IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 21, Issue 4, Ver. 05 (Apr. 2016) PP 53-57
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Digitizing Second Language Learning in Nigerian Universities: A Pedagogical Perspective.

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Abstract: - *The availability of ICT devices, faculty-ICT compliance, learning outcomes for reading comprehension and the challenges of e-learning in three Nigerian universities were evaluated. Three hundred (300) students and one hundred and fifty (150) Lecturers were sampled from Nnamdi Azikiwe University, Awka (NAU), Chukwuemeka Odumegwu Ojukwu University, Uli,* (COOU) *and Imo State University, Owerri (IMSU). Constructed questionnaires and reading test compliant with Taylor's Cloze Procedure were administered on the respondents. Simple percentage was used for analysis. Results showed a 100% availability of computers in all the sampled institutions, 90% availability of multi- media projectors in NAU, 20% in COOU and 10% in IMSU. There was 100% faculty-ICT (computer) compliance in all the institutions and 100%, 20%, and 24% faculty-media projector compliance for NAU, COOU and IMSU respectively. The students' reading comprehension levels were significantly higher for Computer-Assisted Language Learning (CALL) than for conventional face-to-face learning. The major challenges of e-learning were basically power outage and equipment malfunction. The implication of the results was discussed and useful recommendations proffered.*

Keywords*: CALL, Digitization, Nigeria, Second Language, Universities.*

I. INTRODUCTION

Knowledge has evolved with attendant advancements in the application of novel technologies in the teaching/learning processes. Modern information and communication technology (ICT) facilities have replaced traditional and antiquated teaching and learning techniques. Computer Assisted Language Learning (CALL) can be defined as 'any process in which a learner uses a computer and as a result, improves his or her language (Beatty, 2003).

The term e-learning is relatively new and synonymous with terms such as technology-enhanced learning, web-based learning and distributed learning. According to Kirschner et al. (2001), e-learning is learning (and thus the creation of learning and learning arrangements) where the internet plays an important role in the delivery, support and ministration and assessment of learning.

Despite this, some traditional learning activities such as writing have always been upheld as technological because without the writing implements, writing is virtually impossible. The writing implements have continued to evolve from the clay tablets and animal skins in the medieval periods to the use of pencils and crayons and finally to the computerization of writing.

It has been variously postulated that ICT-driven teaching/learning trends produce better results than the conventional methods.

Computers can be used to enhance the instructional relationship between teaching and learning. This will eventually lead to the overall technological development.

When primary source materials from various collections are digitized, teachers can use them in large lecture courses, with hundreds of students, therefore digitized materials are perfect for training students en masse and preparing them for scholarly research (Proffitt et al., 2008).

When CALL is incorporated, it can support learning practically in varied ways, it can showcase the students' achievement, empowers group work and encourages independence for the students.

Furthermore, some studies on digitization have shown that incorporating technology in teaching second language learners helped to enhance the learners' all round performance in the classroom. (Blake, 2000: Chen & Cheng, 2006: Egbert, 2002).

Despite these obvious advantages of digitized education, there are inherent challenges. Students are not as tech-savvy as popularly upheld and therefore will need guidance and there is also a danger that materials unavailable digitally will be ignored (Carley, 2012). The setbacks are few and obvious but the benefits of an ICT-driven knowledge delivery are inexhaustible. Grafton (2007) opined that 'for now and for the foreseeable future, any serious reader will have to know how to travel down two very different roads, simultaneously. No one should avoid the broad, smooth and open road that leads through the screen…. The narrow path still leads,

as it must to crowded public rooms where the sunlight gleams on vanished tables and knowledge is embodied in millions of dusty, crumbling, smelly, irreplaceable documents and books.'

II. MATERIALS AND METHODS

Four hundred and fifty (450) volunteers were recruited into the study from Nnamdi Azikiwe University, Awka, Chukwuemeka Odimegwu Ojukwu University, Uli and Imo State University, Owerri. Of this number, three hundred (300) were students while one hundred and fifty (150) were lecturers. In each surveyed institution, fifty (50) students were questioned on the availability of ICT devices, challenges of e-learning and investigated for learning outcomes. For learning outcomes a control group (n=50) were set up alongside the test group (n=50) in each institution. In assessing faculty-ICT compliance, fifty (50) lecturers from each institution were evaluated with questionnaires.

Structured questionnaires were administered on all participants and collated to elicit specific information on availability of ICT devices, faculty-ICT compliance and challenges of e-learning in the sampled institutions.

To ascertain learning outcomes for reading comprehension level, the test groups for the Computer Assisted Language Learning were subjected to a reading test using Wilson Taylor's Cloze Procedure. The Cloze exercise generator at the Goethe-Institute website was used to generate reading exercises. In the reading exercise, all definite and indefinite articles were omitted and the students were expected to read the exercise and fill the missing gaps in ten minutes. While the control groups were exposed to conventional face-to-face learning, with the printed form of the reading materials administered and the exercises expected to be done in ten minutes. The comprehension exercises were marked for participants in each group in the sampled institutions and results appropriately recorded.

III. RESULTS

TABLE 1

Table Showing the Availability of ICT Devices in the Sampled Institutions.

Institutions	No. of Respondents	Computer		Multi-Media Projector	
		Yes (%)	No (%)	Yes (%)	No (%)
NAU	50	50(100)	0(0)	45(90)	5(10)
COOU	50	50(100)	0(0)	10(20)	40(80)
IMSU	50	50(100)	0(0)	5(10)	45(90)

TABLE 1 represents the availability of ICT devices (computers and multi-media projectors) in the sampled institutions. It shows a 100% availability of computers in the institutions surveyed while for multi-media projector, there was a 90%, 20% and 10% availability rate for NAU, COOU and IMSU respectively.

TABLE 2

Table Showing Faculty-ICT Compliance in the Sampled Institutions.

Institutions	No. of Respondents	Computer		Multi-Media Projector	
		Yes(%)	**No(%)**	**Yes(%)**	**No.(%)**
NAU	50	50(100)	0(0)	50(100)	0(0)
COOU	50	50(100)	0(0)	10(20)	40(80)
IMSU	50	50(100)	0(0)	12(24)	38(76)

TABLE 2 shows the faculty-ICT compliance rate in the Institutions. There was a 100% faculty-ICT (Computer) compliance rate for all the surveyed institutions. The faculty-ICT (Multi-media Projector) compliance rate was 100% for NAU, 20% for COOU and 24% for IMSU.

TABLE 3

Table showing Challenges of e-learning in the Sampled Institutions.

Institutions	No. of Respondents	Power Outage (%)	Equipment Malfunction (%)	Others (%)
NAU	50	40 (80)	9 (18)	1 (2)
COOU	50	45 (90)	5 (10)	0 (10)
IMSU	50	48 (96)	2 (4)	0 (0)

TABLE 3 highlights the challenges of e-education in the sampled institutions. For NAU, the major challenge was power outage (80%) followed by equipment malfunction (18%) and finally by other challenges (2%). For COOU, Power outage (90%) was the main challenge, equipment malfunction constituted 10% of the challenge while other challenges had 0%. Similarly, for IMSU power outage (96%) was responsible for the bulk of the challenges followed by equipment malfunction (4%) and others (0%).

TABLE 4

Table showing the Learning Outcomes for the Reading Comprehension Levels of Participants at Nnamdi Azikiwe University, Awka.

Scores (%)	No. of Participants	
	Computer Assisted Learning	**Face-to-face Learning**
0-19	1	3
20-29	3	5
30-39	5	5
40-49	6	10
50-59	5	15
60-69	10	8
70+	20	4
Total	**50**	**50**

TABLE 4 represents the learning outcomes for the reading comprehension levels of participants at Nnamdi Azikiwe University, Awka(NAU). Majority of the participants (n=20) who were subjected to Computer-Assisted Language Learning scored 70% and above, while majority of the participants (n=15) who were exposed to face-to-face learning scored 50-59%.

TABLE 5

Table showing the learning outcomes for the Reading Comprehension Levels of Participants at Chukwuemeka Odumegwu Ojukwu University, Uli.

Scores (%)	No. of Participants	
	Computer-Assisted Learning	**Face-to-face Learning**
0-19	2	3
20-29	2	2
30-39	2	2
40-49	2	21
50-59	2	9
60-69	15	8
70+	25	5
Total	**50**	**50**

TABLE 5 shows the learning outcomes for reading comprehension levels of participants at Chukwuemeka Odumegwu Ojukwu University (COOU), Uli. Under the Computer Assisted Language Learning, majority of the respondents (n=25) scored 70% and above while under the face-to-face learning technique, majority of the participants (n=21) scored 40-49%.

TABLE 6: Table showing the Learning outcomes for the Reading Comprehension levels of Participants at Imo State University, Owerri.

Scores (%)	No. of Participants	
	Computer-Assisted Learning	**Face-to-face Learning**
0-19	1	2
20-29	3	2
30-39	2	30
40-49	2	4
50-59	4	2
60-69	10	4
70+	28	6
Total	**50**	**50**

TABLE 6 shows the learning outcomes for the reading comprehension levels of participants at Imo State University, Owerri (IMSU). Among those exposed to the Computer-Assisted Language Learning, majority (n=28) scored 70% and above while among those subjected to the face-to-face learning technique, majority (n=30) scored 30-39%.

IV. DISCUSSION

The study evaluated 'Digitizing Second Language Learning in Nigerian Universities: A Pedagogical Perspective'. These Nigerian Universities namely: Nnamdi Azikiwe University, Awka, Chukwuemeka Odumegwu Ojukwu University, Uli and Imo State University, Owerri were surveyed with emphasis on availability of ICT devices, faculty-ICT compliance, challenges of e-learning and learning outcomes of reading comprehension.

In appraising the availability of ICT devices, the study showed that each institution had a 100% availability rate for computers while for multi-media projectors NAU had 90%, COOU had 20%, while IMSU had 10%. The higher availability rate of multi-media projectors in NAU could be associated with university funding. NAU being a federal University is expectedly better funded than the other two universities, which are state owned institutions. The 100% availability rate of computers in all the institutions could be traced to affordability.The cost of procuring computers is relatively cheap.

One hundred and fifty (150) lecturers, fifty (50) from each institution were evaluated for faculty-ICT compliance. The result showed a 100% compliance rate in each institution, while for multi-media projector compliance, NAU (100%) had the highest compliance rate while COOU and IMSU had 20% and 24% compliance rates respectively. The high multi-media projector compliance rate for NAU could most likely be availability related, it could also likely be as a result of the management's insistence on the use of multi-media projector in teaching all General Studies (GS) courses in NAU.

The basic challenges of e-learning were discovered to be power outage and equipment malfunction, with any other challenge classified as 'others'. The study showed that for power outage, NAU (80%) had the least, while COOU and IMSU had 90% and 96% respectively. This most likely implies that NAU had better power supply than COOU and IMSU, which could equally be fund related; for equipment malfunction, the study showed that NAU (18%) had the highest rate while COOU and IMSU had 10% and 4% respectively. This implies that equipments are better maintained in COOU and IMSU more than in NAU. This could imply a more functional works department in COOU and IMSU than in NAU. In 'other' category, the result showed a 2% rate for NAU with COOU and IMSU recording no challenge in this group.

In assessing the learning outcomes for reading comprehension levels, 100 students were used per university. 50 students in the test group and another 50 students in the control group. In NAU, the study showed that 20 students scored 70% and above under the Computer-Assisted Language Learning (CALL), while 15 students scored 50-59% under the conventional face-to-face learning. This implies that students learned more with CALL than the traditional face-to-face learning technique.

This scenario was replicated in COOU where 25 students scored 70% and above compared with 21 students who scored 40-49% under the face-to-face learning milieu. This result also shows that students of COO
U learned more with CALL than the conventional (face-to-face) learning process.

In IMSU, twenty-eight (28) of the students who were subjected to Computer-Assisted Language Learning (CALL) scored 70% and above, while 30 of the students exposed to face-to-face learning scored 30-39%. This also shows that students of IMSU learn more with CALL than face-to-face learning techniques.

The result of the study showed that students reading comprehension levels were significantly higher for Computer-Assisted Language Learning (CALL) than for conventional face-to-face learning. This therefore corroborates the work of Blake (2000), Chen and Cheng (2006) and Egber (2002) which postulated that incorporating technology in teaching second language learners helped to enhance the learners' all round performance in the classroom.

V. CONCLUSION

The study showed that COOU and IMSU which are state-owned universities scored poorly in availability of multi-media projectors. There is therefore the need for enhanced funding in these institutions in order to facilitate learning.

In all the institutions, the lecturers were computer-compliant, while the multi-media projector-compliance rates for COOU and IMSU were very poor. In these two institutions, it is needful that the management insists on the use of multi-media projectors for quality and better service delivery.

Most of the challenges of e-learning were shown to be power outage and equipment malfunction. It is therefore pertinent that institutions provide effective alternate power sources and strengthen their Works Departments to ameliorate these challenges.

Finally, the study showed that Computer Assisted Language Learning produced better learning outcomes for reading comprehension levels than conventional face-to-face learning procedure. There is therefore the need for educational institutions to invest more in CALL instructional facilities and man-power training for overall quality assurance.

VI. RECOMMENDATIONS

The study recommends as follows:

1. Better funding of Nigerian universities.
2. Sponsorship of lecturers to ICT-related courses within and outside the country.
3. Provision of alternate and effective power sources for Nigerian universities.
4. Recruitment of qualified and ICT-compliant maintenance officers in the Works Department of all universities to optimise equipment function.
5. Introduction of Computer Assisted Language Learning in all the courses in the general studies (GS) programmes of all Nigerian universities to promote learner's autonomy.
6. Finally, similar studies are recommended in universities located in other geo-political zones of Nigeria in order to draw appropriate comparisons.

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