

**EVALUATING THE IMPLEMENTATION OF ONLINE
INSTRUCTION IN HIGHER INSTITUTIONS: EVIDENCE
FROM A NIGERIAN COLLEGE OF EDUCATION USING
THE STUFFLEBEAM'S CIPP MODEL**

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Abstract

In recent years, nations were afflicted by COVID-19 pandemic. Originated from China, the spread of the pandemic caused several alterations to life styles which include partial and absolute lock down regulation, online communication and so on. Therefore, the need to incorporate ICT into education to promote online learning and instruction is a paramount issue in many countries. Embedded mixed methods design was adopted as the study design and 600 students in a college of education were selected as the sample for the investigation. The instruments used were ICT Resources Checklist (ICTRC) and Students' Evaluation Interview guide (SEIG). Both quantitative (mean) and qualitative (thematic analysis) modes of analysis were employed. The evaluation outcomes showed that: 1) students' expectations are to experience quality

learning, learn in a conducive environment and achieve good grades; 2) students had access to online learning software and ICT gadgets except for good network access; 3) Implementing online instruction was marred by several challenges such as ICT, students' and institutional factors; 4) most college students preferred physical classes over online classes. The study recommends improved internet infrastructure, enhanced lecturer capacity in online pedagogy, and stronger institutional support to enhance online learning in Nigerian Colleges of Education.

Keywords: *Online instruction, Students' satisfaction, Information and communication technology, Evaluation,*

Introduction

The adoption of Information and communication technology (ICT) through the use of the internet and other ICT tools in education has contributed tremendously to the improvement experienced in learning in recent times (Ezeabii et al., 2019). This innovation made it possible for learning to take place beyond the walls of school environments and facilitated distance learning programmes. In recent years, the world was afflicted by the Coronavirus Disease (COVID-19) pandemic. This situation led to the closure of many institutions, and educational institutions were included in several countries around the world (Tian & Lu, 2022; Cofini et al., 2022; Zahari et al., 2025). Countries around the world engaged in online interactions to facilitate trade, communication etc. Therefore, the need to incorporate ICT into education in order to promote online instruction became a paramount issue, and the idea is to extend teaching beyond the school environment.

Reliance on ICT led many countries to embrace online instruction or online learning to achieve their educational objectives. Generally, studies carried out by researchers have shown that using ICT for instruction and learning promotes students' learning (Siddiquah & Salim, 2017; Ullah et al., 2019).

However, some studies showed that ICT were under-utilized for the learning environment (Mwanda et al., 2017; Oso & Adesua, 2017). Focusing on online instruction, studies have shown that online learning promoted quality instruction and academic performance (Akpen et. al., 2024; Rakha, 2025), positive students' perception of online instruction (Muthmainna et al., 2023; Najjar et al., 2025) and high satisfaction with online instruction (Cofini et al., 2022; Liwanag & Padohinog, 2025; Zahari et al., 2025). However, students have also shown low satisfaction with online instruction (Sa & Serpa, 2020; Elshami et al, 2021; Tian & Lu, 2022). Finally, challenges of online instruction like low engagement (Akpen et al., 2024), isolation, distractions (Basa et al., 2025), Poor digital infrastructure (Muthmainna et al., 2023; Pahenra et al., 2024; Ndibalema, 2025; Ravendaran & Mohammed-Nasri, 2025) and so on emerged, and they had negative effects on learning (Rishko et. al., 2025).

Due to this inconclusive position of researchers and based on the aforementioned, there is a need to carry out a comprehensive evaluation on the implementation of online instruction to provide information on the credibility of this mode of learning for quality decision making, especially in Nigeria, where learning institutions have been sceptical about it. Therefore, this study undertook a comprehensive evaluation of the implementation of online instruction in a college of education using Stufflebeam's CIPP evaluation model. This study specifically:

- a. explored the learning needs of students in the implementation of online instruction;
- b. assessed the quality of input resources available for implementing online instruction;
- c. examined the quality of classroom interaction in the implementation of online instruction;
- d. determined how well the implementation of online instruction has been achieved in terms of participants' satisfaction; and
- e. ascertained the preference of participants on the choice of mode of instruction (online & physical classes).

Research Questions

The following questions were asked to guide this study:

1. What are the needs of students in the implementation of online instruction?
2. What is the availability of ICT resources needed for implementing online instruction?
3. What is the quality of classroom interaction during the implementation of online instruction?
4. What is the level of students' satisfaction after the implementation of online instruction?
5. What is the preference of students when online instruction and physical classes are compared?

Methods

The study adopted an embedded mixed methods design, which involves nesting one or more forms of qualitative data within a larger quantitative design or vice versa. This is because a single data set is not sufficient to provide the needed information for the investigation (Creswell, 2014). The population involved all students at the Federal College of Education, Ogun State. For the quantitative strand, 600 students were selected using Krejcie and Morgan (1970) sample size determination and a multi-stage sampling procedure was used for the selection. Furthermore, the qualitative strand required a sub-sample of 20 students selected for collecting in-depth qualitative data. The purposive sampling technique was used for this selection.

The ICT Resources Checklist (ICTRC) and Students' Evaluation Interview Guide (SEIG) were the research instruments. ICT Resources Checklist (ICTRC) is a checklist designed to measure the presence or absence of ICT tools needed to facilitate online instruction while Students' Evaluation Interview guide (SEIG) is a semi-structured interview guide designed to provide information on students' needs and expectation before the implementation of online instruction, their opinion of online instruction, problems affecting learning using online instruction, students' satisfaction with online instruction

and comparison of online instruction and physical classes based on students' preference. The truthfulness, trustworthiness and credibility of SEIG was determined through the use of participant check procedure; an Audio recorder provided the consistency mechanism needed to enhance the quality of the data collection process. Frequencies and mean were adopted for quantitative analysis, while thematic analysis was used for qualitative analysis.

Results

Research Question One: What are the needs of students in the implementation of online instruction?

Table 1: Needs Assessment of Online Instruction

Themes	Sub themes
Student's needs and expectations	Achieving good grades Learning in a conducive environment Quality learning

Table 1 presents the needs and expectations of students in the implementation of online instruction. Firstly, some students expressed their needs in form of good grades on the course.

“... my expectation is to come out in flying colours.” (Student 01, male)

Learning in a conducive environment is another expectation of the students using online instruction. Some excerpts are:

“My needs before the implementation of online teaching programme are conducive and calm atmosphere that enhances learning and assimilation process ...” (Student 16, female)

“There should be ... a conducive and calm environment that enhances easy assimilation.” (Student 18, male)

Finally, quality learning is another expectation from the students. Some excerpts are:

“while my expectations are effective teaching and explanation of the lesson from the teacher ...” (Student 09, male)

“... proper lecturing from lecturers in my field of study” (Student 14, female)

Research Question Two: What is the availability of ICT resources needed for implementing online instruction?

Table 2: Availability of ICT Resources Needed for implementing Online Instruction

ICT Resources	Available	Not available	Mean	Remark
Licensed application software such as zoom, Google, etc.	576	24	1.96	Available
Quality Network access for online instruction	264	336	1.44	Not available
Quality ICT gadgets such as phones, laptops etc.	432	168	1.72	Available
Grand Total	1272	528	1.71	Available

Expected weighted Mean = 1.5

From table 2, licensed application software (1.96) and Quality ICT gadgets for online instruction (1.72) are available at the disposal of the students because both values exceed the expected mean (1.5). However, the quality of network access for online instruction is unavailable (1.44) because it did not exceed the expected mean (1.5).

Research Question Three: What is the quality of classroom interaction during the implementation of online instruction?

Table 3 Students’ Perception of Classroom Interaction

Themes		Sub themes
Students’ perception of classroom interaction	ICT Factors	Poor internet connection Insufficient data
	Student Factors	Distractions Poor comprehension
	Institutional Factors	Insufficient time Lack of collaborative effort

Students' perception involved the stated challenges of classroom interaction during the implementation of online instruction. The first challenge is poor internet connection experienced by the students during the implementation of online instruction. Some excerpts are:

"There is distraction everywhere I receive lectures, there is always a breakdown in network ..." (student 04, male)

"... another barrier is that if someone loses connection, automatically he/she loses a step and explanation especially in courses with calculations. Due to this setback, it could be difficult to understand the whole calculation." (Student 12, female)

Similarly, insufficient data for online browsing is another challenge as students complained of expensive data acquisition to attend online classes. Some excerpts are:

"... secondly, there is data subscription problem. It is one of the major problems affecting learning online. Not all the student including myself had the money to buy data on phone for online learning" (Student 17, female)

"I faced lots of problems using online platform such as; inability to purchase enough data ..." (student 20, male)

Another challenge experienced by the students during the implementation of the online instruction is poor comprehension. Some excerpts are:

"... the problem is that student will not understand and assimilate the lessons well when online learning is compared to physical class" (Student 05, female)

"It is not easy to grasp the understanding of the course due to lack of proper explanation ..." (student 19, male)

Students revealed that distraction is another challenge hindering the implementation of online instruction. Some excerpts are:

“There is distraction everywhere I receive lecture ...” (student 04, male)

“... it is noise pollution because students are not in the school premises: This is a situation whereby student can be distracted because they are not in school” (student 11, male)

Insufficient time during the online instruction is another issue as students complained of insufficient time to ask questions during online lessons. Some excerpts are:

“There is no time for asking of questions ... and there is lack of good network.” (Students 10, male)

“Time is limited and insufficient...; there is limited time for question” (Students 11, male)

Finally, students emphasized that online teaching lacks collaborative effort among students because it does not encourage group activities in the class.

“The problem is that students were not be able to acquire knowledge properly when compared to physical class, where you ask different question and they is proper interaction among students and between students and lecturer” (Students 10, male)

Research Question Four: What is the level of students’ satisfaction after the implementation of online instruction?

Table 4: Students’ Satisfaction Level

Themes	Sub themes	Frequency of responses
Learners’ satisfaction	High satisfaction	1
	Low satisfaction	19

From table 4, two sub-themes were generated under this theme. Firstly, one student was highly satisfied.

“Actually, I am satisfied with it because I can record the lectures and listen to it later in the day.” (Students 01, Male)

Most students (f=19) had poor satisfaction of the implementation of online instruction. Some excerpts are:

“It is not satisfactory because it is not easy to manage the situation and not easy to understand. It also lacks face to face interaction...” (Students 02, female)

“Learning online is not so good, no expression, no satisfaction on answers ...” (Students 10, Male)

Research Question Five: What is the preference of students when online instruction and physical classes are compared?

Table 5: Students’ Preference or Choice of Mode of Instruction

Themes	Sub themes	Frequency of responses
learners’ choice of mode of instruction	Online instruction	Nil
	Physical classes	20

From Table 5, all the students preferred physical classes to online instruction. Some excerpts are

“I prefer physical class because I will be able to share my thought and opinion on what the lecturer is lecturing ...” (Students 01, Male)

I would prefer choosing to learn especially for Mathematics/calculation courses in physical class because I have access to ask questions from the lecturer; and also solve questions on the board...” (Students 04, Male)

Discussions

The result of the context evaluation revealed that students’ needs and expectations are to experience quality learning, learn in a conducive environment, and achieve good grades. This outcome showed that students had good expectations, which is very important for every student in school. Learning away from the school setting did not bring laxity in their enthusiasm to learn, as they showed good intention to study using online instruction. This

study underscores the outcome in input evaluation, as most of them acquired the necessary ICT gadgets for learning and licensed application software.

For the input evaluation, students had access to online learning software and ICT gadgets, except for good network access. The outcome showed the level of preparedness and enthusiasm of students towards learning online. This result underscores the findings in the context evaluation where students showed good expectations towards online instruction. The findings corroborate the reports of Siddiquah and Salim, (2017); Muthmainna et al (2023) and it contradict the reports of Mwanda et al (2017); Oso and Adesua (2017).

The process evaluation revealed that online instruction was marred by several challenges, such as ICT factors (poor internet connection & insufficient data), student factors (poor comprehension & distractions), and institutional factors (Insufficient time and lack of collaborative effort among students). This finding provides insight into the issues around the implementation of online instruction, and this will distort the value of online instruction offered. This finding underscores the finding in the input evaluation where the quality of internet access is poor, which could be regarded as the direct or indirect cause of the majority of the problems highlighted. Also, the outcome supports the report of Oso and Adesua (2017); Sa and Serpa (2020); Elshami et al (2021), Ravendaran and Mohammed-Nasri (2025).

Finally, the product evaluation showed that most students were not satisfied with online instruction and preferred physical classes. This finding showed that students were unhappy and disappointed with the implementation of online instruction. Although their enthusiasms were high as revealed by the context evaluation and their acquisition of ICT gadgets but different problems emanated from the implementation process. These challenges of online instruction were highlighted in the process evaluation and they include ICT factors (poor internet connection & insufficient data), student factors (poor comprehension &

distractions), and institutional factors (Insufficient time & lack of collaboration among students). These problems disrupted students' usage of online instruction and eventually led to poor satisfaction. The findings underscore on challenges of online instruction and poor network access in both input and process evaluation. Also, the result supports the report of Sa and Serpa (2020); Elshami, et al (2021); Tian and Lu (2022), while it contradicts the reports of Cofini et al (2022); Liwanag and Padohinog (2025); Zahari et al (2025).

Conclusion

This study undertook a comprehensive evaluation of the implementation of online instruction in a college of education. Using the CIPP evaluation approach, students' expectations are to experience quality learning, learn in a conducive environment, and achieve good grades. For the inputs, students had access to online learning software and ICT gadgets, except for good network access. The process of implementing online instruction was marred by several challenges such as ICT factors (poor internet connection & insufficient data), student factors (poor comprehension & distractions), and institutional factors (Insufficient time & lack of collaborative effort among students). Based on the product of the evaluation, most students preferred physical classes due to poor satisfaction with online instruction.

Recommendations

The study recommended that training workshops and seminars on innovative pedagogical practices for online instruction should be organised for lecturers in order to improve their capacity to deliver online instruction with efficiency. Government and private investors should invest in education through the provision of quality internet network facilities and ICT architecture to boost the quality of delivery of online instruction. Lecturers should encourage collaborative effort among learners during online instruction.

References

- Akpen, C. N., Asaolu, S., Atobatele, S., Okagbue, H., & Sampson, S. (2024). Impact of online learning on student's performance and engagement: A systematic review. *Discover Education*, 3, Article 205. <https://doi.org/10.1007/s44217-024-00253-0>
- Basa, K. T., Beo. J. T. B., Delgado. R. P., Mariano, N. M. R., Regala, P. E. P., Santos. J. M., Velasco. S. C., David, R. M. T. (2025). Exploring the Relationship between Online Learning Behaviour and Onsite Assessment Scores of the Students, *International Journal Of Research And Innovation In Social Science (IJRISS)*, 9(06), 2440-2453. <https://dx.doi.org/10.47772/IJRISS.2025.906000185>
- Cofini, V., Perilli, E., Moretti, A., Bianchini, V., Perazzini, M., Muselli, M., Lanzi, S., Tobia, L., Fabiani, L., Necozone, S. (2022). E-Learning Satisfaction, Stress, Quality of Life, and Coping: A Cross-Sectional Study in Italian University Students a Year after the COVID-19 Pandemic Began. *International Journal of Environmental Research and Public Health*, 19 (13), 1-17. <https://doi.org/10.3390/ijerph19138214>
- Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approach*. (4th ed.). pp 46, United States: Sage publication.
- Elshami, W., Taha M. H., Abuzaid, M., Saravanan, C., Al-Kawas, S., & Abdalla, M. E., (2021). Satisfaction with online learning in the new normal: perspective of students and faculty at medical and health sciences colleges. *Medical education online*, 26(1), 1-10. <https://doi.org/10.1080/10872981.2021.1920090>
- Ezeabii, I. C., Chibuikwe, V. C., & Udeh, S. O., (2019). Influence of social media on academic performance of business education students of public universities in Southeast states of Nigeria. *British Journal of Education*, 7(2), 81-90. <https://ejournals.org/bje/vol-7-issue-2-february-2019/influence-of-social-media-on-academic-performance-of-business-education-students-of-public-universities-in-south-east-states-of-nigeria/>

- Liwanag, B. A., & Padohinog, E. C. (2025). Online learning satisfaction (OLS) among college students: Factors and implications. *SDCA Asia-Pacific Multidisciplinary Research Journal*, 7(1), 28-34. <https://zenodo.org/records/17149314>
- Muthmainna, N. R., Ahyani, N., & Wahidy, A. (2023). Implementation of online learning during the COVID-19 pandemic. *Journal of Social Work and Science Education*, 4(2), 572–582. <https://doi.org/10.52690/jswse.v4i2.417>
- Mwanda, G., Mwanda, S., Midigo, R., & Maundu, J., (2017). Integrating ICT into Teaching and Learning Biology: A Case for Rachuonyo South Sub-County, Kenya. *International Journal of Education, Culture and Society*, 2(6), 165-171. <https://doi.org/10.11648/j.ijecs.20170206.12>
- Najjar N, Roupheal M, Bitar T & Hleihel W (2025). The rise and drop of online learning: adaptability and future prospects. *Frontier in Education*, Article 1522905. <https://doi.org/10.3389/feduc.2025.1522905>
- Ndibalema, P. (2025). Digital literacy gaps in promoting 21st century skills among students in higher education institutions in Sub-Saharan Africa: A systematic review. *Cogent Education*, 12(1), Article 2452085. <https://doi.org/10.1080/2331186X.2025.2452085>
- Oso, S. O., & Adesua, V. O., (2017). Availability and utilization of internet facilities among undergraduate students of colleges of education Nigeria. *British Journal of Education*, 5(9), 100-107. https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.eajournals.org/wp-content/uploads/Availability-and-Utilization-of-Internet-Facilities-among-Undergraduate-Students-of-Colleges-of-Education-Nigeria.pdf&ved=2ahUKEwiblayG3OyRAXWhQ0EAHVSTOmUQFnoECCAQAQ&usg=AOvVaw1-akX_nvPIIzf9BvMyTW8o
- Pahenra A. N., Nongko, A., Said, H., La Ndibo, Y., Deluma, R. J., & Parida, P. (2024). Implementation and challenges of online learning in early childhood education post COVID-19

- pandemic. *Journal of Education Research*, 5(4), 4661 – 4671. <https://doi.org/10.37985/jer.v5i4.983>
- Rakha, A. H. (2025) Promoting online teaching through active learning strategies: Applications and innovations. *Frontier in Education*, 10, Article 1546208. <http://doi.org/10.3389/educ.2025.1546208>
- Ravendaran, S., & Mohammed-Nasri, N. (2025). Challenges in the Implementation of Digital Learning in Primary School. *International Journal of Research And Innovation In Social Science (IJRISS)*, 9(9), 6181 - 6185. <https://doi.org/10.47772/IJRISS.2025.909000504>
- Rishko, Y., Boboshko, D., Eliseeva, E., Malkin, A., & Treistar, D. (2025). Analysis of the impact of the transition to online education during the COVID-19 pandemic on the future academic performance of university students. *SAGE Open*, 15(1), Article 21582440251324753. <https://doi.org/10.1177/21582440251324753>
- Sa, M. J., & Serpa, S. (2020). The COVID-19 Pandemic as an Opportunity to Foster the Sustainable Development of Teaching in Higher Education. *Sustainability*, 12(20), 8525. <http://doi.org/10.3390/su12208525>
- Siddiquah, A., & Salim, Z., (2017). The ICT Facilities, Skills, Usage, and the Problems Faced by the Students of Higher Education. *EURASIA Journal of Mathematics Science and Technology Education*. 13(8), 4987-4994. <http://doi.org/10.12973/eurasia.2017.00977a>
- Tian, M. & Lu, G. (2022). Online learning satisfaction and its associated factors among international students in China. *Frontiers in Psychology*, 13, Article 916449. <http://doi.org/10.3389/fpsyg.2022.916449>
- Ullah, M.A., Alam, M.M., Shan A Alahi, A., Rahman, M.M., Masum, A.K.M., & Akter, N. (2019). Impact of ICT on students' academic performance: Applying association rule mining and structured equation modeling. *International Journal of Advanced Computer Science*

and Applications, 10(8), 387–393. <https://doi.org/10.14569/ijacsa.2019.0100852>

Zahari, N./ S., Abdul Rahman, N., & Zahari, M./ F. (2025). Exploring students' satisfaction in Online learning using regression analysis. *International Journal on E Learning and Higher Education*, 20(2), 59–73. <https://doi.org/10.24191/ijelhe.v20n2.2024>