



Assessment of Awareness, Access and Utilization of Digital Information Resources amongst Academic Staff in Physical and Health Education in Colleges of Education in North Western Nigeria

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ABSTRACT

The study assessed the Awareness, Access and Utilization of Digital Information Resources Amongst Academic Staff in Physical and Health Education in Colleges of Education, North Western Nigeria. The study was guided by three specific objectives and their corresponding research questions and null hypotheses. The design of the study was survey. The population of the study consisted of 167 Physical and Health Education academic staff in 13 public colleges of education in north western Nigeria. The sample size stood at 167 determined through census purposive sampling. The study used proportionate and simple random sampling techniques to determine and select respondents for the study. The study adapted a structured questionnaire developed by Salihu (2023) as data collection instrument. The instrument was vetted by experts and has reliability coefficient index of 0.875. Descriptive (means and standard deviations) and inferential (one sample t-test) statistics were used in data analysis. The study found that the academic staff are aware of Digital Information Resources (DIR), have unfettered access to Digital Information Resources and adequately utilize Digital Information Resources (DIR) for implementing Physical and Health Education curriculum in Colleges of Education, North Western Nigeria. The study among others recommended the need for the management of colleges of education, Nigeria to sustain academic staff's awareness of Digital Information Resources (DIRs) through periodic orientation using channels like in-house seminars, conferences, workshops and symposiums. This is expected to keep them abreast with new trends in the field of information and communication technology especially the DIRs.

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INTRODUCTION

Information and Communication Technology (ICT) has come to remain an indispensable complement and supplement to almost all sorts of human activities, be it social, economic, political and cultural. This is because it has revolutionized daily human activities in its entirety. One such innovation brought about by the ICTs in the field of education is the emergence of Electronic Information Resources (EIRs). In light

of the foregoing, Ukachi (2014) stated that dissemination of timely and up-to-date information is made easier with the advent of these technologies, which aid the transmission of electronic information resources.

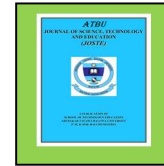
Digital Information Resources (EIRs), otherwise called Electronic Resources (ERs), E-Resources, Digital Resources (DRs), Online Information Resources (OIRs) among other names is seen as information stored in electronic

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format in computer or computer-related facilities like CD-ROMs, flash drives, virtual libraries or the Internet. According to Salihu, Muhammed and Abubakar (2017) e-resources are information sources that are stored electronically and made accessible through electronic systems and computer networks; and consist of databases, books, journals, newspapers, magazines, archives, theses, conference papers, government papers, research reports, scripts and monographs in an electronic format (Salihu, Isa and Abubakar, 2016).

Other types include e-images, e-audio, CD-ROMS, www, Help and tutorials and Digital repositories, Blogs, and YouTube, among others. Ukachi (2014) asserts that electronic information resources, in reality, have become the backbones of many academic institutions (Colleges of Education inclusive). They serve as a motivating factor to academic staff as they provide them with the opportunity to transmit, acquire or download process and disseminate information on any subject of interest. E-resources can be accessed via networks or authentication methods by the user (academic staff) at any time by comfortably sitting at home or office. They (e-resources) indeed play significant roles in academic libraries as they are mostly used for the promotion of academic excellence and research. Electronic Information Resources enables academic staff to search for multiple information at the same time, which is practically difficult when using printed versions.

In this regard, Golwal, Sonwane and Vaishnav (2008), assert that electronic resources have become the most popular tools for research and academic activities. In the same vein, Okello-Obura and Magara (2008) state that the cardinal objective of using electronic information resources is to complement and supplement access to diverse international relevant literatures via the internet, as well as the timely broadcasting of both local and international research output. Academic staff in colleges of education need information, mainly for updating their existing knowledge on given topics (Physical and Health Education inclusive); be it social, economic, political, cultural, technological etc. both within and outside the

shores of the country in which they reside. Information is also essential for solving contemporary complex problems and for brainstorming new ideas derived through new researches and innovations. In addition, e-resources like e-image, e-audio, Blogs, YouTube among others concretize abstract concepts when effectively integrated during instructional delivery process as they appeal to the multiple senses of the students (especially sight and sound).

Awareness means the knowledge of digital technology, communication tools, and networks to access, manage, integrate, evaluate and create information by the teachers. According to Ani and Ahiauzu (2008), awareness is knowledge about something, issues or phenomena that exists or understanding of a situation or subject matter at the present time based on available information at one's disposal, knowledge or experience. In the same vein, Akpojotor (2016) states that awareness can be seen as knowledge or perception of a situation, fact, consciousness, recognition, realization, grasp and acknowledgement, concern about and well-informed interest or familiarity in a particular situation or development. The EIRs awareness in the present study is assessed on the following components such as knowledge about computers, internet, e-images, e-audio, CD-ROMs, www, help and tutorials, e-journals, e-books, e-digital repository, Blogs, YouTube among others, that enable the Colleges of Education lecturers to employ them for wide range of teaching-learning process. Prangya and Rabindra (2013) opined that awareness is core to the integration of electronic information resources. Awareness of EIRs by lecturers is the pre-requisite for their integration to teaching and learning to facilitate curriculum implementation.

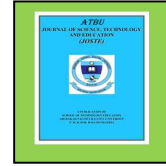
Various information retrieval tools have been installed at the College and Departmental libraries to facilitate access to e-resources by Academic Staff. However, it is not known whether they are aware of these resources. Lamenting on the low level of e-resources awareness, Popoola (2008), Ifijeh (2011), Namugera (2014) and Aina (2014) emphasized that lack of awareness of e-resources form part of the teething problems

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hindering their effective integration in teaching, learning and research. Although there is abundant literature on the awareness level yet, there is a dearth of extensive studies that is specific to lecturers in Colleges of Education. It is against this backdrop that this study assesses academic staff awareness, access and utilization of digital information resources among academic staff in Physical and Health Education in Colleges of Education, in North-western Nigeria.

STATEMENT OF THE PROBLEM

Nigeria governments both at the Federal and State levels are making huge investments in acquiring emerging ICT-based technologies like electronic information resources in a bid to enhance the quality of teaching, learning and research processes in Colleges of Education and also meet up with the global trend and standard in the curriculum delivery process. This is aimed at promoting and enhancing the quality Teacher Education Programme in the country. Electronic information resources are fast becoming indispensable tools in the hands of the academic community in Colleges of Education for accessing up-to-date information at the right time and in the right form for the advancement of teaching, learning and research processes. They (EIRs) enable Academic Staff to have access to first-hand information characterized by being timely, current, ease of access and, also open up the possibility of searching multiple files at a time, a feat accomplished more easily than when using printed ones.

It is expected that awareness of EIRs that is supported by an adequate electronic information environment to enable easy and timely access coupled with positive attitudes of lecturers will metamorphose into effective utilization of these technologies in the implementation of Physical and Health Education curriculum in Colleges of Education in North-western, Nigeria. Various information retrieval tools have been installed at the College and Departmental libraries to facilitate access to e-resources by Academic Staff. However, it is not known whether they are aware of these resources or the extent to which they access and utilize the available ones during

the curriculum delivery process. Therefore, the problem of this study hinges on the determination to investigate academic staff awareness, access and utilization of digital information resources in Physical and Health Education, Colleges of Education, North western-Nigeria.

Objectives of the Study

The main objective of this study is to assess academic staff awareness, access and utilization of digital information resources in Physical and Health Education, Colleges of Education, North Western Nigeria. In light of the main objective stated, the following specific objectives are formulated for the study. These are to:

1. determine academic staff awareness of digital information resources in Physical and Health Education in Colleges of Education, North western, Nigeria;
2. find out the academic staff access to digital information resources in Physical and Health Education in Colleges of Education, North western, Nigeria.
3. examine the academic staff utilization of digital information resources in Colleges of Education, North western, Nigeria;

Research Questions

The study answered the following research questions:

1. What is the academic staff mean awareness of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria?
2. What is the academic staff mean access to digital information resources in Physical and Health Education in Colleges of Education, North western Nigeria?
3. What is the academic staff mean utilization of digital information resources in Colleges of Education, North western Nigeria?

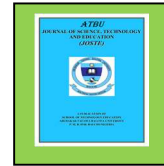
Null Hypotheses

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In the light of the foregoing, the following null hypotheses were postulated and tested at 0.05 alpha level of significance:

1. There is no significant difference in the mean academic staff awareness of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria;
2. There is no significant difference in the mean academic staff mean access to digital information resources in Physical and Health Education in Colleges of Education, North western Nigeria;
3. There is no significant difference in the mean academic staff mean utilization of digital information resources in Colleges of Education, North western Nigeria.

LITERATURE REVIEW

Theoretical framework

The study adopted the Unified Theory of Acceptance and Use of Information Technology (UTAUT) is a technology acceptance and integration model that was created to overcome the flaws and shortcomings of prior theories and models that attempted to explain user acceptance of information technology. The UTAUT integrates salient elements from eight theories and models: the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), the Motivational Model (MM), a model combining the TAM and the TPB

(C-TAM-TPB), the model of PC Utilization (MPCU), the Innovation Diffusion Theory (IDT), and the Social Cognitive Theory (SCT) (Venkatesh, Morris, Davis, and Davis, 2003; Wu, Tao and Yang, 2007; Ghobakli, Zulkifli, 2010; Ani, 2013). A unified model was created based on the conceptual and empirical similarities across these eight theories or models above.

Venkatesh et al. (2003) did a thorough investigation and review, examining eight key theories/models described above, empirically comparing them, and then formulating a new model or "unified model" (The UTAUT). Four main components (performance expectancy, effort expectancy, social influence, and facilitating factors) are said to be direct predictors of usage intention and behaviour, according to the theory (Venkatesh et al., 2003; Alshehri, 2012; Ani, 2013). Ghobakloo, Zulkifli, and Aziz (2010) claim that gender, age, experience, and voluntariness of use influence the four major components on usage intention and behaviour (Salihu, 2023).

The UTAUT model outperformed the eight distinct theories and models when it was empirically tested and validated (Ghobakloo, Zulkifli & Aziz, 2010; Venkatesh et al., 2003). According to Wu, Tao, and Yang (2007, p2), the UTAUT model's "explanation or prediction strength for technological adoption behavior is up to 70%, which is more effective than any of the known models from the past."

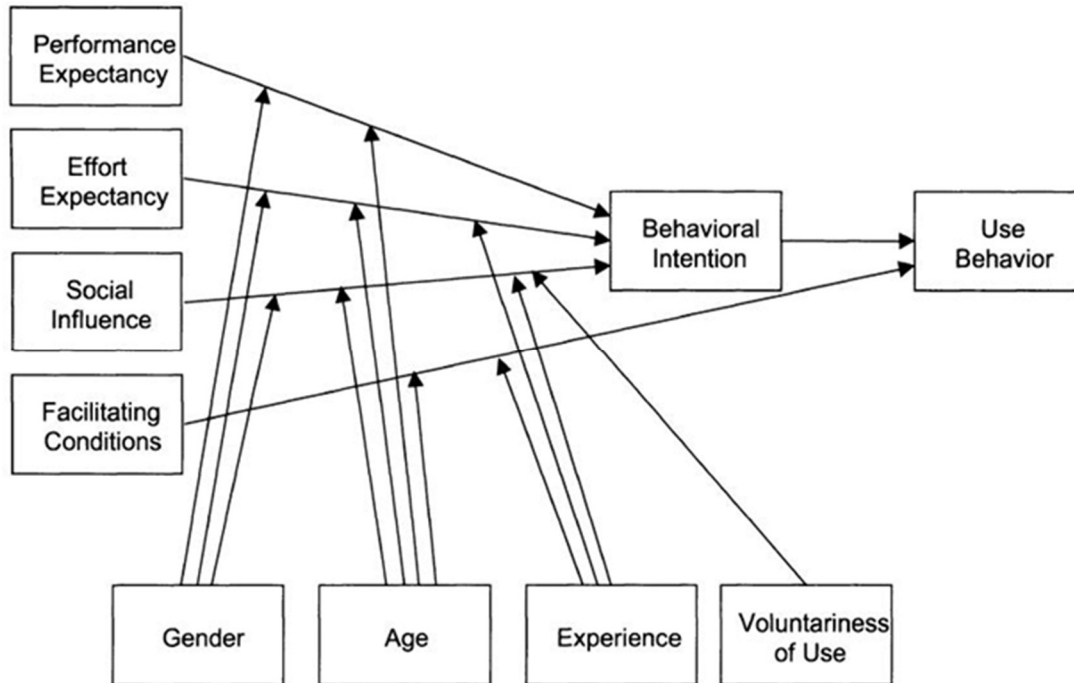


Figure 1: UTAUT model, Venkatesh et al. (2003) in Salihu (2023)

The predictors are defined as follows Venkatesh et al (2003) in Salihu (2023):

1. **Performance expectancy (PE)** is defined as "the degree to which an individual believes that using the system will assist him or her in improving job performance." It refers to the extent to which a Physical and Health Education academic staff member believes that accessing and integrating electronic information resources (DIRs) can assist him/her in improving their research performance and facilitating successful transactions and communication during the teaching and learning process.
2. **Effort expectancy (EE):** "It is the degree of ease with which the system can be used." In this study, "effort expectation" refers to the ease with which electronic information resources can be accessed and utilized. That is, whether DIR subscriptions are open or closed in terms of access. It also refers to the simplicity with which DIRs can be utilized into the Physical and Health Education curriculum delivery process.
3. **Social influence (SI):** "It is the degree to which an individual believes it is important that others believe he or she should utilize the new system," (Salihu, 2023). SI refers to the extent to which academic staff in Physical and Health Education believe their social/professional colleagues believe they should access and incorporate electronic information resources into the teaching of the Physical and Health Education curriculum.
4. **Facilitating conditions (FC):** "is the degree to which a person believes that an organizational and technological infrastructure exists to assist the use of the system (Salihu, 2023)." FC refers to the extent to which an academic staff member in Physical and Health Education believes that institutional ICT

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infrastructure is available to assist access and integration of electronic information resources. In other words, how confident an academic staff member is that his or her college of education has an enabling electronic information environment that will allow him or her to easily access and integrate electronic resources into the curriculum delivery process.

METHODOLOGY

The design of the study is survey research method. According to Muhammed and Salihu (2015) survey research is interested in some characteristics of the population or universe and uses a carefully selected sample from the population for intensive study of the characteristics of the population. Specifically, a cross-sectional type of survey was used. Cross-sectional survey, according to Salihu, Muhammed and Bayero (2016:467) "is where a set of information is collected for a sample at one point in time". On the basis of the information obtained from the subjects at that point in time, decisions are then taken."

The design is adopted for this study primarily because it is a suitable and efficient way of studying large populations.

The population of this study comprises of all academic staff in Physical and Health Education 13 Colleges of Education in the North-west geopolitical Zone of Nigeria totaling one hundred and sixty-seven (167) based on the official statistics obtained from colleges' Registry 2023. The sample size for this study was 167 Physical and Health Education lecturers from the study area who were chosen through census purposive sampling. Census purposive sampling was adopted due to the manageability of the study population. According to Alfa (2016) and Salihu (2023) total population could be used when the population is within manageable limit.

The data collection instrument for the study was a structured questionnaire titled

"Academic Staff Awareness, Access and Utilization of Digital Information Resources Questionnaire" (AAUDIRs-Q) adapted from Salihu (2023). According to Muhammed (2017), a questionnaire is a method of gathering information from respondents about attitudes, knowledge, beliefs and feelings. Questionnaire as data collection instrument is used in this study because, according to Muhammed (2017) data on a broad range of topics may be collected within a limited period and that respondents feel that they remain anonymous and can express their opinions in their own words without fear of identification.

The questionnaire was subjected to trial testing using 18 Physical and Health Education lecturers from the Federal College of Education, Kontagora. The decision to use 18 academic staff was based on the assertion of Connelly (2008) and Treece and Treece (1982) who suggested 10% of the sample size projected for the larger parent study as adequate for pilot testing. The reliability coefficient index of the instrument was ascertained using Cronbach alpha method and consequently 0.875 was realized. The study adopted the 0.64 as the minimum threshold for accepting the reliability strength of the instrument as set by Danjuma and Muhammad (2011). The research questions were analyzed using means and standard deviations to obtain overall average scores while one sample t-test was used to test the null hypotheses related at 0.05 alpha level of significance.

RESULTS

The research questions were analysed with the help of Arithmetic Means and Standard Deviations. The decision mean was pegged at 2.5 as five-point Likert scale was used.

Research Question One: What is the academic staff mean awareness of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria?

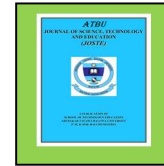


Table 1: Mean and standard deviations of Academic Staff Mean Awareness of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria

S/N	ITEMS	VA	A	U	VU	Mean	SDev	Remark
1	E-journals	57	46	23	11	3.79	0.99	Agreed
2	E-books	46	57	11	23	3.79	0.99	Agreed
3	E-database	80	10	10	37	3.72	1.07	Agreed
4	E-thesis/Dissertation	10	80	37	10	3.87	0.97	Agreed
5	World Wide Web	70	20	20	27	3.77	1.22	Agreed
6	E-research reports	60	30	27	20	3.65	1.03	Agreed
7	E-audio	20	70	27	20	3.72	1.07	Agreed
8	E-magazine	30	60	20	27	3.65	0.96	Agreed
9	E-digital repository	50	40	30	17	3.72	1.11	Agreed
10	E-image	40	50	17	30	3.79	1.10	Agreed
11	E-scripts	77	13	25	22	3.35	1.03	Agreed
12	E-help and tutorial	13	77	22	25	3.35	1.03	Agreed
13	E- archives	60	30	27	20	3.65	1.03	Agreed
14	E-conference papers	10	80	37	10	3.97	0.97	Agreed
15	E- government papers	70	20	20	27	3.77	1.22	Agreed
16	E-monographs	60	30	27	20	3.65	1.03	Agreed
17	Blogs	20	70	27	20	3.52	1.07	Agreed
18	YouTube	30	60	20	27	3.65	0.96	Agreed
19	E-newspapers	50	40	30	17	3.72	1.11	Agreed
20	CD-ROMs	40	50	17	30	3.99	1.10	Agreed
21	WIKIS – Editable Websites	23	11	57	46	2.29	1.49	Disagreed
22	RSS FEEDS	11	23	46	57	2.26	1.01	Disagreed
23	Shared Bookmarking	10	10	80	37	2.02	0.87	Disagreed
Aggregate Mean						3.51		

Result of descriptive statistics in Table 1 shows the academic staff mean awareness of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria. The established decision mean is pegged at 2.5. The aggregate mean of all the items stood at 3.51 which signifies acceptance by the respondents. This shows that majority of academic staff have the same level of awareness of Digital Information Resources in Physical and Health Education curriculum delivery in Colleges of Education, North Western Nigeria. The

implication of this finding is that academic staff are awareness of Digital Information Resources used in the implementation of Physical and Health Education curriculum in Colleges of Education, North Western Nigeria.

Research Question Two: What is the academic staff mean access to digital information resources in Physical and Health Education in Colleges of Education, North western Nigeria?

Table 2: Mean and standard deviations of Academic Staff Mean Access to Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria

S/N	ITEMS	HA	PA	I	HI	Mean	SDev	Remark
1	E-journals	57	46	23	11	3.80	0.99	Agreed
2	E-books	46	57	11	23	3.80	0.99	Agreed
3	E-database	80	10	10	37	3.72	1.07	Agreed
4	E-thesis/Dissertation	10	80	37	10	3.87	0.97	Agreed

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S/N	ITEMS	HA	PA	I	HI	Mean	SDev	Remark
5	World Wide Web	70	20	20	27	3.77	1.22	Agreed
6	E-research reports	60	30	27	20	3.65	1.03	Agreed
7	E-audio	20	70	27	20	3.72	1.07	Agreed
8	E-magazine	30	60	20	27	3.65	0.96	Agreed
9	E-digital repository	50	40	30	17	3.72	1.11	Agreed
10	E-image	40	50	17	30	3.79	1.10	Agreed
11	E-scripts	77	13	25	22	3.35	1.03	Agreed
12	E-help and tutorial	13	77	22	25	3.35	1.03	Agreed
13	E- archives	60	30	27	20	3.67	1.03	Agreed
14	E-conference papers	10	80	37	10	3.97	0.97	Agreed
15	E- government papers	70	20	20	27	3.77	1.22	Agreed
16	E-monographs	60	30	27	20	3.65	1.03	Agreed
17	Blogs	20	70	27	20	3.52	1.07	Agreed
18	YouTube	30	60	20	27	3.65	0.96	Agreed
19	E-newspapers	50	40	30	17	3.75	1.11	Agreed
20	CD-ROMs	40	50	17	30	3.99	1.10	Agreed
21	WIKIS – Editable Websites	10	10	80	37	2.02	0.87	Disagreed
22	RSS FEEDS	10	10	80	37	2.02	0.87	Disagreed
23	Shared Bookmarking	10	10	80	37	2.02	0.87	Disagreed
Aggregate Mean						3.49		

Result of descriptive statistics in Table 2 shows the academic staff mean access to Digital Information Resources in Physical and Health Education curriculum implementation in Colleges of Education, North Western Nigeria. The established decision mean is pegged at 2.5. The aggregate mean of all the items stood at 3.49 which signifies acceptance by the respondents. This implied that majority of academic staff have the same level of access to Digital Information Resources in Physical and Health Education curriculum delivery process in Colleges of

Education, North Western Nigeria. The implication of this finding is that academic staff have access to Digital Information Resources for the implementation of Physical and Health Education curriculum in Colleges of Education, North Western Nigeria.

Research Question Three: What is the academic staff mean utilization of digital information resources in Colleges of Education, North western Nigeria?

Table 3: Mean and Standard Deviations of Academic Staff Mean Utilization of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria

S/N	ITEMS	FU	PU	U	HU	Mean	SDev	Remark
1	E-journals	30	60	20	27	3.65	0.96	Agreed
2	E-books	50	40	30	17	3.72	1.11	Agreed
3	E-database	40	50	17	30	3.79	1.10	Agreed
4	E-thesis/Dissertation	10	80	37	10	3.87	0.97	Agreed
5	World Wide Web	70	20	20	27	3.77	1.22	Agreed
6	E-research reports	60	30	27	20	3.65	1.03	Agreed
7	E-audio	20	70	27	20	3.72	1.07	Agreed
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S/N	ITEMS	FU	PU	U	HU	Mean	SDev	Remark
11	E-scripts	77	13	25	22	3.35	1.03	Agreed
12	E-help and tutorial	13	77	22	25	3.35	1.03	Agreed
13	E- archives	60	30	27	20	3.67	1.03	Agreed
14	E-conference papers	10	80	37	10	3.97	0.97	Agreed
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20	CD-ROMs	40	50	17	30	3.99	1.10	Agreed
21	WIKIS – Editable Websites	23	11	57	46	2.29	1.49	Disagreed
22	RSS FEEDS	11	23	46	57	2.26	1.01	Disagreed
23	Shared Bookmarking	23	11	57	46	2.29	1.49	Disagreed
Aggregate Mean						3.51		

Result of descriptive statistics in Table 2 shows the academic staff mean utilization of Digital Information Resources in Physical and Health Education curriculum implementation in Colleges of Education, North Western Nigeria. The established decision mean is pegged at 2.5. The aggregate mean of all the items stood at 3.51 which signifies acceptance by the respondents. This implied that majority of academic staff are utilizing Digital Information Resources in Physical and Health Education for effective curriculum delivery process in Colleges of Education, North Western Nigeria. The implication of this finding is that academic staff are utilizing Digital Information Resources for the implementation of Physical and Health Education curriculum in Colleges of Education, North Western Nigeria.

Test of Null Hypotheses

The hypotheses formulated to establish significance difference regarding academic staff

Awareness, Access and Utilization of Digital Information Resources Amongst Academic Staff in Physical and Health Education in Colleges of Education, North Western Nigeria. They consisted of three null hypotheses and were tested at the fixed probability level of 0.05. The hypotheses were tested using One-sample t-test respectively. Therefore, if the p-value observed for the test is greater than 0.05 alpha level of significance ($p > 0.05$), then the null hypothesis should be retained. Similarly, when the p-value observed for the test is less than 0.05 alpha level of significance ($p < 0.05$), it implied that the null hypothesis stand rejected.

Hypothesis One: There is no significant difference in the mean academic staff awareness of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria;

Table 4: Summary of One Sample t-test Statistics on the Mean Academic Staff Awareness of Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria

Variable	N	Mean	SDev	Df	T	P	Decision
DIR Awareness	137	25.277	1.485	136	1.717	1.087	H ₀₁ Retained

$p = 1.087 > 0.05$, t computed = $1.717 < 1.96$ at Df 136

Results of the one sample t-test statistics in Table 4 revealed no significant difference in the mean academic staff awareness of Digital Information Resources in Physical and

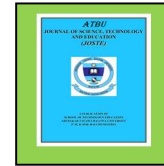
Health Education in Colleges of Education, North Western Nigeria. This is due to the fact that the calculated p value of 1.087 was found to be greater than the 0.05 alpha level of significance and the computed t value of 1.717 was found to

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be lower than the 1.96 at Df 136. This shows that the academic staff have the same level of awareness concerning Digital Information Resources (DIR) for effective curriculum implementation in Physical and Health Education in Colleges of Education, North Western Nigeria. Therefore, the null hypothesis which stated that there was no significant difference in the mean academic staff awareness of Digital Information Resources in Physical and Health Education in

Colleges of Education, North Western Nigeria, is hereby retained.

Hypothesis Two: There is no significant difference in the mean academic staff mean access to digital information resources in Physical and Health Education in Colleges of Education, North western Nigeria;

Table 5: Summary of One sample t-test Statistics on the Mean Academic Staff Access to Digital Information Resources in Physical and Health Education in Colleges of Education, North Western Nigeria

Variable	N	Mean	SDev	Df	T	P	Decision
DIR Access	137	20.211	1.485	136	1.917	0.090	H ₀ Retained

$P = 0.090 > 0.05$, $t_{\text{computed}} = 1.917 < 1.96$ at Df 136

Results of the one sample t-test statistics in Table 5 indicated no significant difference in the mean academic staff mean access to digital information resources in Physical and Health Education in Colleges of Education, North western Nigeria. It was due to the fact that the calculated p value of 0.090 was found to be greater than the 0.05 alpha level of significance and the computed t value of 1.917 was less than the 1.96 at Df 136. This indicated that the academic staff have unfettered access to Digital Information Resources (DIR) for effective curriculum implementation in Physical and Health

Education in Colleges of Education, North Western Nigeria. Consequently, the null hypothesis which stated that there is no significant difference in the mean academic staff mean access to digital information resources in Physical and Health Education in Colleges of Education, North western Nigeria is hereby retained.

Hypothesis Three: There is no significant difference in the mean academic staff mean utilization of digital information resources in Colleges of Education, North western Nigeria;

Table 6: Summary of One Sample t-test Statistics on the Mean Academic Staff Mean Utilization of Digital Information Resources in Colleges of Education, North Western Nigeria

Variable	N	Mean	SDev	Df	t	P	Decision
DIR Utilization	137	24.19	1.314	136	1.567	1.003	H ₀ Retained

$p = 1.003 > 0.05$, $t_{\text{computed}} = 1.567 < 1.96$ at Df 136

Results of the one sample t test statistics in table 6 revealed that there is no significant difference in the mean academic staff mean utilization of digital information resources in Colleges of Education, North western Nigeria. This was due to the fact that the calculated p value of 1.003 was found to be greater than the 0.05 alpha level of significance and the computed t value of 1.657 was lower than the 1.96 at Df 136. It showed that academic staff adequately utilize digital information resources for curriculum

implementation in Colleges of Education, North western Nigeria. Therefore, the null hypothesis which stated that there was no significant difference in the mean academic staff mean utilization of digital information resources in Colleges of Education, North western Nigeria is hereby retained.

FINDINGS

In the light of the foregoing, the study found that:

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1. The academic staff are aware of Digital Information Resources (DIR) for effective curriculum implementation in Physical and Health Education in Colleges of Education, North Western Nigeria;
2. The academic staff have unfettered access to Digital Information Resources (DIR) for effective curriculum implementation in Physical and Health Education in Colleges of Education, North Western Nigeria;
3. The academic staff adequately utilize Digital Information Resources (DIR) for implementing Physical and Health Education curriculum in Colleges of Education, North Western Nigeria.

DISCUSSIONS

The study indicated that academic staff are aware of Digital Information Resources (DIR) for effective curriculum implementation in Physical and Health Education in Colleges of Education, North Western Nigeria. This finding is in consonance with that of Aina (2014); Okite-Amughoro, Makgahlela and Bopape (2014); Salihu, Isa and Abubakar (2016); Yebowaah and Plockey (2017); Nwabugwu, Nwobodo and Okoro (2019); Rahaman, Al-Baridi, Altaf and Ansari (2021); Dubale, Schellnack-Kelly and Nwagwu (2021); Ogunsanya and Buraimo (2021); Opayemi and Onyancha (2021); Salihu (2023) who indicated adequate awareness level regarding e-resources among academic staff. On the contrary, Martinez Pineda, De Arcaya and Jimenez-Sosa (2006); Ezeama (2009); Gbaje (2010); Okiki (2012); Nazir (2015); Chima-James, Opara and Ogaraku (2018) indicated low level of awareness about e-resources by the academic staff.

It was also established that the academic staff have unfettered access to Digital Information Resources (DIR) for effective curriculum implementation in Physical and Health Education in Colleges of Education, North Western Nigeria. The finding corroborates those of Ibrahim (2014); Manhas, Asha, Kaur and Rani (2015); Mwantimwa (2017); Ngeme (2017); Sejane (2017); Bamigboye, Odunlade, Agboola and Emmanuel (2018); Salihu (2023) which

indicated that most of teaching staff have full access to electronic resources for their teaching and research. On the other hand, Ani (2012); Okite-Amughoro, Makgahlela and Bopape (2014); Boakye (2015); Ukpog (2016); Owolabi, Idowu, Okocha and Ogundare (2016); Adeleke and Nwalo (2017) indicated low access to e-resources by the academic staff.

Moreover, it was also found that the academic staff adequately utilize Digital Information Resources (DIR) for curriculum implementation in Physical and Health Education in Colleges of Education, North Western Nigeria. The current lend credence to those of Zhang (2010); Owolabi, Ajiboye, Lawal and Okpeh (2012); Owolabi, Idowu, Okocha and Ogundare (2016); Olajide and Adedokun (2018); Tekale and Dalve-Patil (2018); Ridwan, Felix and Mohammed (2019); Adamu, Akor and Saka (2020); Akparobore and Omosekejimi (2020); Joel (2020); Ogunsanya and Buraimo (2021); Anaehobi and Emmasiegbu (2021) who found that academic staff adequately utilize and integrate e-resources during lesson preparation, teaching and learning session, knowledge update among other reasons. On the other hand, Garg and Tamrakar (2014); Ndibalema (2014); Manhas, Asha, Kaur and Rani (2015); Ukpog (2016); Oriogu, Chukwuemeka and Oriogu-Ogbuiyi (2018); Nwabugwu, Nwobodo and Okoro (2019); Suleiman and Joshua (2019); Mollé and Mwantimwa (2019); Okunoye (2020); Bamigbola (2021); Salihu (2023) indicated low adoption, utilization and integration of e-resources among academic staff.

The implication of these findings is that academic staff in Physical and Health Education in colleges of education in north western Nigeria are fully aware of digital information resources used for enhancing curriculum implementation. In addition, they (academic staff) have unfettered access to these resources and there is a conducive electronic information environment that supports full utilization by the academic staff.

CONCLUSION AND RECOMMENDATIONS

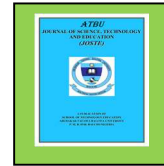
Information and Communication Technology (ICT) is an indispensable complement and supplement to the instructional delivery

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process among academic staff in colleges of education in Nigeria and elsewhere. The study assessed the Awareness, Access and Utilization of Digital Information Resources Amongst Academic Staff in Physical and Health Education in Colleges of Education, North Western Nigeria. From the findings of this study, the study recommended as follows:

1. There is need for the management of colleges of education, Nigeria to sustain academic staff's awareness of Digital Information Resources (DIRs) through periodic orientation using channels like in-house seminars, conferences, workshops and symposiums. This is expected to keep them abreast with new trends in the field of information and communication technology especially the DIRs;
2. There is also a need for the provision of functional and accessible information and communication technology infrastructures in all colleges of education in north-western Nigeria and by extension Physical and Health Education departments by the federal and state governments. Infrastructural facilities in rural colleges of education should be improved upon for an enhanced access by Physical and Health Education lecturers;
3. There is need for practical session to be organized by the college management in collaboration with Physical and Health Education departments for lecturers in colleges of education. The practical session should centre on effective utilization techniques of DIRs in Physical and Health Education curriculum implementation;

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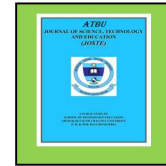
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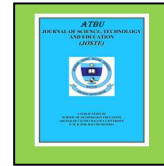
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