



CHALLENGES OF THE APPLICATION OF INFORMATION TECHNOLOGY FACED BY STAFF IN THE TRAINING OF ARCHITECTURAL STUDENTS IN POLYTECHNICS IN NIGERIA.

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ABSTRACT

Training architectural students by applying information technology is very important medium of imparting knowledge, valuable hand-on skills and technical know-how in the 21st century. To a large extent, survival depend completely on how one has mastered and is able to manipulate the world of technology to pave a way for himself/herself in an ever growing competitive struggle for success. Just like other forms of training in Nigeria, applying information technology in instructing architectural students has had its share of the challenges. What are these challenges? This is what this research plans to study. To do this, questionnaires were administered to all the staff that teach Higher National Diploma (HND) students of Architectural Technology Department, Nuhu Bamalli Polytechnic, Zaria. Because of the need for comprehensive study of the problem, the total population of staff (seven lecturers) was used for the research. The data collected was analysed using the mathematical formula $\text{Part/whole} \times 100\%$ to find percent proportion. The analysed data suggested that the staff face challenges in the application of information technology in training HND students in the polytechnic. However, the study discovered that 100% of the staff were found qualified to apply information technology in training students. This paper discovered only few of the challenges. Challenges like safety, security, ethics, practicality, et cetera on the application of information technology in teaching HND architectural students in Nigeria polytechnics in particular and other institutions in general need to be studied.

Keyword: *Application; Challenges; Higher National Diploma; Information Technology; Training.*

INTRODUCTION

No doubt Architecture has a great influence in our lives. Some of the influences Architecture has is captured by Allain de Botton (2008) in his book, *The*

Architecture of Happiness that the colour on the walls can drastically change our moods, the arrangement of chairs in our living rooms can alter our social perspectives, and the interior design of our personal spaces can remind us of the values and interest we embody. Architecture also has a voice. Buildings speak in a big and distinctly clear voice. Some buildings, streets and neighbourhoods speak of disorganization, aggression, confusion and waste while others whisper serenity, gentleness, peace and pride. It can be said that the quality of our environment dictates who we are and who we want to be.

To fully achieve an architectural outcome that dishes out happiness, peace and pride to its users, the operations including training of architectural students need to take advantage of the benefits inherent in Information Technology. In this modern day and age, Information Technology has taken a centre stage in almost all human activities. Architecture has, to a large extent, fully employed Information Technology as a tool for its operations. The efficient, effective and proficiency Information Technology has brought to bear on architecture is a confirmation that it has come to stay.

Hence, the need for proper training of architectural students on Information Technology cannot be over emphasized. In Nigeria, training of architectural students is done by universities and polytechnics.

The Website of National Board for Technical Education, NBTE, a body responsible for the regulation of polytechnic education in Nigeria, reports that there are twenty-eight federal government owned accredited polytechnics, forty-one state government owned and forty-four privately owned. These figures do not include mono technics/specialized institutions and technical colleges. Of these numbers, forty-four polytechnics offer Architectural Technology as a course of study.

Nuhu Bamalli Polytechnic, Zaria is one of the forty-four institutions that offers training in

Architectural Technology at HND level. Nuhu Bamalli Polytechnic was established in 1989 to run National Diploma and Higher National Diploma in different disciplines. The polytechnic started offering Higher National Diploma in Architectural Technology in 2010 as obtained from the institution website.

It is common knowledge that Nigeria educational sector is bedevilled with many problems. The poor performance of students is sometimes blamed on the falling standard of education (Blumende,

2001; Olorundare, 2011 and Adesehinwa, 2013 as cited in Duruji, Azuh and Oviasogie, 2014). The falling standard of education is also blamed on language barrier, poor educational planning, inadequate Information Technology equipment, inadequate power supply, lack of interest on the use of ICT facilities

and lack of manpower to teach Information technology (Akuh, 2011; Mbah and Emesini , 2013).

These problems are visible in many institutions including Nigerian polytechnics.

AIM OF THE RESEARCH

This research is aimed at determining the challenges of the application of Information Technology faced by staff in the training of HND architectural students in Nigerian polytechnics.

OBJECTIVES OF THE RESEARCH

The aim will be achieved through the following objectives;

1. To determine the availability of qualified staff that apply information technology in training HND students in architecture
2. To determine if staff have moved from the traditional system of teaching architecture through hand drafting to using information technology in training HND students in architecture.

RESEARCH QUESTIONS

1. What challenge does the application of Information Technology face with the unavailability of qualified staff in training HND students in architecture?
2. What challenge does the application of Information Technology face with staff having problems changing from the traditional system of teaching architecture (hand drafting) to using information technology?

LITERATURE REVIEW

No doubt, the use of Information Technology (IT) from computing electronics and telecommunication to process and distribute information in digital and other forms has brought enormous benefits to man. These benefits, as enumerated by Acedvedo (2019), include among others, ‘improved workplace efficiency’ and ‘cost reduction and economic efficiencies’. Furthermore, Delzotto (2009) vividly captures the benefits of Information Technology in learning as: ‘increasing the learning potential of students and empowering teachers with engaging presentation tools’. Though, as important as Information Technology is, it has its challenges.

CHALLENGES FACED BY INFORMATION TECHNOLOGY AROUND THE WORLD

In developed countries like the United State of America (USA), France, Germany, et cetera, the challenges evolve around issues like lack of privacy, security problems, copyright infringement, increased computer crimes and so on (Ramey, 2012). However, Ramey was quick to add that the challenges are brought about by the way humans use the IT tools not that the technology is bad. In another study carried out in the USA by David Nagel in 2013, it reports that in the past the challenges confronting Information Technology have centred largely on reluctance on the part of administrators and teachers and lack of support or funding. The report adds that the findings of the year 2013 followed along the same lines and include other issues like; professional challenge, resistance to change challenge and failure to use technology to deliver effective formative assessment challenge.

In Asia the challenges are not different. Najafabadi et al (2013) suggest the following as the challenges facing the application of information technology; language barrier challenge, poor educational planning, inadequate Information Technology equipment among other things

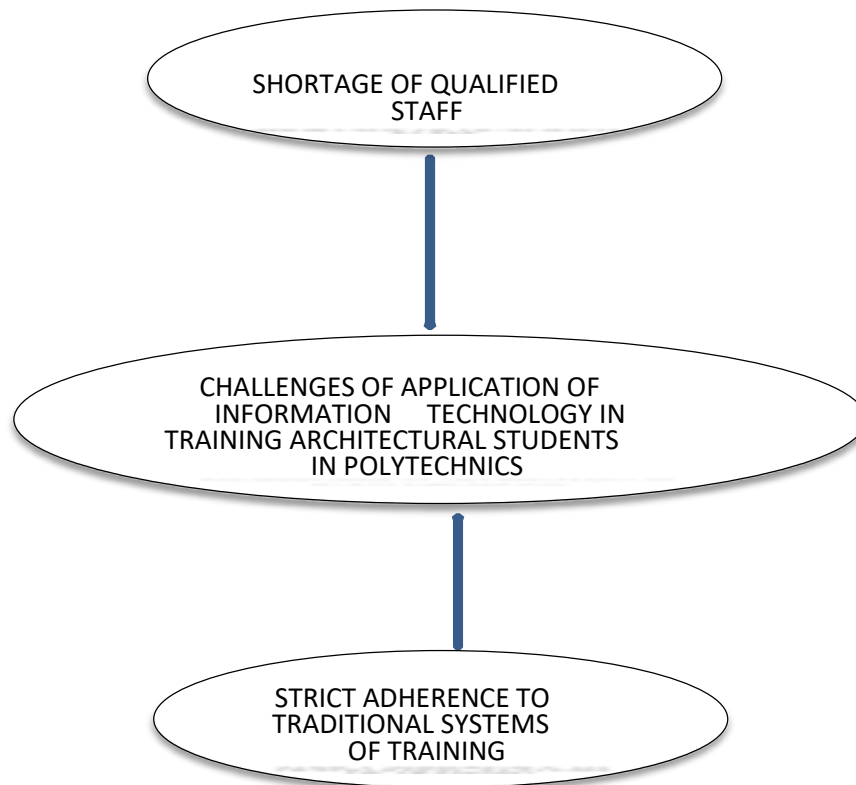
CHALLENGES FACED BY INFORMATION TECHNOLOGY IN NIGERIA

On the other hand, developing countries, including Nigeria, have challenges of application of Information Technology which are same as those faced by developed countries plus some that are specific to the region. A research done by Mbah and Emesini (2013) on the challenges in the application of information and communication technology, ICT, in teaching process in secondary schools in Nigeria identify the following problems; inadequate power supply challenge and lack or inadequate facilities challenge. Others include, lack of interest on the use of ICT facilities challenge and poor accessibility to ICT facilities where available. Akuh (2011) in her findings states similar challenges the application of Information Technology in Nigeria education system faces which comprise; lack of professionals, poor funding, lack of space and instructional resources and lack of power supply. In yet another empirical research work, Kamba (2009) finds that challenges of application of Information technology exist even in the university system in Nigeria. The study stated the challenges as follows; lack of good policy implementation, lack of electricity, insufficient funds to upgrade and maintain equipment and facilities, lukewarm attitudes by students and staff to E-learning processes.

Power cuts are frequent. This variable has potential to affect the application of Information Technology in training students (Kamba, 2009; Akuh, 2011 and Mbah and Emesini, 2013).

From the studies, it can be seen that both developed and developing countries face challenges in the application of Information Technology in schools and other aspects of life. However, the challenges of application of I.T. in developed countries are mainly focused on manipulating the tools for selfish gains while the challenges in developing countries are built around poor power supply, insufficient funding, and unavailability of I.T. equipment and professionals in the education sector as shown in Fig. 1 below.

Fig. 1 Challenges faced by Information Technology as highlighted in Literatures.



Source; Author , 2022 .

METHODOLOGY

This research employed the use of idiographic study principle because facts are connected with specific cases and the restricted number of objects which make

it possible to study them thoroughly thereby achieving a deep understanding of the objects. This detailed understanding of the problem is more important than universal generalization. (Popoola, 2019)

To obtain data for this research, the questionnaire method is employed. This method is chosen because it allows for standardization of responses from the participants (Johnson and Larry , 2014). The whole population of the seven staff that teach HND students in Nuhu Bamalli Polytechnic, Zaria participated in the research by filling the questionnaires.

The data collected was analysed using mathematical formula, Part/whole X 100%, to obtain percent proportion.

RESULTS

Table 1 Demographic Characteristics of the Respondents

Items	Frequency	Percentage (%)
Gender		
Male	6	85.7
Female	1	14.3
Total	7	100
Age Group		
31-50 years	4	57.1
51-60 years	3	42.9
Total	7	100
Highest level of Education		
MSc	7	100.0
Academic Position		
Lecturer II	2	28.6
Senior Lecturer	3	42.9
Chief Lecturer	2	28.6
Total	7	100.0
Number of courses taught by Lecturer		
1-2	5	71.4
3-4	2	28.6
Total	7	100.0

Source: Field work, October 2021

Availability of Qualified staff

Table 2. Availability of Qualified staff

S/N	Items	Frequency	Percentage (%)
1	Shortage of staff who apply I.T		
	Yes	6	85.7
	No	1	14.3
2	Frequency of application of I.T techniques		
	Often	3	42.9
	Sometimes	2	28.6
	Rarely	2	28.6
3	Applying new I.T software		
	Often	1	14.3
	Sometimes	4	57.1
	Rarely	2	28.6

Source: Field work October 2021

Strict Adherence to Traditional System of Training.

Table 3 Strict Adherence to Traditional System of Training.

Items	Frequency	Percentage (%)
Use of traditional methods of training		
Yes	7	100
No	0	0.0
Staff adheres to only traditional methods of training		
21-40%	2	28.6
41-60%	1	14.3
61-80%	4	57.1
Training using I.T methods only		
Somewhat disagree	1	14.3
Sometimes	3	42.9
Strongly agree	3	42.9

Source: Field work October 2021

DISCUSSION

Demographic Characteristics of the Respondents

Table 1 above shows the demographic characteristics of the respondents, six respondents which represent 85.7% of the respondents were male lecturers while only one (14.3) is a female lecturer. Four (57.1%) of the respondent fall between the ages of 31-50 years while 3 (42.9%) fall between the ages of 51-60 years. All the respondents have MSc as the highest level of educational qualification. Also shown on the table is academic position of the respondents two (28.6%) were lecturer II, three (42.9%) were senior lecturer while two (28.6%) were chief lecturer. Five of the lecturers take 1-2 courses while two teach 3-4 courses.

These demographic characteristics of the respondents show that all the lecturers have the right academic qualification and experience to teach HND class in architecture.

Availability of Qualified staff

Table 2 above shows unavailability of qualified staff. Six (85.7%) of the respondents responded yes to item 1 on the table which is, “Do you think the polytechnic has shortage of staff who apply I.T in training HND students in Architecture?”, while one (14.3%) responded No. This implies that there are shortage of staff who apply I.T in the training of HND students in Architecture. Item 2 on the table shows how often lecturers apply I.T techniques in training HND students in Architecture. Three (42.9%) reacted to often, two (28.6%) reacted to sometimes while two (28.6%) responded to rarely. With the responses above it shows that despite the shortage of staff, lecturers who train HND students in Architecture in most cases do apply I.T techniques. In response to item three on the table, one of the respondents often face challenges in applying new I.T software in the training of HND students in Architecture while four (57.1%) and two (28.6%) reacted to sometimes and rarely respectively. This implies that the respondents are familiar with I.T software.

This showed that the polytechnic has staff that apply information technology in training HND students in architecture even amidst the need to employ more staff to make up for the shortage

Strict Adherence to Traditional System of Training Challenge

Table 3 shows strict adherence to traditional system of training challenge. Item 1 states that, “Do you have staff that adheres only to traditional methods of training?” All the respondents responded yes while none responded No. This implies that there are staff who adheres to traditional methods of training. Two (28.6%), one (14.3%) and four (57.1%) responded to 21-40%, 41-60% and 61-80% respectively to item 2 on the table which is, “in your opinion, what

percentage of staff adheres to only traditional methods of training HND students in Architecture?” This means that larger percentage of the staff use only the traditional methods of training HND students. On item 3 on the table which is “Do you think that HND students in Architecture should be trained using I.T methods only?” one (14.3%) of the respondent somewhat disagreed, three (42.9%) responded to sometimes while three (42.9%) strongly agree. This implies that HND in Architecture students should be trained using IT method This showed that staff have not moved from the traditional system of teaching architecture through hand drafting to using information technology in training HND students in architecture.

CONCLUSION

Despite the findings that the polytechnic has qualified staff, the polytechnic finds it difficult to apply information technology in training HND students. This could be as a result of other challenges facing the application of Information Technology in training HND students in architecture. This could also explain why staff despite their experiences and qualifications have not been able to change from traditional method of teaching using hand drafting to using information technology in training HND students in architecture.

RECOMMENDATIONS

Information Technology application has come to stay. Students need to be trained using the state of the art equipment to make them acquire skills they would need to functions effectively in the competitive world of practice after graduation.

Hence, researchers should focus their studies on information technology as a tool for training and practice. This research work has focused on small portion of challenges faced in the training of architectural students. There are many areas that need researchers to focus on. The following areas are recommended for further studies; security concern about the application of information technology in training students, Financial issues militating against the application of information technology in architectural training, et cetera.

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