digital Media Animation as a Concept Digital media animation encompasses the creation and manipulation of visual content through digital technologies to convey narratives, ideas, and information (Adegbilero-Iwari & Adesope, 2020). It involves the use of computer-generated imagery (CGI), motion graphics, and other digital techniques to bring static images to life, creating dynamic and interactive experiences for audiences (Ogunrinde & Onyene, 2019). Digital media animation spans various forms, including 2D animation, 3D animation, stop motion, and visual effects, each offering unique opportunities for storytelling and engagement (Adegbilero-Iwari & Adesope, 2020). The concept of digital media animation revolves around transforming still images into moving images, as defined by Lycke (2023), animation involves the conversion of 2D and 3D still images into moving images.

This concept has gained prominence in diverse fields, including entertainment, advertising, education, and multimedia communication, due to its ability to captivate audiences and communicate complex ideas in accessible ways (Ogunrinde & Onyene, 2019). Through digital media animation, creators can leverage visual aesthetics, audio effects, and interactive elements to evoke emotions, convey messages, and enhance learning experiences (Adegbilero-Iwari & Adesope, 2020). In education, animation simplifies complex subjects, making them more accessible to students. Educators adopt animation to transform abstract and complex subjects into narratives that enhance students' comprehension and learning experiences (Bairstow, 2023).

E-Learning in Nigeria

E-learning is a concept that has garnered research attention in recent years owing to advancements in information and communication technologies (ICTs) and the Internet. Technology-based e-learning encompasses the adoption and utilization of the Internet and related technologies to create learning materials, teach learners, and regulate courses within organizations (Fry, as cited in Arkorful & Abaidoo, 2014). It offers flexibility and time efficiency for both learners and tutors, simplifying class scheduling and enabling self-paced study on a student-by-student basis. The flexibility in learning associated with e-learning has sparked research interest across various fields of study, resulting in large datasets generated from several research endeavors.

E-Learning in Nigeria has experienced significant growth and development in recent years, driven by technological advancements and increasing demand for flexible and accessible education (Ogundele & Akinsanya, 2020). With the proliferation of internet connectivity and mobile devices, e-learning platforms have become increasingly popular among students, professionals, and lifelong learners seeking to acquire new skills and knowledge (Ajayi & Ekundayo, 2019). These platforms offer a wide range of educational resources, including interactive courses, multimedia tutorials, and virtual classrooms, enabling learners to engage with content at their own pace and convenience (Adeyemo & Ayeni, 2021). Despite challenges such as limited internet infrastructure and digital literacy, e-learning holds promise for expanding access to quality education and bridging educational gaps across Nigeria (Adeyemo & Ayeni, 2021; Ogundele & Akinsanya, 2020).

Review of Empirical Studies

Several empirical studies have investigated the prospects and challenges associated with the application of psychological appeals in digital media animation for learning, particularly within the Nigerian context. Adegbilero-Iwari and Adesope (2020) conducted a study focusing on the effectiveness of emotional engagement in animated educational content. Their research revealed that emotionally engaging animations significantly increase students' motivation and attention, leading to improved learning outcomes.

Similarly, Ogunrinde and Onyene (2019) explored the cognitive impact of animated storytelling on students' comprehension and retention of complex concepts. Their findings suggested that incorporating cognitive appeals, such as interactive narratives and problem-solving scenarios, enhance students' cognitive engagement and critical thinking skills.

In contrast, Ayodele and Adebayo (2018) examined the socio-economic challenges hindering the widespread adoption of digital media animation in Nigerian schools. Their study identified limited access to digital resources and inadequate technological infrastructure as major obstacles to integrating animated learning content into the curriculum. Moreover, Oladapo and Adebowale (2020) investigated the cultural barriers that affect the reception of animated educational materials among Nigerian students. Their research highlighted the importance of cultural relevance and sensitivity in designing animated content that resonates with diverse cultural backgrounds. Based on the research effort, the challenge created as a result of being insensitive to cultures would have been addressed.

Furthermore, Okoro (2019) conducted a comparative analysis of animation usage in urban and rural schools in Nigeria, revealing disparities in access to animated learning resources. Urban schools were found to have better access to digital technologies, while rural schools struggle with limited internet connectivity and technological infrastructure. Additionally, Ogbonna (2021) examined the role of local animation production in addressing cultural and linguistic diversity in educational content. Their study emphasized the need for collaboration between

local animators and educators to develop culturally relevant animated materials. It is believed that such contents will be all-encompassing to the point that better learning outcomes will be achieved.

In summary, empirical studies examining the prospects and challenges in the application of psychological appeals in digital media animation for learning in Nigeria provide valuable insights into the effectiveness, accessibility, and cultural relevance of animated educational content. While research efforts highlight the potential benefits of emotional and cognitive engagement in enhancing learning outcomes, they also underscore the importance of addressing socio-economic disparities, cultural barriers, and technological limitations to ensure equitable access to quality educational resources for all Nigerian learners. Instructively, the studies specifically made recommendations regarding the remedies to the identified challenges.

Theoretical Framework

The theoretical framework underpinning this study is grounded in framing theory, which elucidates how communication messages are constructed to shape individuals' perceptions and interpretations of reality (Entman, 1993). Within the context of digital media animation for learning in Nigeria, framing theory provides a lens to analyze the utilization of psychological appeals in shaping educational content. It specifically deals with the ways psychological appeals are embedded in digital media animation and the prospects of the action in learning.

By employing framing theory, this study aims to examine how animations can strategically frame learning materials to engage Nigerian students effectively. Through the manipulation of visuals, narratives, and emotional cues, digital media animations can frame educational content in a compelling and memorable manner, thereby enhancing learning outcomes (Reinhardt & Greenberg, 2016). Properly framed contents may have positive impact on learning.

This framework allows for a nuanced exploration of the potential of psychological appeals in digital media animations to facilitate learning in the Nigerian context, while also acknowledging the challenges inherent in this approach. Moreover, framing theory enables an examination of the societal, cultural, and educational contexts within which digital media animations operate in Nigeria. As Goffman (1974) posited, frames serve as interpretive schemas that individuals use to make sense of their experiences and surroundings. In the Nigerian educational landscape, where traditional teaching methods often struggle to engage students effectively, digital media animations present a promising avenue for delivering educational content that aligns with the cognitive and emotional needs of learners (Okebukola, 2010).

However, the application of psychological appeals in this context must contend with challenges such as technological infrastructure limitations, socio-cultural considerations, and pedagogical concerns (Ezeani & Iyengar, 2018). Thus, framing theory provides a comprehensive framework for examining both the prospects and challenges associated with employing psychological appeals in digital media animation for learning in Nigeria, offering valuable insights for educators, policymakers, and content creators.

Methodology

This methodology involves a thorough examination of existing literature in journals, books, and book chapters to gather insights and analyze key issues pertinent to the topic at hand. By leveraging qualitative data extracted from a comprehensive review of relevant scholarly sources, this approach enables a nuanced exploration of the effectiveness, accessibility, and cultural relevance of animated educational content within the Nigerian context. Through a systematic analysis of empirical studies, theoretical frameworks, and expert opinions, this

study aims to provide valuable insights into the potential benefits and obstacles of incorporating psychological appeals into digital media animation for educational purposes in Nigeria.

In discussing the findings and implications of the study, it is imperative to delve into a thematic discourse of issues to ensure a comprehensive understanding of the prospects and challenges associated with the application of psychological appeals in digital media animation for learning in Nigeria. By adopting a thematic approach, this discussion aims to contextualize the study within relevant themes and address key objectives systematically. This approach allows for a nuanced exploration of various factors influencing the effectiveness, accessibility, and cultural relevance of animated educational content in Nigerian schools.

Prospects for the Adoption of Digital Media Animation in Learning

Digital media encompass a wide array of communication channels and technologies that leverage digital platforms to disseminate information, ideas, and knowledge to diverse audiences. From traditional electronic media like radio and television to modern platforms such as social media, websites, and mobile applications, digital media revolutionizes the transmission of messages through various means, including audio-visual elements, text, graphics, and interactive content (Yar'Adua, Msughter, & Usman, 2023). In no small ways, digital media ensures that audience members can interact with content in diverse ways, providing new forms of experience for them. This implies that progress is being made in end-user experience due to the advancement in technology across the board.

In the realm of education, the integration of animation and multimedia teaching has emerged as a promising strategy to enhance students' academic performance, particularly in science subjects. Thomas and Israel (2021) conducted a seminal study to assess the impact of animation and multimedia teaching on students' learning outcomes in science subjects. Employing a quasi-experimental research design, the authors selected 100 students from four secondary schools in Ado Ekiti Local Government Area of Ekiti State. Their research design incorporated a pre-test, post-test control group design over a six-week period. Primarily, the study attempted to study students' responses to animation content in select science subjects to place in perspective their impact on improved learning outcomes for secondary school education in Nigeria.

The findings of Thomas and Israel's (2021) study revealed significant disparities in the academic performance of students exposed to cartoon-style multimedia teaching compared to those taught through conventional methods. Through rigorous statistical analysis, the authors demonstrated that the utilization of animation and multimedia teaching significantly enhanced students' comprehension and retention of scientific concepts. This aligns with previous research by Omoniyi and Oginni (2014), which also found that multimedia teaching had a positive impact on student performance in science subjects. The implication of the foregoing is that modern teaching methods that incorporate technology may have certain comparative advantages when compared with traditional methods that do not emphasize adoption and use of modern digital media technology.

Nevertheless, the adoption of digital media animation in educational settings presents its own set of challenges. As highlighted by Kelvin, Zainab, and Suleiman (2023), concerns arise regarding the reliance on technology, which may create barriers to access in regions with limited technological resources. Efforts are necessary to bridge the digital divide and ensure equitable access to visual messages for all students. Additionally, studies by Musa, Ziatdinov, and Griffiths (2013) emphasized the importance of considering cultural interpretations, visual literacy disparities, and language barriers when implementing digital media animation in diverse educational contexts.

Moreover, students' perceptions play a pivotal role in shaping the effective implementation of animation in educational contexts. Arumugam's (2022) study elucidated that student perceive animation as an effective tool for delivering information and grasping complex concepts. However, students also recognize potential drawbacks, such as the time-consuming nature of creating animations and the risk of distraction. This echoes findings from a study by Nalini, Sharma, & Gupta (2020) which highlighted students' interest in using animation in classroom activities. Nalini *et al's* study also acknowledged practical challenges such as time constraints and potential distractions among others in the use of animation in classroom activities.

Furthermore, Bai (2018) discussed the transformative potential of technology in education with emphasis on the role of digital media animation in creating interactive and engaging learning experiences. In the arguments, Bai asserted that animation stimulates students' cognitive functions and enhances their understanding of complex concepts by providing visual and auditory stimuli. Put in another way, when exposed to animation, the cognitive functions of students are likely transformed and stimulated to the point that comprehension of complex concepts is enhanced. This mirrors the findings of similar studies with findings that suggested that exposure to animation may improve the understanding of complex concepts by students (Bairstow, 2023; Berney & Bétrancourt, 2016; Hwang et al, 2012; Leung & Pilgrim, 2011).

In light of these insights, the adoption of digital media animation holds promising prospects for revolutionizing learning experiences in educational settings. By harnessing the benefits of animation while addressing its challenges, educators can cultivate dynamic and interactive learning environments that cater to the diverse needs and preferences of students in any type and form of learning environment. Interestingly, the outcomes in some of the studies reviewed so far show that adoption and deployment of digital animation contents for teaching and learning in schools hold so much potentials and prospects. Through thoughtful implementation and continuous innovation, digital media animation has the potential to empower learners for success in the 21st century and beyond.

Challenges Associated with the Application of Psychological Appeals in Animation

The utilization of psychological appeals in animation represents a potent tool for engaging audiences and effectively conveying complex messages (Ogbonna, 2021). However, despite its potential benefits, the application of psychological appeals in animation encounters challenges, particularly within the Nigerian context. These challenges are multi-dimensional and can be termed as the "multiplicity of challenges" (Okoro, 2019). This arises from the fact that there are several areas and schools where the adoption and deployment of any type of technology for learning remain elusive to some extent. Further review of prospects and challenges is recommended to ascertain desirability and acceptance.

One significant challenge is the cultural diversity and context-specific nuances prevalent in Nigeria. Cultural differences influence how psychological appeals are perceived and understood by audiences. For instance, what may resonate emotionally or persuade in one cultural context may not necessarily have the same impact in another. This cultural sensitivity is crucial to ensure that psychological appeals are tailored to resonate with Nigerian audiences and avoid inadvertently causing offence or misunderstanding (Okoro, 2019). The Nigerian situation is somewhat complex due to the multiplicity of ethnic groups and diverse cultural practices and belief systems, which pose a major hurdle in the use of animation.

Moreover, socio-economic disparities within Nigeria pose another challenge to the effective application of psychological appeals in animation. Nigeria is characterized by vast socio-economic inequalities, with significant disparities in access to education, healthcare, and basic amenities (Oluwadara, 2020). This socio-economic divide can impact the effectiveness of

psychological appeals, as individuals from different socio-economic backgrounds may have varying levels of exposure to psychological concepts and differing capacities to engage with them. This disparity is evident in the limited access to technology and digital resources in rural communities and less-developed areas of Nigeria, hindering the utilization of digital media animation for learning.

Furthermore, the prevalence of low digital literacy rates and limited access to technology in certain regions of Nigeria presents a barrier to the widespread dissemination and reception of animated content employing psychological appeals (Ayodele & Adebayo, 2018). While urban centres may have better access to digital resources, rural areas and marginalized communities often lack the infrastructure and resources necessary to engage with animated content effectively. This lack of access to digital resources further exacerbates the challenges faced in leveraging animation for educational purposes.

Additionally, the lack of local expertise in animation production and storytelling poses a challenge to the development of culturally relevant and contextually appropriate content (Ogbonna, 2021). Many Nigerian animators and content creators may lack formal training in psychology or narrative theory, limiting their ability to harness the full potential of psychological appeals in their work. Bridging this gap requires investment in capacity-building initiatives and collaborations between animators, psychologists, and other relevant stakeholders to enhance the quality and impact of animated content in Nigeria.

Despite these challenges, there are opportunities for addressing them and leveraging the power of psychological appeals in animation within the Nigerian context. Collaborative efforts between animators, psychologists, and cultural experts can facilitate the creation of content that resonates with Nigerian audiences across diverse cultural and socio-economic backgrounds (Oladapo & Adebowale, 2020). Additionally, initiatives aimed at promoting digital literacy and expanding access to technology can help bridge the digital divide and ensure that animated content reaches a wider audience in Nigeria. Public-private partnerships can play a significant role in actualizing digital literacy initiatives on a large scale, benefiting the nation as a whole.

In essence, while the application of psychological appeals in animation presents challenges within the Nigerian context, concerted efforts to address these challenges may unlock the potential of animated content to engage, educate, and inspire audiences across the country. By embracing cultural sensitivity, investing in capacity-building initiatives, and promoting digital inclusion, Nigeria can harness the power of animation to drive positive social change and contribute to the development of a vibrant and inclusive media landscape. Research and further studies in these areas can also be of significant importance in expanding the network of technology-compliant educational institutions in Nigeria, facilitating the adoption and use of digital media animation for simplifying complex concepts and enhancing problem-solving efforts of students.

Conclusion

In conclusion, this study emphasizes the significant potential of digital media animation in enhancing learning outcomes in Nigeria, particularly through the strategic application of psychological appeals. While the findings highlight promising prospects for leveraging animation to engage and educate students effectively, it is crucial to address the inherent challenges, including technological limitations, cultural considerations, and pedagogical concerns. Somehow these factors may inhibit the application and adoption of digital media animation in learning in the 21st century especially in developing countries where technology adoption is a challenge in itself.

Recommendations

Based on the insights gleaned from this study, the following recommendations are made;

i.   There is a need for investment in infrastructure and resources to facilitate widespread access to digital technologies across educational institutions in Nigeria.

ii.   Additionally, educators should receive training and support in integrating digital media animation into their teaching practices, ensuring alignment with curriculum objectives and pedagogical best practices.

iii.   Furthermore, collaboration among stakeholders, including policymakers, educators, content creators, and technology providers, is essential to foster a conducive environment for the development and dissemination of high-quality educational animation content tailored to the Nigerian context. Such collaboration should be championed by the appropriate government agency in charge of education and technology development.

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