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The Students' Voice: Perceptions of Senior Secondary School Students on the Efficacy of Web-Based Learning Application in Learning Commerce

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ABSTRACT

This study investigates the perception of students on the effect of a web-based instructional application (WBIA) on Lagos State senior secondary school students' academic achievement in commerce. This study employs a qualitative method of research and one research question was raised to guide it. The study focuses on senior secondary school II Commerce students in Lagos State, Nigeria. A convenience sampling technique was employed to select the representative sample schools. A Web-Based Instructional Application was developed for the purpose of this study to teach commerce. Ten students were randomly chosen for the interview after the intervention. A Web-Based Instructional Application Interview Guide (WBIAIG) was used to collect data for this study and was validated. The recorded interview was verbatim transcribed to analyze the qualitative data. The qualitative findings of students' responses to the interview reflect the positive perception regarding the use of the web-based instructional application for teaching commerce. The application appeared to enhance engagement, accessibility, and understanding of commerce topics, making learning more enjoyable and effective for the students. It is therefore recommended that students should be encouraged to use the application for self-paced learning, revision, and interactive practice to deepen their understanding of Commerce.

1. Introduction

The prime goal of education is to equip students with the required knowledge and skills to become autonomous both during their studies and after graduation. It plays a decisive role in the economic, social, and moral development of any nation. Its key objective is to transfer knowledge and wisdom from one generation to the next, enabling young people to

become responsible citizens and contribute to the development and sustenance of society (Osuchukwu, 2018). To accomplish this, teachers need to employ effective teaching methods, media, strategies, and techniques when delivering instructional content, ensuring students are well-prepared for life yonder the classroom. The choice of teaching methods, techniques, or approaches meaningfully influences the

effectiveness of learning activities both within and outside the classroom (Anaekwe, [2020](#)).

The conventional approach of teaching commerce, which largely relies on textbooks, chalk, and lecture-based methods, has been provenderisory in addressing various learning styles or fully engaging students with the subject matter. This often results in poor academic performance and diminished interest in commerce as a viable career option. Research highlights that students frequently struggle with the inability to learn and retain information effectively (Chow, [2011](#)). Consequently, teachers must address the challenges of knowledge retention beyond initial instruction and implementation strategies that provide permanent solutions. It is extensively acknowledged that a significant segment of what students learn in school is forgotten, largely due to the teaching strategies employed. Some studies have linked students' poor academic performance to ineffective teaching methods and instructional technologies, often stemming from a disconnect between teaching approaches and students' learning needs (Ekundayo, [2022](#)).

Web-based learning intrinsically requires active student involvement in learning activities, in conjunction with a high level of discipline, motivation, and self-regulation. Its interactive qualities encourage students to engage in challenging tasks, connecting new information to prior knowledge, achieving meaningful understanding, and employing their meta-cognitive skills. Being dynamic in nature, web-based learning can be implemented either synchronously or asynchronously (Gambari, [2017](#)). The asynchronous aspect, in particular, provides students with the advantage of processing information, reflecting, constructing meaning at their own pace, and responding thoughtfully with clear and concise written messages.

Commerce is a core subject for senior secondary commercial students in Nigeria, categorized under compulsory cross subjects. It covers topics such as trade, aids to trade, sole proprietorship, partnership, human relations and customer services, and occupation. These topics aim to equip students with essential skills for earning a livelihood and contributing to the economy. According to the National Policy on Education, a primary objective of secondary education in Nigeria is to produce graduates capable of making meaningful contributions to society and achieving self-sufficiency (Federal Republic of Nigeria, [2014](#)). Addressing the nation's unemployment challenges requires equipping young individuals with entrepreneurial skills that foster self-employment. Consequently, the senior secondary

school Commerce curriculum is designed to impart these skills, emphasizing the significance of Commerce in both the school system and the nation. The syllabus integrates academic and practical skills, ensuring students are employable or self-reliant upon graduating from Senior Secondary School III. Commerce, regarded as both a social science and a vocational subject, is a mandatory course for all senior secondary commercial students in Nigeria (La Paro, [2000](#)).

However, the adoption and effectiveness of such tools often depend on students' perceptions and attitudes toward them. In the context of senior secondary school Commerce, a subject that demands critical thinking and understanding of business concepts, the integration of web-based instructional applications could potentially enhance academic achievement (Malcolm, [2015](#)). Despite the widespread availability of these tools, there is a lack of empirical evidence on how students perceive their utility, relevance, and impact on their academic performance. This gap in knowledge raises critical questions such as; are students motivated to use these applications? Do they find them effective in improving their understanding and performance in Commerce? Are there barriers that hinder their utilization? Addressing these questions is critical to ensure that the integration of web-based instructional applications aligns with students' needs and expectations, ultimately enhancing their academic outcomes (Million, [2020](#)).

This study aligns with Vygotsky's constructivist principles, particularly the notion that learning occurs most effectively when students actively engage with instructional tools and collaborate in knowledge construction. Web-based instructional applications serve as modern scaffolding tools, providing interactive features such as simulations, peer collaboration platforms, and instant feedback mechanisms (Maryam, [2019](#)). Lev Vygotsky's Theory of Constructivism emphasizes the role of social interaction, culture, and language in the cognitive development of learners. Central to his theory is the concept of the Zone of Proximal Development (ZPD), which refers to the difference between what a learner can achieve independently and what they can achieve with guidance or collaboration.

Vygotsky ([1978](#)) argued that learning is a socially mediated activity, and instructional tools or strategies that provide scaffolding can enable students to progress beyond their current capabilities. These features support students' exploration and understanding of complex Commerce concepts, facilitating learning within their ZPD (Lantolf, [2006](#)).

Furthermore, Vygotsky's emphasis on the socio-cultural context underscores the importance of students' perceptions and attitudes toward these applications. If students view web-based tools as accessible, supportive, and relevant to their learning goals, they are more likely to engage actively and derive academic benefits. Conversely, negative perceptions may limit the effectiveness of these tools, hindering their potential to act as scaffolding within the ZPD (Omodan, [2020](#)).

This study inquired the perceptions of senior secondary school students regarding the effect of web-based instructional applications on their academic achievement in Commerce, providing insights that can guide educators, policymakers, and developers in optimizing the use of technology in education.

Research Question

What is the perception of students on the use of Instructional Web-based Applications?

2. Methodology

A qualitative research design was adopted for this study. This evaluated the perception of the students toward the use of Web-Based Instructional Application for learning commerce. This was established using an interview guide which the researcher developed. The Interview guide was used to collect in-depth information from students about their academic achievement, their attitudes towards commerce, and their use of the web-based instructional application which was conducted in person.

The population of this study comprises all Senior Secondary Schools II (S.S.S. II) Commerce students in Lagos State, Nigeria preparing to move to Senior Secondary School III (S.S.S. III). The sample size for this study comprises 10 commerce students from two different Senior Secondary schools under Education District V in Lagos State, Nigeria. The district was selected using the convenience sampling technique for easy accessibility while schools were selected using the purposive sampling technique. The major reason for adopting this technique is due to the homogeneity nature of this research work because not all schools possess the required facilities needed to conduct this study. As such, the researcher ensured that there was availability of the same facilities across all schools as that helped reduce any form of untrue result. To establish that this school possesses these facilities, the researcher surveyed the Education District.

Web-Based Instructional Application Interview Guide is a self developed instruments used to gather data to measure the perception of students on the use of web-based learning platforms in the teaching and learning of commerce in senior secondary schools. This research instrument was subjected to face and content validity. It was validated with the help of supervisors, two commerce teachers having significant years of teaching experience in senior schools and experts on the field of test and measurement. Another criterion for the selection of teachers to validate the instrument was their involvement in the coordination exercise and marking of WASSCE. The recorded interview was transcribed and analyzed thematically.

3. Results

The perception of students on the use of developed instructional web-based application was obtained given the qualitative pathway of an in-depth interview. Based on the students' interview responses, three major themes emerged regarding their perception of the Instructional Web-Based Application for learning Commerce. These themes are:

Theme 1: Accessibility and Flexibility

Students consistently emphasised how the web-based application allowed them to learn at their convenience, beyond the confines of the classroom. This flexibility fostered a sense of independence and control over their learning pace.

- John noted, *"I can access the materials anytime. It's like having a teacher available 24/7."*
- Fatima stated, *"I can study anytime, anywhere... I'm more confident in class now."*
- Funmi added, *"Even without much tech experience, I can use it effectively. It's like having commerce class on my phone."*
- Ahmed commented, *"It's like having a personal tutor in my pocket, and I can review lessons before exams."*

These responses underscore the perceived value of the application's on-demand accessibility, which enables continuous learning and supports revision beyond scheduled classroom periods.

Theme 2: Interactive and Engaging Content

The interactive features of the application—such as videos, quizzes, and animations—were seen as a major strength, making abstract concepts easier to understand and learning more enjoyable.

- Emeka shared, *"It helps me understand complex topics better with videos and interactive quizzes."*
- Amina observed, *"It includes videos, quizzes, and interactive activities. It keeps me engaged and motivated."*
- Mary said, *"It breaks down complex topics into simple explanations and examples."*
- Bolu commented, *"It's user-friendly, and I can learn at my own pace. I wish all my subjects had something like this."*

These remarks reflect students' positive experiences with the multimodal content, which caters to diverse learning styles and keeps them engaged.

Theme 3: Confidence and Motivation through Personalised Learning Features

The application was also praised for its ability to support self-paced learning and monitor personal academic progress. This created a sense of achievement and motivation among students.

- Chinedu said, *"It keeps track of my progress and performance. It motivates me to do better and gives me a sense of achievement."*
- Nkechi mentioned, *"I feel more in control of my learning... the practice tests are invaluable."*

These insights suggest that the personalised and student-centred nature of the application contributes to greater confidence, academic responsibility, and intrinsic motivation. The analysis of students' responses reveals an overwhelmingly positive perception of the developed Instructional Web-Based Application for learning Commerce. The themes of accessibility and flexibility, interactive and engaging content, and personalised support for motivation and confidence demonstrate that students view the application as a valuable tool that enhances their learning experience (Walker, [1994](#)).

Discussion

The perception of students on the use of Web-based Instructional Applications can differ widely depending on various factors such as the design and functionality of the applications, their relevance to the curriculum, ease of use, accessibility, and effectiveness in aiding learning. Here are some common perspectives that students may have as regards to their responses:

First of all is the convenience as many students confirm that they appreciate the convenience of accessing learning materials and resources anytime, anywhere through web-based applications. Large

class sizes restrict innovative and engaging teaching methods like discussions, debates, and simulations (Ogundele, [2013](#)). Teachers are forced to rely on traditional didactic approaches, which can be monotonous and fail to cater to diverse learning styles. But now, students affirm they can study at their own pace and fit learning into their busy schedules, which can especially benefit students with other commitments such as jobs or family responsibilities. When a web-based application is designed to be engaging, they can enhance student engagement by incorporating interactive elements such as quizzes, simulations, videos, and gamification. Large class sizes restrict the use of innovative and engaging teaching methods like discussions, debates, and simulations (Yazan, [2017](#)). This limits the development of critical thinking, problem-solving, and communication skills, crucial for success in commerce and beyond (Abd-El-Aziz, [2017](#)). However, with the aforementioned engaging activities embedded into the web-based application, these features can make learning more enjoyable and motivating for students, leading to increased participation and better retention of information. Students confirm that the experiences they get from the quizzes gives them an edge to remember questions and answers.

Personalization is the key to self or individualized learning as some students value the ability of web-based applications to provide personalized learning experiences tailored to their individual needs and learning styles. Adaptive learning technologies can assess students' strengths and weaknesses and deliver customized content and recommendations to help them progress at their own pace. This has been able to curb the issue limited individualized attention raised by Adeyemo ([2014](#)) which is often common with class sizes often exceeding 50 students, personalized attention becomes nearly impossible. Teachers struggle to cater to individual learning styles, address specific needs, and provide timely feedback in such crowded classrooms (Abubakar, [2011](#)). This lack of individual attention can lead to disengagement, frustration, and ultimately, lower academic performance among students (Adesina, [2011](#)). But with the intervention of instructional web-based application, learning can now be personalized and students commends it as truly helpful.

Accessibility is a very important feature of Web-based applications as they have the potential to make education more accessible to students with disabilities or those who face barriers to traditional classroom learning. Even in normal school settings, overcrowded classrooms often lack adequate resources like textbooks, learning materials, and technology

(Crawford, [2020](#)). This further hinders effective learning and creates an unequal learning environment. The limited resources are often distributed unevenly, leading to disadvantages for students in larger classes who struggle to access necessary materials (Adeyemo, [2014](#)). On the instructional web-based application, the students confirm that features such as screen readers, alternative text for images, and adjustable font sizes can accommodate diverse learners and ensure equal access to educational resources. Like 5 respondents confirmed their joy in accessing the platform whenever and wherever.

Added to this list is the opportunity for students to collaborate with their friends. When such features are integrated into instructional web-based applications, such as discussion forums, group projects, and real-time collaboration tools, enable students to interact with their peers and instructors, fostering a sense of community and facilitating collaborative learning experiences (Selma, [2021](#)).

Some students mentioned technical issues, despite the benefits, students may encounter technical issues such as slow loading times, compatibility issues with different devices or browsers, and occasional system crashes (Tukura, [2020](#)). These problems can disrupt the learning experience and frustrate students, particularly if they occur frequently or during critical moments, such as during assessments or when submitting assignments. On a general perspective of the students, the quality of performance of the students ultimately hinges on the quality of the content contained in the instructional web-based applications. Students expect well-designed, accurate, up-to-date, and relevant learning materials that align with their academic goals and objectives (Onah, [2022](#)). Poorly curated or out-dated content may lead to disengagement and uncertainty about the effectiveness of the applications.

However, some inevitable barriers such as internet access, availability of relevant devices and digital literacy can significantly influence students' experiences and perceptions of the use of the Web-based learning applications. Dependable and inexpensive internet connectivity remains a critical bottleneck to utilize web-based learning in instruction. Lack of appropriate digital devices presents another formidable barrier in implementing web-based learning application. Also, most schools, particularly at the primary and secondary levels, students are prohibited from bringing personal mobile devices, further limiting their access to digital learning tools. Beyond having access to the internet and appropriate devices, the power to effectively use web-based

learning applications is digital literacy both students and educators. There is a notable lack of digital literacy among teachers and students in many Nigerian educational institutions (Oni, [2025](#)).

All these factors can be linked to the term "Digital divide". Digital divide according to Afzal et. al. ([2023](#)) is a social problem that is caused by inequalities in the ability to access and use information communication technologies. This is not just a threat to social and economic development of any nation but also, to education sector which can also hinder instructional process. To deal with these issues, the stakeholders must not merely provide the technological devices but also prioritize skilled development for educators. Training teachers to effectively use digital tools is essential for enhancing classroom experiences and ensuring that the implementation of technology in education is effective (Adedoyin, [2020](#)).

4. Conclusion

Overall, the perception of students on the use of developed instructional web-based applications is shaped by their experiences with these platforms and their ability to support and enhance their learning journey. When designed thoughtfully and implemented effectively, web-based applications have the potential to revolutionize education by making learning more accessible, engaging, and personalized for students of all backgrounds and abilities.

The findings reveal overwhelmingly positive perceptions among students regarding the use of a web-based instructional application for learning Commerce. Students praised its accessibility, describing it as a tool that enables anytime, anywhere learning, fostering self-paced study and exam preparation. The interactive features, such as videos and quizzes, were highlighted for making learning more engaging and catering to diverse learning styles. Many students also noted how the application simplifies complex topics, boosts confidence, and enhances understanding. Additionally, features like progress tracking and practice tests motivated students by offering a sense of achievement and control over their learning. In summary, the web-based instructional application has significantly improved students' learning experiences in Commerce, demonstrating its potential to transform traditional educational methods and enhance academic outcomes.

From the findings of the study, the following recommendations were made within the limitations of the study:

1. Teachers should be trained on how to effectively utilize web-based instructional applications in the classroom to enhance student engagement and learning.
2. Students should be encouraged to use the application for self-paced learning, revision, and interactive practice to deepen their understanding of Commerce.
3. Educational institutions should provide access to devices and reliable internet connectivity to ensure all students can benefit from the application.
4. Teachers should integrate the application into their lesson plans, using its features to simplify complex topics and assess student progress.
5. Policy makers should develop and implement policies that promote the integration of web-based instructional tools into the national curriculum.
6. Funding should be allocated to schools, particularly in underserved areas, to provide the necessary infrastructure for effective use of web-based applications.
7. Regular monitoring and evaluation of the application's impact on academic performance should be conducted to ensure its continued relevance and effectiveness.
8. Developers should incorporate feedback from students and teachers to improve the usability and relevance of the application's features.

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