COMPARING TRADITIONAL VS. TECHNOLOGY-ENHANCED TEACHING APPROACHES: IMPLICATIONS FOR LEARNING WILLINGNESS

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Abstract
Computer technologies and their related resources are increasingly adopted in the educational ecosystem in Nigeria. The trend is competing with the conventional teaching method. Traditional and technology-enhanced teaching approaches are widely integrated into the academic ecosystem. However, it is unclear which of the teaching methods better enhances learning willingness. The present study compares traditional vs. technology-enhanced teaching approaches. The sample size comprised 60 students drawn from tertiary institutions in Edo State, Nigeria. The data were collected using a pre-test and post-test. For the pre-test, learning was imparted to both groups using the traditional teaching method that heavily employed lecturing. For the post-test, the control group was taught using the same conventional teaching method, while the treatment group was taught using the technology-assisted learning method. Mean scores of 20.46 and 19.90, with a significant value of 0.375 for the pre-test, established the identical nature of both groups. Mean scores of 27.80 and 30.36 have a significant value of .002 on the post-test, showing that the two groups understudy had different identities in scores, which proved that the technology-assisted learning method improves students' willingness to learn more than traditional communication skills.

Introduction

Recent technological advances have unlocked new educational research directions (Singla et al., 2016). In the era of technology and scientific development, the teaching process continues to witness an academic shift from the traditional teaching method to a more active and student-centered approach, which uses modern teaching methods to assess students' 21st-century skill needs (Abbad Alessa, 2023) . Since 2018, the government of Nigeria has been committed to improving education outcomes in Edo State. One significant initiative is the "EdoBEST" program, which aims to enhance teaching and learning practices. This program focuses on cost-effective approaches to improve learning outcomes, emphasizing foundational learning. Teachers receive structured lesson plans and learning, and development officers provide individualized feedback. The program has successfully improved student experiences, with over 97% of primary schools participating. Research has shown that new teaching and learning methods designed to improve critical thinking were generally effective at enhancing critical thinking dispositions (Lee et al., 2016).

Teaching strategy is an essential part of learning. Without a suitable learning method, the required goals cannot be achieved (Nishat et al., 2021) . In an ever-evolving educational landscape, the choice between traditional teaching methods and technology-enhanced approaches significantly impacts student learning experiences. For instance, innovative teaching in the form of the flipped classroom model has received significant concern in education in recent years (Nhac, 2022) . This model has shown great potential in enhancing student engagement and understanding, especially as it gives the students the opportunity to pause, rewind, and rewatch instructional videos at their own pace, which can cater to different learning styles and abilities.

Similarly, simulation-based learning (SBL) emerged as an imperative pedagogical approach adaptable to situations involving widely varying content (Mishra et al., 2023). SBL allows students to practice complex procedures in a safe

and controlled setting. This hands-on experience improves their technical proficiency and boosts their confidence and decision-making abilities. Also, multimedia content enhances the learning trend and plays a pivotal role in making the teaching and learning process more learner-centric (Kumari et al., 2023). Multimedia content allows for personalized learning experiences where students can progress at their own pace and revisit materials as needed. This flexibility accommodates different learning speeds and preferences, fostering a more inclusive and effective learning environment.

Traditional methods encompass face-to-face interactions, textbooks, chalkboards, and lectures. These time-tested practices have shaped generations of learners. Their strengths lie in familiarity, cultural relevance, and historical success. However, they face challenges, including limited interactivity, passive learning, and potential disengagement. This is because such techniques essentially make students develop a dormant attitude rather than active participation (Dodiya et al., 2019; Olokundun et al., 2018). Traditional teaching methods, such as textbooks and lectures using boards, often fail to provide students with the expected level of knowledge (Deng, 2023) . Innovative teaching techniques have transformed the education landscape, catering to today's learners' diverse needs and preferences. As technology advances, educators have various tools to create engaging and effective student learning experiences across various platforms and settings. The strengths of technology-enhanced methods include increased student engagement, personalized feedback, and opportunities for creativity. While traditional teaching methods have their merits, integrating technology into the classroom can provide innovative ways to enhance the learning process and foster students' willingness to learn.

Traditional teaching methods, rooted in centuries-old practices, coexist with innovative approaches that leverage digital tools. Several studies explore the balance between tradition and technology, considering their effects on student motivation, participation, and overall learning willingness (Alamrani et al., 2018; Amirtharaj et al., 2023; Bi et al., 2019; Du et al., 2022; Kumari et al., 2023; Kumari et al., 2021; Raja & Khan, 2018; Rummel, 2023; Wassinger et al., 2022) . For example, Khayat et al. (2021) found that the flipped teaching method had more significant impacts on the components of self-determination and class perception in university students than the traditional method. Olokundun et al. (2018) noted that adopting experiential, practical activities considered best practices in entrepreneurship teaching in Nigerian universities could stimulate students' interest and drive them to engage in business start-up activities even as undergraduates. Dominic-Ugwu and Nonyelum (2019) reported that multimedia technology teaching methods greatly impacted the interest and performance of the students. Education is a dynamic field that continually adapts to societal changes, technological advancements, and pedagogical innovations. Educators, policymakers, and researchers grapple with which teaching approach best serves our students. Thus, educators can make informed decisions on engaging and inspiring their students by exploring the differences between these two approaches and their effects on learning willingness.

The present study

Integrating interactive learning technologies into traditional teaching methods has become increasingly important in the modern classroom (Moses & Akinnubi, 2023). The fast evolution in technology allows educators to investigate suitable learning environments that integrate online learning with a traditional classroom lecture that provides students with diverse learning styles, such as blended learning (Kassem et al., 2020) . The current study compares traditional and technology-enhanced teaching approaches, aiming to highlight their implications for learning willingness. In a traditional classroom setting, a teacher might use a chalkboard to explain mathematical concepts, while in a technology-enhanced environment, students could use virtual manipulatives to visualize and understand the same concepts. This illustrates how technology can offer a more interactive and engaging approach to learning. In this regard, it is essential to examine the implications of these teaching approaches on students' willingness to learn.

Hypothesis

There is no significant difference in the scores of students taught using the technology-enhanced learning method and those taught using the traditional learning method.

Method

A quasi-experimental design was adopted in the study. The current study's population included undergraduate students from tertiary institutions in the Edo State of Nigeria. Sixty (n = 60) students were recruited as research participants from three public tertiary institutions in Edo State. The students were mainly pooled from the year one class and comprised males and females in the science and non-science departments. With permission from the school authorities, the students were approached in their classes. Those who passed the study criteria were asked to take part in the study to understand their willingness to learn regarding technology-enhanced learning methods and traditional learning methods. Thus, only those who consented to participate were given the study instruments.

The participants are divided into two groups: the first one is the experimental group, and the second is the control group. An innovative idea is introduced for the experimental group, not the control group. The data were collected using a pre-test and post-test. For the pre-test, communication skills were imparted to both groups using the traditional teaching method for the study period (4 weeks), which heavily employed lecturing followed by a task sheet that students completed. The mean scores of both groups were compared, and significant value was checked to establish that both groups had identical entities. For the post-test, the control group was taught using the same traditional teaching method. In contrast, the treatment group was taught using the technology-assisted learning method for the study period. The mean scores of both groups were again compared, and significant value was checked.

Result

Pre-test Results

Sixty undergraduates were split into two equal groups, and both groups were taught using the traditional learning method until the end of the four weeks. Students were taught using lectures, PowerPoint presentations, and task sheets. Their test scores were used as a pre-test. Their scores were compared using mean value and significant difference.

Table 1

Mean Scores (Pre-Test) for Controlled and Treatment Groups

	Mean	N	Standard Deviation	Std. Error
Controlled Group	20.467	30	2.3154	.4227
Treatment Group	9.900	30	2.3976	.4377

Table 2

T-Test Statistics for Pre-Test

| | Mean | Std. Deviation | **Paired Differences** | | | t | df | Sig. (2-tailed) |
| | | | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
				Lower	Upper			
Controlled Group - Treatment Group	.5667	3.3185	.6059	.6725	1.8058	.935	29	.357

The mean scores of 20.46 and 19.90, with a significant value of 0.375 for the pre-test, indicate no significant difference between the results of each group. This validates the identical nature of the participants who will undergo the investigation. As the test is statistically insignificant at a 95% confidence interval, it indicates that, on average, there is no significant mean difference between the two groups.

Post-test Result

After the mid-term exams, the control group was taught using the traditional learning method. In contrast, the treatment group was taught using the computer-assisted learning method, which focused on simulating various learning scenarios. Students were engaged in tasks that required them to use communication skills taught in real life, such as interviewing, meetings, problem-solving, and professional socializing. The final test scores were used as the post-test results.

Table 3

Mean Scores (Post-Test) for Controlled and Treatment Groups

	Mean	N	Standard Deviation	Std. Error
Controlled Group	27.800	30	3.2313	0.5900
Treatment Group	30.367	30	3.3986	0.6205

Table 4

| | Mean | Std. Deviation | **Paired Differences** | | | t | df | Sig. (2-tailed) |
| | | | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
				Lower	Upper			
Controlled Group - Treatment Group	2.5667	4.0995	.7485	4.0974	1.0359	3.429	29	.002

T-Test Statistics for Post-Test

The mean scores of 27.80 and 30.36, with a significant value of .002 on the post-test of both groups, indicate a significant difference between the results of each group. This validates that the treatment group has a different identity in scores in comparison to the control group, while mean scores have indicated a positive difference in the scores of the group taught using the technology-enhanced learning method. On average, the control group's mean scores are less than 2.5 units than those taught using the technology-enhanced learning method; therefore, the results are highly statistically significant, as indicated by the p-value, which is less than .05 at a 95% confidence interval.

Discussion

The study aimed to determine if the technology-enhanced or traditional learning method is more effective in enhancing students' learning willingness. The data analysis of the study reflects that both groups were identical since their mean scores were 20.46 and 19.90, with significant values of 0.375 until both were taught using the traditional method. However, the group of students (control group) who were taught using the traditional learning method scored less in the post-test, which indicates that these students learned less and showed inconsistent performance than the group of students (treatment group) who were taught using a technology-enhanced learning style. On the other hand, data analysis of the treatment group reflects more output and consistent performance. The results show a difference in the impact of the two teaching methodologies adopted for teaching in the education ecosystem. It also shows that students who were taught using the technology-enhanced learning method demonstrated better learning willingness. The findings coincide with other research studies that show that students taught via differentiated teaching have more power of retention than students taught via traditional teaching methods (Kamran et al., 2019). Although both groups were tested using the same assessment in the final exam (post-test), the change in the teaching methodology became a contributing factor in learning willingness.

The implication of the study

The research findings have some implications for the teachers, students, school authorities, and curriculum planners. Indeed, the finding implicates the technology-enhanced method as an effective strategy to enhance students' willingness to learn. Also, this has implications for all the stakeholders in education with inclusive students. More so, it implies that the teachers' continuous use of the conventional discussion method will not significantly improve students' learning commitment. It equally means that if school authorities and curriculum planners do not try to enforce the use of technology by the curriculum implementers (teachers), the students may not improve their academic commitment as expected. Utilizing an excellent teaching tool is vital for students' education nowadays. In contrast to the traditional teaching way (L.supian et al., 2023).

Conclusion and Recommendations

This study explored whether technology-enhanced or traditional learning methods enhance students' willingness to learn more effectively. The data analysis and findings clearly prove that technology-enhanced learning methods improve learning willingness. Therefore, the study contributes to the literature by supporting previous research that promotes the integration of computer-assisted instructional methods in the classroom in Nigeria. Nevertheless, the sample size used in the study may pose a significant challenge for generalizing this result. Future researchers should include more representative samples and explore other moderating variables that could broaden our understanding of this outcome. However, the study recommends fully integrating computer resources in the classroom and consistently training instructors in this direction.

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