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MICROSOFT TEAMS ADOPTION FOR INSTRUCTION: AWARENESS, ACCESSIBILITY AMONG COMPUTER SCIENCE LECTURERS IN FEDERAL TERTIARY INSTITUTIONS KADUNA STATE, NIGERIA

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Abstract

The role of technology and digital transformation in higher education has become increasingly significant in the 21st century, reshaping teaching and learning practices in Nigeria and globally. This study examined the extent of awareness and accessibility (System availability) of Microsoft Teams for Instruction among Computer Science lecturers in Federal Tertiary Institutions in Kaduna State, Nigeria. A cross-sectional descriptive research design was adopted. The population comprised 202 lecturers, of whom 202 were selected using census-based sampling techniques. A total of 192 completed questionnaires were retrieved and used for analysis. Data were collected using a validated instrument with a reliability coefficient of 0.752 (Cronbach's Alpha). Descriptive statistics (frequency, mean, and standard deviation) and Chi-square tests were used for data analysis. Findings revealed that lecturers demonstrated a high level of Awareness of Microsoft Teams for Instruction, with a mean score of 2.97, exceeding the decision mean of 2.50, and the difference was statistically significant ($\chi^2 = 411.63$, $p < 0.001$). On the other hand, Accessibility was relatively low, with a mean score of 2.41 below the decision mean, and showed a statistically significant difference ($\chi^2 = 258.40$, $p < 0.001$). This indicated that while lecturers are generally aware of the platform, access is limited and largely dependent on personal efforts rather than institutional support. The study concluded that although awareness of Microsoft Teams for Instruction is high, accessibility remains inadequate. It recommended improved ICT infrastructure, enhanced institutional support, and targeted capacity-building programmes to promote effective integration of Microsoft Teams in teaching and learning.

Keywords: Microsoft Teams, Awareness, Accessibility, Virtual Learning Platform, Teaching and Learning and ICT

Introduction

The role of technology and digital transformation in higher education has become increasingly significant in the 21st century, reshaping how teaching and learning are conceptualised and delivered globally. Digital platforms now provide enhanced flexibility, interactivity, and collaboration, fostering inclusivity and extending learning opportunities beyond the limitations of physical classrooms. As a result, higher education institutions are progressively integrating digital technologies into curriculum design and instructional delivery to improve teaching effectiveness and student learning outcomes (Abdulbaqi et al., 2025; Bond et al., 2024).

The outbreak of COVID-19 in 2020 significantly accelerated this transformation, compelling institutions worldwide to adopt online collaboration platforms such as Microsoft Teams to ensure continuity of instruction during campus closures (Dhawan, 2020; Rapanta et al., 2021). This period exposed both the opportunities and challenges associated with digital learning, particularly in relation to infrastructure, access, and digital competence (Hodges et al., 2020; Bozkurt et al., 2023). Among these platforms, Microsoft Teams has emerged as one of the most widely adopted tools for educational collaboration, offering features such as synchronous teaching, file sharing, assignments, discussions, and real-time interaction. Recent reports indicate that Microsoft Teams has surpassed 300 million monthly active users globally, with widespread adoption across educational institutions (Microsoft, 2024; Business of Apps, 2025; DemandSage, 2025). Despite this growth, the effectiveness of its instructional use varies depending on factors such as awareness, accessibility, digital infrastructure, internet connectivity, and user competency (Ifinedo et al., 2022; Tondeur et al., 2021; Scherer et al., 2023).

In developed regions such as North America and Europe, higher education institutions have successfully integrated Microsoft Teams into blended and hybrid learning models, supported by strong digital infrastructure and policy-driven innovation. This has enhanced communication, collaboration, and student engagement,

although outcomes depend significantly on instructional design and lecturer proficiency (EDUCAUSE, 2023; Taylor & Francis, 2024; Bond et al., 2024). Computer science plays a critical role in driving digital transformation and innovation. Computer Science lecturers, due to their technological expertise, are expected to be early adopters of digital instructional tools such as Microsoft Teams, as they are responsible for preparing students for participation in a technology-driven global economy (Redecker, 2022; UNESCO, 2023).

Conceptually, the effective instructional use of Microsoft Teams depends on interconnected factors. Lecturers must first be aware of the platform and its capabilities; however, awareness alone is insufficient without accessibility. Accessibility entails the availability of institutional subscriptions, reliable internet connectivity, and functional ICT devices. These factors collectively determine the extent to which Microsoft Teams can be effectively utilised to support instructional delivery and enhance student learning outcomes (Scherer et al., 2023; Bond et al., 2024). This context underscores the relevance and timeliness of the present study.

Statement of the Problem

The rapid advancement of digital technologies, further accelerated by COVID-19 in 2020, has transformed instructional delivery in higher education globally. Platforms such as Microsoft Teams have become essential tools for supporting teaching and learning, particularly in virtual and blended environments. In developed regions, including North America, Europe, and parts of Asia, Microsoft Teams has been effectively integrated into instructional practices, supported by strong digital infrastructure, institutional policies, and continuous professional development. Despite its global recognition and widespread adoption, the effectiveness of Microsoft Teams in educational contexts depends largely on lecturers' awareness of its capabilities and the level of accessibility or system availability provided by institutions.

Nevertheless, in Nigerian Federal tertiary institutions, particularly in Kaduna State, the integration of Microsoft Teams for instructional purposes remains uneven and largely underdeveloped. Challenges such as inadequate ICT infrastructure, unreliable internet connectivity, high cost of data, limited institutional support, and weak policy implementation continue to hinder effective access to digital platforms. While Computer Science lecturers are expected to be at the forefront of adopting instructional technologies due to their disciplinary background, there is growing concern that their level of awareness of Microsoft Teams and its instructional functionalities may not be sufficient. More critically, even where awareness exists, accessibility in terms of system availability, institutional subscriptions, functional devices, and stable internet remains a significant constraint. The lack of adequate awareness and limited accessibility to Microsoft Teams restricts its effective integration into teaching and learning processes.

Furthermore, there is a scarcity of empirical data specifically addressing these variables among Computer Science lecturers in Federal tertiary institutions in Kaduna State. This gap makes it difficult for policymakers, institutional administrators, and educational stakeholders to design targeted interventions and make informed decisions regarding digital learning implementation. Therefore, this study seeks to examine the extent of awareness and accessibility (system availability) of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria.

Objectives of the study

This study was conducted to achieve the following objectives:

1. determined the extent of awareness of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria.
2. examined the extent of accessibility of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria.

Research Questions

1. What is the extent of awareness of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria?
2. What is the extent of accessibility (system availability) of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria?

Hypotheses

The following hypotheses were formulated to guide the study:

H_{01}: There is no significant difference in the level of awareness of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria

H_{02}: There is no significant difference in the level of accessibility of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria

Methodology

The study employed a descriptive survey research design aimed to assess Microsoft Teams Adoption for Instruction; Awareness and Accessibility among Computer Science Lecturers in Federal Tertiary Institutions in Kaduna State, Nigeria, involving Computer Science lecturers across the seven (7) Federal tertiary institutions in Kaduna State, Nigeria. The population of the study comprised 202 Computer science lecturers, out of which 202 were selected using a Census-based sampling approach. This approach is supported by Makwana (2023), who highlights the importance of this suitable sampling technique due to its small population for generalisation and eliminating errors. This approach was adopted in previous related studies by Boot et al. (2026). The researcher administered 202 questionnaires, of which 192 were successfully retrieved and used for data analysis. Data was collected using a validated questionnaire with a reliability index of 0.752, as determined using Cronbach's alpha. The data was analysed using both descriptive and inferential statistics of the Chi-square statistical test.

Research Question One: What is the extent of awareness of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria?

This research question was analysed using Means and Standard deviation to describe the results, as shown in Table 1 below.

Table 1: Mean Scores on Responses of the Extent of Awareness of Microsoft Teams for Instruction

S/N	Item	VA	A	SA	NA	Mean	STD	Decision
1	I am aware that Microsoft Teams can be used for teaching and learning.	68	84	35	5	3.12	0.79	Aware
2	I am aware of the video conferencing feature of Microsoft Teams.	69	99	22	2	3.23	0.67	Aware
3	I know that Teams allows lecturers to create virtual classrooms.	90	76	22	4	3.32	0.74	Aware
4	I am aware of the assignment and grading features on Microsoft Teams.	45	49	72	26	2.59	0.98	Aware
5	I know Teams integrates with other Microsoft tools (Word, Excel and PowerPoint)	118	48	21	5	3.45	0.71	Aware
6	I am aware of the chat/messaging features in Teams for instruction.	33	49	84	26	2.46	0.96	Aware
7	I know that Teams supports group collaboration among students.	25	53	78	36	2.35	0.93	Aware
8	I am aware of the file-sharing and storage options in Teams.	68	84	35	5	3.12	0.79	Aware
9	I know that Teams can be used to provide feedback to students.	42	73	50	27	2.67	0.90	Aware
10	I am aware of Teams' potential to improve teaching and learning.	83	96	9	4	3.34	0.68	Aware
	Grand Total					**2.97**	**0.82**	

(Decision Mean = 2.50)

The table 1 above results revealed a grand (cumulative) mean of 2.97, which is higher than the decision mean of 2.50. This indicates that, overall, Computer Science lecturers are aware of Microsoft Teams for instructional purposes. The associated Standard deviation value of 0.82 showed a moderate variation in responses, meaning most lecturers share similar levels of awareness with only slight differences. Generally, the results reported that

Computer Science lecturers have a good level of awareness of Microsoft Teams for teaching and learning, with fairly consistent responses among respondents.

Research Question Two: What is the extent of Accessibility of Microsoft Teams for Instruction among Computer Science Lecturers in Federal Tertiary Institutions in Kaduna State, Nigeria?

This research question was analysed using Means and Standard deviation to describe the results, as shown in Table 2 below.

Table 2: Mean Scores on Responses of the Extent of Accessibility of Microsoft Teams for Instruction

S/N	Item	SA	A	D	SD	Mean	STD	Decision
11	My institution provides official Microsoft Teams accounts for me as a lecturer	2	11	37	142	1.34	0.63	Not Accessible
12	I have reliable internet connectivity to use Microsoft Teams	25	48	69	50	2.25	0.99	Not Accessible
13	My institution provides ICT devices (Tablet, Smartphone, Interactive Boards, Laptops, Projectors for Teams)	29	65	78	20	2.54	0.87	Accessible
14	I can afford the internet data needed for Microsoft Teams	38	82	50	22	2.71	0.91	Accessible
15	Power supply is adequate for consistent Teams usage	34	26	84	48	2.24	1.02	Not Accessible
16	My institution provides technical support for Teams-related issues	20	49	82	41	2.25	0.91	Not Accessible
17	Is the ICT infrastructure used to support Microsoft Teams for teaching in my institution?	9	39	108	36	2.11	0.75	Not Accessible
18	I can easily log in and navigate Microsoft Teams	30	102	38	22	2.73	0.86	Accessible
19	Microsoft Teams is accessible across my devices (laptop, tablet and Smartphone)	26	70	74	22	2.52	0.87	Accessible
20	Accessibility of Teams encourages its use in teaching	18	60	92	22	2.39	0.81	Not Accessible
	Grand Mean					***2.41***	***0.87***	

(Decision Mean of 2.50)

The Table 2 results revealed a grand mean of 2.41, which is below the decision mean of 2.50, indicating that Microsoft Teams is generally not adequately accessible to lecturers in Federal tertiary institutions in Kaduna State. Since the grand mean falls below the decision mean, which reported that institutional, infrastructural and technical barriers, such as limited provision of ICT devices, inconsistent power supply, inadequate internet connectivity and insufficient institutional support, limit effective access to the platform.

The standard deviation of approximately 0.87 shows moderate variation in responses**,** meaning lecturers' views on accessibility are relatively close, although some differences exist across institutions and specific items. Generally, the result submitted that Microsoft Teams is less than moderately accessible to Computer Science lecturers for instructional purposes, despite relatively consistent response patterns among respondents.

Hypothesis Testing

H01. There is no significant difference in the extent of awareness of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria.

Table 3: Chi-square (X^2) Statistics on Significant Difference in the Extent of Awareness of Microsoft Teams for Instruction among Computer Science Lecturers in Federal Tertiary Institutions in Kaduna State, Nigeria.

Variable	N	df	X^2 Calculated	X^2 Critical (0.05)	P-value	Decision
Awareness of Microsoft Teams	192	3	411.63	7.815	< 0.001	Rejected

x^2 computed = 411.63, p-value= < 0.001

The Chi-square analysis in Table 8 revealed a statistically significant difference across response categories (χ^2 = 411.63, df = 3, $p < 0.001$; χ^2 critical = 7.815). The null hypothesis was therefore rejected, indicating that lecturers' awareness of Microsoft Teams is feature-specific**,** varying across functionalities such as virtual classroom creation, assignment management, chat/messaging and integration with Microsoft tools. The large margin

between the calculated and critical Chi-square values underscores substantial variation in awareness levels, as reported that while most lecturers are generally aware of Microsoft Teams, their knowledge of specific features differs.

H02: There is no significant difference in the extent of accessibility of Microsoft Teams for instruction among Computer Science lecturers in Federal tertiary institutions in Kaduna State, Nigeria.

Table 4: Chi-square (X^2) Statistics on Significant Difference in the Extent of accessibility of Microsoft Teams for Instruction among Computer Science Lecturers in Federal Tertiary Institutions in Kaduna State, Nigeria

Variable	N	df	X^2cal	X^2 Critical	P-value	Decision
Accessibility of Teams	192	3	258.40	7.815	<0.001	Rejected

x^2 computed = 258.40, ***p-value = < 0.001***

The Chi-square analysis in Table 9 revealed a statistically significant difference across responses ($\chi^2 = 258.40$, df = 3, $p < 0.001$; χ^2 critical = 7.815). The null hypothesis was therefore rejected, indicating that there is a significant difference in lecturers' accessibility of Microsoft Teams, which is uneven and feature-specific. While some lecturers have personal access through internet connectivity, compatible devices and data affordability, institutional support such as official Teams accounts, technical assistance and stable power supply remains limited.

Discussion of Findings

Awareness of Microsoft Teams for Instruction: The analysis of Hypothesis One using Chi-square revealed a statistically significant difference in lecturers' awareness of Microsoft Teams ($\chi^2 = 411.63$, df = 3, $p < 0.001$). Consequently, the null hypothesis was rejected. This result indicates that awareness levels are not evenly distributed across response categories, reflecting significant variation in how Computer Science lecturers perceive and recognise different functionalities of the platform. Although the distribution of responses shows variation across indicators, the overall pattern showed a generally high level of awareness of Microsoft Teams for instructional purposes among respondents. This implies that most lecturers are familiar with the platform, but their depth of understanding differs across specific features such as virtual classrooms, communication tools, file sharing, and assessment functions.

This finding is consistent with the work of Trust, Carpenter, and Krutka (2022), who reported that lecturers' awareness of digital learning platforms is often enhanced through professional learning networks and continuous academic engagement. Similarly, Alshammari et al. (2021) found that institutional mandates and structured training programmes significantly improve lecturers' awareness and familiarity with educational technologies. The level of awareness in this study is attributed to increased institutional exposure, peer learning, and the accelerated shift to digital and blended learning environments following the COVID-19 disruption.

Contrary to Bervell and Umar (2021) and Mtebe and Raisamo (2022), who revealed that awareness levels tend to remain low in institutions with limited digital infrastructure and weak technological support systems. Generally, the present result shows an emerging improvement in digital awareness among Computer Science lecturers in Federal tertiary institutions in Kaduna State, likely influenced by global adoption trends and increased exposure to Microsoft-based educational technologies.

Accessibility of Microsoft Teams for Instruction: The analysis of Hypothesis Two using the Chi-square test revealed a statistically significant difference in the accessibility of Microsoft Teams among Computer Science lecturers ($\chi^2 = 231.0$, df = 3, $p < 0.001$). Consequently, the null hypothesis was rejected. This indicates that accessibility is not uniform across respondents but varies significantly based on both institutional and personal access conditions. The result showed a moderate but uneven level of accessibility. While some lecturers reported personal access to Microsoft Teams through internet connectivity, personal devices, and individual arrangements, institutional support systems appeared limited. Key institutional factors such as official accounts, ICT facilities, technical support services, and stable electricity supply were reported as inadequate or inconsistent.

This finding aligns with Yakubu and Adamu (2023), who reported that infrastructural shortages significantly hinder access to digital learning platforms in higher education institutions. Similarly, Afolayan, Olasile, and Adebayo (2022) found that limited institutional infrastructure and weak technological support systems restrict effective access to educational technologies among lecturers.

Conversely, Said and Al-Bagoury (2021), as well as Kohnke and Moorhouse (2022), reported higher levels of accessibility in well-resourced institutions where strong ICT policies and adequate infrastructure support seamless access to digital platforms. These contrasting findings emphasise that accessibility is largely dependent on institutional infrastructure, funding, and policy implementation. Largely, the present study indicated that although individual lecturers access Microsoft Teams independently, sustainable and equitable accessibility remains constrained by institutional limitations in Federal tertiary institutions in Kaduna State, Nigeria.

Conclusion

1. Computer Science lecturers have a high level of awareness of Microsoft Teams for instructional activities, with mean awareness scores significantly above the benchmark, indicating that lecturers are generally well-informed and have a clear understanding of the instructional relevance of Microsoft Teams.
2. Computer Science lecturers' accessibility to Microsoft Teams is moderate and not statistically significant, suggesting that access to the platform is uneven across institutions and may be constrained by ICT infrastructural and insufficient institutional support restrict optimal access.

Recommendations

Based on the findings from the analysed data and tests of research hypotheses, the following recommendations are put forward by the researcher;

1. Federal tertiary institutions in Kaduna State should implement regular professional development programmes, seminars, and academic workshops, sensitisation and awareness programs to further deepen lecturers' understanding of Microsoft Teams and highlight emerging instructional features and best practices, including advanced features, to promote innovative and effective teaching practices.
2. Federal and State Governments, through both Ministries of Education, should invest in improving ICT infrastructure in Federal tertiary institutions, particularly in the provision of reliable internet connectivity, stable power supply and adequate digital devices (24-hour Wi-Fi, Palmtop or laptops) and ensure adequate institutional support to enable rightful, consistent institutional subscription accounts for every lecturer to enhance accessibility to Microsoft Teams.

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