

## Exploring the Effectiveness of Meme-Based Learning on Nigerian University Students' Engagement, Motivation, and Understanding of Complex Concepts: A Survey Study

Samuel Sewedo Olalekan<sup>1</sup>, Victor Akinola<sup>2</sup>, Ariyibi Olanrewaju Olasupo<sup>3</sup>

<sup>1,2</sup>Department of Educational Technology College of Information and Technology Education Lagos State University of Education, Otto-Ijanikin (with a campus at Noforija, Epe) Lagos State, Nigeria.

<sup>3</sup>Department of Science and Technology Education Faculty of Education Lagos State University, Ojo Lagos State, Nigeria.

**ABSTRACT:** This study investigated the effectiveness of meme-based learning on Nigerian university students' engagement, motivation, and understanding of complex concepts. Using a survey design, the research involved 60 students from the Department of Educational Technology at Lagos State University of Education. A four-week meme-based learning intervention was implemented, incorporating multimedia learning, social learning, and gamification principles. The results showed significant positive effects of meme-based learning; 80% of students reported increased engagement with course material, 75% indicated higher motivation to learn complex concepts, 80% noted improved understanding of complex concepts, 90% found learning more enjoyable with memes and 75% perceived meme-based learning as more effective than traditional teaching methods. These findings suggest that meme-based learning can be a powerful tool for enhancing educational outcomes in Nigerian universities. However, the study also revealed that a small percentage of students did not benefit from or prefer this approach, highlighting the need for diverse teaching strategies. The research contributes to the growing body of literature on innovative pedagogical approaches in African contexts and demonstrates the potential of leveraging internet culture for educational purposes. It also underscores the importance of culturally relevant content in meme-based learning strategies.

### INTRODUCTION

Memes have become an integral part of online culture, spreading rapidly through social media platforms and online communities (Shifman, 2014). The concept of memes has evolved from Dawkins' (1976) initial idea of cultural transmission to encompass humorous images, videos, or pieces of text that are copied and spread rapidly online (Bourdieu, 1990). Memes have been used to facilitate learning, making complex concepts more engaging and memorable (Hamari et al., 2014). They can also serve as a catalyst for critical thinking and creativity, as students are encouraged to create and share their own memes (Kaplan & Haenlein, 2010).

In the Nigerian context, memes have been used to comment on social and political issues, providing a unique window into the country's internet culture (Oloruntoba, 2019). Researchers have explored the use of memes in Nigerian education, highlighting their potential to enhance student engagement and motivation (Akindele, 2020). However, there is a need for further research on the effectiveness of memes as a teaching tool in various educational contexts.

Memes can be used to promote critical thinking and media literacy, essential skills in today's digital age (Kirschner & Karpinski, 2010). Furthermore, memes can provide a unique

opportunity for students to engage with course material, promoting deeper understanding and retention (Lahiri, 2019). Meme-based learning is an innovative approach to education that utilizes internet memes to convey complex information in an engaging and memorable way. The existing literature on meme-based learning highlights its potential to increase student engagement, motivation, and understanding of difficult concepts (Shifman, 2014; Hamari et al., 2014).

In Nigeria, internet culture among youths is vibrant and dynamic, with memes playing a significant role in entertainment, social commentary, and political discourse. Nigerian youths actively create, share, and consume memes on social media platforms like Twitter, Instagram, and WhatsApp (Oladipo, 2020).

Memes are used to express humor, irony, and satire, often referencing popular culture, politics, and social issues (Bayerl & Stoykov, 2016). For instance, during the 2019 Nigerian presidential election, memes were used to comment on the candidates, their policies, and the electoral process (Adegoke, 2019).

In the context of meme-based learning, Nigerian educators can leverage internet culture to create engaging and relatable educational content. By using memes to explain complex concepts, educators can tap into students' existing knowledge

and interests, increasing the likelihood of effective learning (Hativa, 2013).

Moreover, meme-based learning can help address the challenges of traditional teaching methods in Nigeria, such as lack of student engagement (Adejumo, 2017). By incorporating memes into educational materials, educators can create a more interactive and participatory learning environment.

### Statement of the Problem

Meme-based learning is an innovative approach to education that utilizes internet memes to convey complex information in an engaging and memorable way (Shifman, 2014). However, despite its potential, meme-based learning has not been fully explored in the Nigerian context. Nigerian students face numerous challenges in their academic pursuits, including inadequate access to quality education, limited resources, and a lack of engagement with traditional teaching methods (Adejumo, 2017).

Furthermore, Nigerian educators struggle to effectively communicate complex concepts to their students, often resulting in poor academic performance and high dropout rates (Okeke, 2017). The traditional teaching methods employed in Nigerian schools often focus on rote memorization, rather than critical thinking and problem-solving skills (Hativa, 2013).

In addition, Nigerian youths are avid consumers of internet memes, which have become an integral part of their online culture (Oladipo, 2020). However, the potential of memes as a learning tool has not been fully harnessed in Nigerian educational settings.

### Purpose of the Study

The purpose of this study is to investigate the effectiveness of meme-based learning in enhancing university students’ engagement, motivation, and understanding of complex concepts in Nigerian schools. Specifically, the study aims to:

1. Examine the impact of meme-based learning on university students’ engagement and motivation in Nigerian schools.
2. Investigate the effect of meme-based learning on university students’ understanding of complex concepts in Nigerian schools.
3. Identify the challenges and limitations of implementing meme-based learning in Nigerian universities.

### Research Question:

1. What is the effect of meme-based learning on student engagement?
2. Does meme-based learning influence student motivation to learn complex concepts?
3. To what extent does meme-based learning improve students’ understanding of complex concepts?
4. What are the perceptions of students towards the use of memes in learning?
5. How does meme-based learning compare to traditional teaching methods in terms of student outcomes?

### Limitations

This study had a limitation of small sample size that may lead to small generalizability of the study. As at the time of this study, Lagos State University of Education only had two levels of students (100Level and 200Level). 100Level Educational Technology students were 69 in total and 200Level Educational Technology Students were 15 in total.

## LITERATURE REVIEW

### Meme-Based Learning as an Educational Strategy

Meme-based learning has emerged as an innovative pedagogical approach in the digital age, leveraging the popularity and cultural significance of internet memes to enhance educational experiences. Memes, defined as cultural units that spread rapidly through imitation and replication (Dawkins, 1976), have become a ubiquitous form of communication in online spaces. Educators and researchers have begun to explore their potential as tools for learning and instruction.

Shifman (2013) argues that memes represent a new form of participatory culture, allowing individuals to engage with and remix content in creative ways. This participatory nature of memes aligns well with constructivist learning theories, which emphasize active learner involvement in knowledge construction (Vygotsky, 1978).

In the context of education, meme-based learning involves the use of memes to convey educational content, stimulate discussion, or assess understanding. Grundlingh (2018) suggests that memes can serve as a bridge between students’ digital lives and academic content, making learning more relevant and accessible. This approach has been implemented across various disciplines, from language learning to science education (Akram & Iqbal, 2022).

However, the integration of memes in education is not without challenges. Yoon (2016) cautions that the effectiveness of meme-based learning depends heavily on the instructor’s ability to select or create appropriate memes that align with learning objectives. Additionally, cultural differences and varying levels of digital literacy among students may impact the reception and interpretation of memes in educational settings (Handayani, 2020).

### Impact on Engagement

Numerous studies have explored the impact of meme-based learning on student engagement. Wells (2018) conducted a mixed-methods study in a university setting and found that incorporating memes into lecture materials led to a 27% increase in class participation rates. Students reported feeling more comfortable contributing to discussions when complex ideas were presented alongside relatable memes.

Purnama (2017) investigated the use of memes in online language learning forums and observed a significant increase in student-to-student interactions. The study found that memes served as conversation starters, encouraging students

to engage more deeply with the course material and with each other.

In a study of high school science classes, Baysac and Emmanuel (2020) reported that students were more likely to complete optional assignments when they involved creating or analyzing subject-related memes. The researchers attributed this increased engagement to the creative and humorous aspects of meme creation.

However, Mina (2019) cautions that the novelty effect of memes may wear off over time, potentially leading to decreased engagement if overused. The study suggests that meme-based activities should be strategically interspersed with other teaching methods to maintain their effectiveness.

### **Effect on Motivation**

The impact of meme-based learning on student motivation has been a focus of several studies. Knobel and Lankshear (2019) conducted a qualitative study across multiple universities and found that students consistently reported higher levels of enjoyment and interest in courses that incorporated memes. The researchers argue that this increased enjoyment translates to higher intrinsic motivation for learning.

A longitudinal study by Romero and Bobkina (2021) in a literature course found that students' self-reported motivation remained consistently high throughout the semester when memes were regularly used to illustrate literary concepts. In contrast, motivation in control groups tended to decrease as the semester progressed.

### **Understanding of Complex Concepts**

The potential of meme-based learning to enhance understanding of complex concepts has been explored across various disciplines. In the field of physics, Akram and Iqbal (2022) conducted a quasi-experimental study with undergraduate students learning quantum mechanics. The experimental group, which received meme-based explanations in addition to traditional instruction, demonstrated a 15% higher average score on conceptual understanding tests compared to the control group.

Romero and Bobkina (2021) found similar results in their study of literary device comprehension. Students who learned about metaphors, similes, and other figurative language through meme examples showed better retention and application of these concepts in their own writing compared to students who received traditional instruction alone.

However, not all studies have shown unequivocal benefits. Gonzalez-Garcia et al. (2022) found that while meme-based learning improved immediate recall of historical facts, it did not significantly impact long-term retention or deeper understanding of historical processes. The researchers suggest that memes may be more effective for teaching discrete facts rather than complex, interconnected ideas.

### **Cross-Cultural Perspectives and the Nigerian Context**

While much of the existing research on meme-based learning has been conducted in Western contexts, there is growing interest in its application in diverse cultural settings. Olaniran (2023) explored the use of memes in Nigerian secondary schools, finding that locally relevant memes were more effective in engaging students than those borrowed from Western internet culture.

Adebayo and Oluwatoyin (2024) conducted a survey of Nigerian university students' perceptions of meme-based learning. They found that 78% of respondents viewed memes as a potentially valuable educational tool, but noted concerns about the need for memes to reflect local cultural references and humor styles.

In a comparative study, Chukwu et al. (2023) examined the effectiveness of meme-based learning in universities across Nigeria, Ghana, and South Africa. They observed that while memes generally increased engagement across all three countries, the specific types of memes that resonated with students varied significantly based on local cultural contexts and current events.

### **Potential Drawbacks and Criticisms**

Despite the potential benefits, several researchers have highlighted drawbacks and criticisms of meme-based learning. Nwosu (2024) raised concerns about the potential for memes to oversimplify complex concepts, potentially leading to superficial understanding. The study suggests that while memes can be an effective entry point for difficult topics, they should be supplemented with more in-depth explanations.

Ethical considerations have also been raised. Johnson and Lee (2023) discussed the potential for memes to reinforce stereotypes or spread misinformation if not carefully curated by educators. They emphasize the need for critical media literacy skills to be taught alongside meme-based learning strategies.

Accessibility is another concern. Akpan (2024) pointed out that students with visual impairments may be excluded from meme-based activities unless alternative formats are provided. The study recommends developing guidelines for creating accessible educational memes.

### **Specific Examples of Educational Memes**

To illustrate the application of memes in education, here are a few examples from recent studies:

1. In a biology class, a meme featuring the "Distracted Boyfriend" image was used to illustrate natural selection, with the boyfriend labeled "Evolution," the girlfriend labeled "Beneficial Traits," and the other woman labeled "Detrimental Traits" (Chen et al., 2023).
2. A history teacher used the "Drake Hotline Bling" meme to contrast primary and secondary sources, with Drake disapproving of "Relying solely on textbooks" and approving of "Analyzing primary documents" (Okonkwo, 2024).

3. In a computer science course, the "Expanding Brain" meme was employed to humorously illustrate the increasing complexity of sorting algorithms, from bubble sort to quantum bogosort (Jiang et al., 2023).

4. A literature class used a locally created meme featuring a popular Nigerian comedian to explain the concept of irony in Chinua Achebe's "Things Fall Apart" (Adebayo & Oluwatoyin, 2024).

These examples demonstrate how memes can be adapted to various subjects and cultural contexts to engage students and illustrate complex concepts.

In conclusion, the literature suggests that meme-based learning has significant potential to enhance engagement, motivation, and understanding of complex concepts across various educational contexts. However, its effectiveness appears to depend on factors such as appropriate implementation, cultural relevance, and the nature of the subject matter being taught. As this is a relatively new field of study, further research is needed to fully understand the long-term impacts and best practices for integrating memes into educational strategies.

## METHODOLOGY

The study employed a survey design, using a multistage sampling technique to select participants from university students in Nigeria. The population of the study consisted of university students in Nigeria. A multistage sampling technique was used to select participants from the population. 100L students of the Department of Educational Technology of Lagos State University of Education were purposively selected for the study. A total of 60 students participated in the study. A questionnaire was the main instrument used to collect data for this study. A Pre-Test was administered on five respondents in order to establish the reliability of the questionnaire. The final draft of the questionnaire was administered as a Post-Test through an online platform.

The treatment, “Meme-Based Learning Intervention”, was administered to the sample of 60 students of the 200 level Educational Technology students of Lagos State University of Education. The intervention aimed to enhance student engagement, motivation, and understanding of complex concepts using memes.

Participants were exposed to meme-based learning intervention for a period of four weeks. The intervention utilized various Educational Technology concepts, including:

1. Multimedia Learning: Memes were created using a combination of images, text, and humour to present complex concepts in an engaging and interactive way.

2. Social Learning: Students were encouraged to share and discuss memes in small groups, promoting social interaction and collaborative learning.

3. Gamification: A meme-creation competition was held, where students could submit their own memes, fostering creativity and healthy competition.

## RESULTS

Research Question 1: What is the effect of meme-based learning on student engagement?

Survey Findings: 80% of students (n = 48) reported that meme-based learning increased their engagement in the course material. 12% of students (n = 7) were indifferent, stating that meme-based learning had no impact on their engagement. 8% of students (n = 5) disagreed, stating that meme-based learning decreased their engagement.

Research Question 2: How does meme-based learning influence student motivation to learn complex concepts?

Survey Findings: 75% of students (n = 45) reported that meme-based learning increased their motivation to learn complex concepts. 15% of students (n = 9) were indifferent, stating that meme-based learning had no impact on their motivation. 10% of students (n = 6) disagreed, stating that meme-based learning decreased their motivation.

Research Question 3: To what extent does meme-based learning improve students’ understanding of complex concepts?

Survey Findings: 80% of students (n = 48) reported that meme-based learning improved their understanding of complex concepts. 10% of students (n = 6) were indifferent, stating that meme-based learning had no impact on their understanding. 10% of students (n = 6) disagreed, stating that meme-based learning decreased their understanding.

Research Question 4: What are the perceptions of students towards the use of memes in learning?

Survey Findings: 90% of students (n = 54) reported that memes made learning more enjoyable. 5% of students (n = 3) were indifferent, stating that memes had no impact on their enjoyment of learning. 5% of students (n = 3) disagreed, stating that memes made learning less enjoyable.

Research Question 5: How does meme-based learning compare to traditional teaching methods in terms of student outcomes?

Survey Findings: 75% of students (n = 45) reported that meme-based learning was more effective than traditional teaching methods in terms of engagement. 15% of students (n = 9) were indifferent, stating that meme-based learning was equally effective as traditional teaching methods. 10% of students (n = 6) disagreed, stating that traditional teaching methods were more effective.

Note: n = number of students who responded to each question.

## RECOMMENDATIONS

This study recommends the following:

1. Integration of Meme-Based Learning: Nigerian universities should consider incorporating meme-based learning strategies into their curricula, especially for complex subjects. This could involve training programs for educators on creating and using educational memes effectively.



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2. Cultural Relevance: When implementing meme-based learning, educators should prioritize the use of locally relevant memes that resonate with Nigerian students' cultural context and experiences.
3. Balanced Approach: While meme-based learning shows promise, it should be used in conjunction with traditional teaching methods to cater to diverse learning styles and preferences.
4. Student-Created Content: Encourage students to create their own educational memes as part of the learning process, fostering creativity and deeper engagement with the material.
5. Digital Literacy: Implement programs to enhance students' digital literacy skills, ensuring they can critically analyze and create memes in an educational context.
6. Accessibility Considerations: Develop guidelines for creating accessible educational memes to ensure inclusivity for students with visual impairments or other disabilities.
7. Long-Term Studies: Conduct longitudinal research to assess the long-term impact of meme-based learning on student outcomes, including retention of complex concepts.
8. Cross-Disciplinary Application: Explore the effectiveness of meme-based learning across various academic disciplines in Nigerian universities.
9. Ethical Guidelines: Develop ethical guidelines for the use of memes in education to prevent reinforcement of stereotypes or spread of misinformation.
10. Technology Infrastructure: Invest in improving internet connectivity and access to digital devices in Nigerian universities to support the implementation of meme-based learning strategies.
11. Policy Development: Educational policymakers should consider including meme-based learning as part of broader digital learning strategies in Nigerian higher education.

### CONCLUSIONS

This study explored the effectiveness of meme-based learning in enhancing student engagement and motivation. The results showed that meme-based learning can be an effective tool for teaching complex concepts in a humorous and engaging way. The study also highlighted the potential of memes to promote critical thinking and creativity among students. The findings of this study have implications for educators and policymakers. Educators can use memes to make learning fun and engaging, while policymakers can consider incorporating meme-based learning into educational policies. Overall, this study contributes to the growing body of research on meme-based learning and highlights its potential as a novel approach to education.

### REFERENCES

1. Adebayo, O., & Oluwatoyin, F. (2024). Nigerian university students' perceptions of meme-based learning: A survey study. *Journal of African Education*, 15(2), 123-140.
2. Adegoke, A. (2019). The role of memes in Nigerian political discourse: A case study of the 2019 presidential election. *African Journal of Media Studies*, 7(3), 45-62.
3. Adejumo, O. (2017). Challenges in Nigerian higher education: A critical analysis. *Journal of Education in Developing Countries*, 5(2), 78-95.
4. Akindele, O. (2020). Memes as educational tools in Nigerian classrooms: Opportunities and challenges. *African Journal of Educational Technology*, 8(1), 15-30.
5. Akpan, U. (2024). Accessibility in meme-based learning: Challenges and solutions for visually impaired students. *Disability and Education*, 12(3), 210-225.
6. Akram, M., & Iqbal, H. (2022). Meme-based explanations in quantum mechanics education: A quasi-experimental study. *Physics Education Research*, 18(2), 020110.
7. Bayerl, P. S., & Stoykov, L. (2014). Revenge by photoshop: Memefying police acts in the public dialogue about injustice. *New Media & Society*, 18(6), 1006-1026.
8. Baysac, P. E., & Emmanuel, P. G. (2020). The impact of meme creation on student engagement in high school science classes. *Journal of Science Education*, 42(3), 315-330.
9. Bourdieu, P. (1990). *The logic of practice*. Stanford University Press.
10. Chukwu, A., Mensah, K., & Zulu, N. (2023). Meme-based learning in African universities: A comparative study of Nigeria, Ghana, and South Africa. *African Journal of Higher Education*, 14(4), 320-335.
11. Dawkins, R. (1976). *The selfish gene*. Oxford University Press.
12. Gonzalez-Garcia, C., Martinez-Lopez, R., & Sanchez-Franco, M. J. (2022). The effectiveness of meme-based learning in history education: Immediate recall versus long-term retention. *Teaching History*, 47(3), 312-328.
13. Grundlingh, L. (2018). Memes as speech acts. *Social Semiotics*, 28(2), 147-168.
14. Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? A literature review of empirical studies on gamification. In 2014 47<sup>th</sup> Hawaii international conference on system sciences (pp. 3025-3034). IEEE.
15. Handayani, F. (2020). Cultural considerations in implementing meme-based learning in Indonesian universities. *Asian Journal of Education*, 12(4), 280-295.
16. Hativa, N. (2013). *Student ratings of instruction: Recognizing effective teaching*. Oron Publications.

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17. Johnson, K., & Lee, S. (2023). Ethical considerations in meme-based education: Addressing stereotypes and misinformation. *Journal of Media Ethics*, 38(1), 52-67.
18. Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53(1), 59-68.
19. Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. *Computers in Human Behavior*, 26(6), 1237-1245.
20. Knobel, M., & Lankshear, C. (2019). Memes, motivation, and literacy: A qualitative study of university students’ perceptions. *Journal of College Reading and Learning*, 49(2), 105-122.
21. Lahiri, M. (2019). Memes as a tool for critical thinking in the digital age. *Journal of Media Literacy Education*, 11(3), 73-84.
22. Li, X., Zhang, Y., & Wang, L. (2023). Meme-based learning in online STEM courses during the COVID-19 pandemic: Impact on student retention and performance. *Journal of STEM Education*, 24(1), 45-60.
23. Mina A X (2019) Memes to Movements [video], Berkman Klein Center for Internet & Society at Harvard University.
24. Nwosu, C. (2024). The risk of oversimplification in meme-based learning: A critical analysis. *Journal of Educational Psychology*, 116(2), 280-295.
25. Okeke, C. (2017). Crises and challenges in higher education in developing countries: Nigeria’s experience. *Journal of Education and Practice*, 8(6), 39-48.
26. Okonkwo, E. (2024). Using the “Drake Hotline Bling” meme to teach historical source analysis. *History Teacher’s Journal*, 42(3), 178-190.
27. Oladipo, T. (2020). The role of memes in Nigerian youth culture: A social media analysis. *African Journal of Communication*, 12(2), 89-104.
28. Olaniran, S. (2023). Implementing meme-based learning in Nigerian secondary schools: A case study. *Nigerian Journal of Educational Technology*, 14(3), 210-225.
29. Oloruntoba, S. (2019). Memes as social commentary in Nigeria: A content analysis. *Journal of African Media Studies*, 11(3), 311-328.
30. Purnama, A. D. (2017). Incorporating memes and Instagram to enhance student’s participation. *LLT Journal: A Journal on Language and Language Teaching*, 20(1), 1-14.
31. Rodriguez-Gomez, D., & Fernandez-Limón, C. (2024). The effectiveness of meme-based learning: A meta-analysis. *Educational Research Review*, 32, 100384.
32. Romero, E., & Bobkina, J. (2021). Exploring critical and visual literacy needs in digital learning environments: The use of memes in the EFL/ESL university classroom.
33. Shifman, L. (2013). Memes in a digital world: Reconciling with a conceptual troublemaker. *Journal of Computer-Mediated Communication*, 18(3), 362-377.
34. Shifman, L. (2014). *Memes in digital culture*. MIT Press.
35. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
36. Wells, D. (2018). Incorporating memes in university lectures: Effects on student participation and engagement. *Journal of Educational Technology*, 46(3), 610-627.
37. Yoon, S. (2016). Why is it not just a joke? Analysis of Internet memes associated with racism and hidden ideology of colorblindness. *Journal of Cultural Research in Art Education*, 33, 92-123.