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USE OF ICT TOOLS AND ACADEMIC ENGAGEMENT OF STUDENTS IN SOUTH-WEST NIGERIA UNIVERSITIES

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Abstract

Education is considered globally as the instrument per excellence for social and economic transformation of the society and the core of education is teaching and learning process. This is accomplished better when teachers effectively engage students with academic works. However, despite the infrastructural facilities provided by the States, Federal Ministry of Education agencies such as TETFUND, Quality Assurance units of the universities, private donors and the professional development of lecturers, it appears little is happening in the Nigerian Universities classrooms regarding academic engagement of students. This could be due to non-integration of adequate ICT tools to drive academic engagements of students in the universities system. However, few studies have examined the use of ICT tools in the South-West Nigerian universities, hence, this study. The study employed survey research design. The population of the study was 14,648 of eight Federal universities in the south west, Nigeria. The sample size of 392 was determined by using Taro Yamane (1967) formula. Stratified and simple sampling techniques were used to select 126 lecturers and 266 students from the 8 Federal universities used for the study. Data was collected with structured and validated questionnaire. Cronbach Alpha reliability coefficient for the constructs ranged from 0.70to 0.95. Data were analysed by using descriptive analysis. Findings showed that ICT tools were available but not adequate for academic engagement. In addition, the available ICT tools were not used frequently and coupled with the inadequacy of the tools, its effect was not felt much. It was also found that use of the available ICT tools influenced the lecturers to introduce new innovation in teaching, which in turn facilitates smooth delivery of instructions and saves time and energy. Respondents also identified the challenges facing the use of ICT tools to include inadequate funding to procure ICT infrastructure and modern ICT tools, lack of supervision, unstable network and power supply and lack of policy on ICT use in the university system. The study concluded that university administrators should liaise with TETFUND to provide ICT infrastructures such as modern ICT tools, broadband access that will facilitate speedy internet access as well as alternative power supply to resolve the challenges of unstable power supply for enhanced academic engagement. Furthermore, university administrators should sensitize and encourage lecturers to use tutorial hours for effective academic engagement where necessary to resolve the challenge of limited hours allocated to courses

Key Words: Academic engagement, ICT tools use, University students, South –West Nigeria

BACKGROUND

Education is considered globally as the instrument per excellence for social and economic transformation of the society. Hence, many nations of the world strive to commit much of their wealth to the establishment and management of educational institutions at various levels. Teachers are very crucial to the success of this bold initiative and are the center to which the process of education hangs, hence are indispensable instrument in educational system. Through the teachers, students are equipped with the skills required to demonstrate both intellectual and emotional connections to the school and succeed in life. According to Phillips (2018), teachers are mandated to equip students with the cognitive, affective and psychomotor behaviors required to effectively cope as a member of the society. Therefore, for teachers to inculcate the behaviours into students and have a deeper understanding of their school work, acquire necessary value and skills for a successful career, there is need for intensive engagement of students.

Globally, universities are established for training of students through knowledge production and dissemination made possible by research and teaching activities to become the skilled manpower for any nation and its development. This implies that students are meant to build their skills and become knowledgeable by engaging in academic activities offered at the university. In the 21st Century era, the emergence of technology has made it possible to measure and improve students' engagement. Educators hold different views on student engagement and this lend credence to what constitute the concept. Rick and Arend (2010) refer to student engagement as how involved or interested students appear to be in their learning and how connected they are to their classes, their institutions and to each other. The author explained further that it is anything that encourage students to participate in activities beyond the baseline expectation of the course.

Similarly, Sousa (2016) defines student engagement as amount of attention, interest, curiosity and positive emotional connections that students have during learning. Closely related to the above, Ghasemi, Moonaghi and Heydard (2018) define academic engagement as participation or attention that students pay their academic works, interaction with fellow students, teachers, school activities and environment. Also, Delfino (2019) defines academic engagement as the attention students pay to school work and their interaction with fellow students, teachers, school activities and school environments. In other context, National Survey of Student Engagement (NSSE) (2018) defines student engagement as the amount of time and efforts that students devote to educational activities. NSSE survey report added that student engagement represents how academic institutions structure their curriculum and learning opportunities to get students participate in educational activities. Student engagement is considered as an important predictor of student performance. Sousa (2016) identified examples of observable behavior such as attending class, listening attentively in class, participating in class discussions, turning in assignment promptly and following rules and directives as a form of student engagement.

In the context of this work, academic engagement of students are the various educational activities undertaken by South-West university lecturers to inculcate into students, cognitive, affective and psychomotor behaviours which extend to motivating, reinforcing, instructing, guiding, counselling, teaching, supporting them to develop positive attitude, value, knowledge and skill required to cope effectively as members of the society. Cognitive academic engagement refers to impacting into students the concepts, theories and ideas to develop their mental ability. Affective academic engagement includes students' attentiveness, happiness, eagerness, aggressiveness, opinion and other emotional behaviours which have influence on students' learning while Psychomotor academic engagement covers writing, speaking, typing, persistence, participation and involvement in academic activities such as participating in sporting activities, class discussions and doing homework.

In the 21st century, development in the educational sector has made it mandatory for lecturers to engage students digitally so as to participate actively and acquire the knowledge and skills required to be at per with their counterpart internationally. Given the enormous potential of ICT use to successfully impact on academic engagement of students in Europe, America, Japan, China, it becomes imperative for Nigeria universities to equally use ICT tools to engage their students for improved teaching-learning process. In the

context of this study, ICT tools employed in the universities refers to the technology-based tools that are used in the universities such as computer, Lap-top, LCD, digital photocopy machine, digital Audio and Video devices, digital camera, scanner, DVD player and multimedia projector employed by lecturers to disseminate knowledge, stimulate thinking and understand, improve teaching quality and develop innovations that affect students' skills. Coleman, Gibson, Cotten, Howell-Moroney and Stringer (2016) contend that the appropriate use of ICT tools in teaching had transformed the learning environment from teacher-centred to learner-centred. They stress that this shifting of emphasis from teaching to learning creates a more interactive and engaging learning environment for teachers and learners thus changing the role of the teacher from knowledge transmitter to that of a facilitator, knowledge navigator and a co-learner. Implicitly, both the teacher and the learner must be active in the teaching-learning process for learner to learn more from what they do by themselves (Abimbade, 2014).

To adequately imparted in students, the cognitive, affective and psychomotor behaviors and accomplish the attainment of educational objectives such as concepts, ideas, theories and other learning concepts that require creative thinking, university lecturers employed a number of activities to engage and drive students' success. However, despite the infrastructural facilities provided by the States, Federal Ministry of Education agencies such as TETFUND, Quality Assurance units of the universities, private donors and the professional development of lecturers, it appears little academic work is happening in the Nigerian Universities (Son & Amparado, 2018). Besides, George's (2019) study attributed low academic engagement partly to the incessant strike embarked upon by ASUU due to outright neglect and poor funding of Nigerian universities; which often make students to lack self-direction, inability to initiate learning, manage their time and study without supervision. The low level of academic engagement suggests that Nigeria universities may not be using ICT tools to their advantage to achieve effective engagement of students.

Given the importance of ICT tools use to achieve effective academic engagement in the educational institutions, it becomes imperative for Nigerian universities to integrate use of ICT tools in the university system for teachers to supplement their work in this digital era. UNESCO World Education report (2019) maintained that student and teachers must have sufficient access to improve digital technology and the internet in their classroom, schools, teacher educational institutions for enhanced effective teaching learning process. The report emphasized further that the quality of professional development of teacher education depends on the extent of ICT integration in higher education program, hence, teachers must use new digital tools to help their students achieve high academic standard. The use of ICT tools provides the learners with realistic experience, which capture their attention and assist in understanding the historical phenomena (Saima, Qadir & Shazia, 2011). It promotes profound innovations, encourages the use of diversified approaches aimed at increasing flexibility of academic engagement, affords students opportunity to learn anytime and anywhere, interact simultaneously with ease and convenience in the university system. This underscore the need for using appropriate ICT tools to make teaching-learning process simple, interesting and easy to apply the required 21st century skills. In Nigeria, despite the efforts of the States and Federal Ministry of Education agencies such as TETFUND, Quality Assurance units of the universities and other donor agencies at providing enabling environment in the universities for enhancement of ICT tools use for academic engagement of students, previous studies (George, 2019; Johnson, 2019) have shown that the level of using ICT tools to engage students in the universities for teaching enhancement was still in its infancy and very low. Similarly, Suleiman, Yahya and Tukur (2020) opined that the use of ICT tools in providing effective academic engagement in Nigerian universities is being continually undermined and called into question with the incessant ASUU strike that take larger percentage of time required for academic engagements in the federal universities. Research (UNESCO,2020) has also shown that higher educational institutions, particularly those Universities in the developed countries derived a lots of advantages in using ICT tools as a means of imparting knowledge and skills required by the educational advancement of the 21st century. While it is possible that universities in Nigeria recognize the significant role of using ICT tools in driving effective academic engagement of students, they may not be using it to their advantage. It is on this basis that his study investigated the use of ICT tools in South West Universities, with a view to find out the

types of ICT tools available, its adequacy, frequency of use, influence of use and the challenges of using ICT tools for academic engagement.

Research Questions

1)What is the level of academic engagement in the south west Nigeria universities?
2) What are the are the ICT tools available to engage students academically in the South West Nigerian Universities?
3)What is the adequacy of ICT tools used to engage students academically in South-West Nigerian universities?
4) What is the frequency of ICT tools use for academic engagement?
5)Does the use of ICT tools has influence on academic engagement of students?
6) What are the challenges faced by lecturers and students in using ICT tools for academic engagements?

LITERATURE REVIEW

Education is considered globally as the instrument per excellence for social and economic transformation of the society. Hence, many nations of the world strive to commit much wealth to the establishment and management of educational institutions at various levels. Education helps to sustain economic development by preparing students for the world of work. It inculcates in students, the democratic values and encourage qualitative participation in the governance process (Chidobi & Eze, 2016). The core of education is teaching and learning process and this is more efficient when teachers engage students with academic activities. Learning can be reinforced to stimulate, motivate and as well as arrest learners' attention with instructional materials of different varieties. According to George (2019), teachers are mandated to equip students with the cognitive, affective and psychomotor behaviors required to effectively cope as a member of the society and hence, are indispensable instrument in educational system. For teachers to inculcate the three behaviours into students and acquire necessary value and skills for a successful career, there is need for intensive academic engagement of students. In the 21st Century era, the emergence of technology has made it possible to measure and improve students' engagement. Educators hold different views on student engagement and this lend credence to what constitute the concept. Sousa (2016) defines student engagement as amount of attention, interest, curiosity and positive emotional connections that students have during learning. Closely related to the above, Glossary of Education Reform (2016) considers student engagement as degree of attention, curiosity, optimism and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in education. Rick and Arend (2010) refer to student engagement as how involved or interested students appear to be in their learning and how connected they are to their classes, their institutions and to each other. The author explained further that it is anything that encourage students to participate in activities beyond the baseline expectation of the course. In other context such as in Edinburgh University, Institute for Academic Development (2021) student engagement refers to both governance (students' representatives and institutional engagement) and pedagogy (learning, teaching, assessment and curriculum). Student engagement is considered as an important predictor of student performance. Sousa (2016) identified examples of observable behavior such as attending class, listening attentively in class, participating in class discussions, turning in assignment promptly and following rules and directives as a form of student engagement. In the context of this work, academic engagement of students are the various educational activities undertaken by South-West university lecturers to inculcate into students, cognitive, affective and psychomotor behaviours which extend to motivating, reinforcing, instructing, guiding, counselling, teaching, supporting them to develop positive attitude, value, knowledge and skill required to cope effectively as members of the society. Cognitive academic engagement refers to impacting into students the concepts, theories and ideas to develop their mental ability. Affective academic engagement includes students' attentiveness, happiness, eagerness, aggressiveness, opinion and other emotional behaviours which have influence on students' learning while Psychomotor academic engagement covers writing, speaking, typing, persistence, participation and

involvement in academic activities such as participating in sporting activities, class discussions and doing homework.

In the 21st century, development in the educational sector has made it mandatory for lecturers to engage students digitally so as to participate actively and acquire the knowledge and skills required to be at per with their counterpart internationally. Coleman, Gibson, Cotten, Howell-Moroney and Stringer (2016) contend that the appropriate use of ICT in teaching had transformed the learning environment from teacher-centred to learner-centred. They stress that this shifting of emphasis from teaching to learning creates a more interactive and engaging learning environment for teachers and learners thus changing the role of the teacher from knowledge transmitter to that of a facilitator, knowledge navigator and a co-learner. Implicitly, both the teacher and the learner must be active in the teaching-learning process for learner to learn more from what they do by themselves (Abimbade, 2014). It is therefore the responsibility of teachers to use appropriate ICT tools that will facilitate teaching-learning effectiveness.

Conceptually, Information and communication technology (ICT) includes electronic, information processing, technology such as computer and the internet as well as fixed-line telecommunication, mobile phones and other wireless communication network, broadband use to facilitate access, retrieve, store, organize, manipulate, share and present information electronically (Doglas, 2017). In 21st Century information and technology (IT) era, the use of ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills (Akyol & Erdem, 2021). Laronde et al. (2017) maintained that student and teachers must have sufficient access to improved digital technology and internet effective academic engagement.

Current researches (Ghavifekr & Athirah 2015; Yusta, 2016; George, 2019, Sani, Alabi, Danjuma & Momoh, 2021) have shown that various types of ICT tools are available for academic engagement in the universities and this include computer set/Lap top, internet facility, handset, LCD projector, Photocopier and Public Address, interactive white board, television, film projector, VCD/DVD players, multi-media projector, Scanner to Digital Audio and Video. However, Ghavifekr, Kunjappan, Ramasamy and Anthony 2017, was quick to point out that availability of ICT tools does not guarantee its effective use due to factors such as limited connection and network, technical support, limited time and lack of effective training of staff on IT skills as revealed in Malaysia. This assertion was supported by Akyol and Erdem's (2021) study which revealed that equipment and facilities for effective teaching and learning are deficient in Nigerian schools. Literature has also established that while ICT tools were widely used in the developed countries of Europe, Japan, Russia, America and China universities amongst others to promote academic engagements including teaching learning processes, it has not been widely integrated into African universities until the onset of COVID 19 pandemic (Johnson, 2019). Hence, the influence of the use of inadequate ICT tools for academic engagements were not well felt (Edhereveno & Oniovosa, 2014; Coleman, Gibson, Cotten, Howell-Moroney & Stringer, 2016).

Laronde *et al.* (2017) highlighted the benefits of using ICT tools to include teaching and enhancing students retentive memory, explaining complex instructions and ensure comprehension of complex instructions, creating interactive classes and making lessons more enjoyable to improve student attendance and concentration. ICT provides distance learners the ability to use online instructional materials, access them easily, and provide additional tools for resource-based learning to the learner (Laronde *et al.*, 2017). Also, in their studies Suleiman, Muhammad, Zakari, Jyoti, Shitu and Ukashatu (2020) identified the advantages that students benefit from use of ICT tools to include motivation, cooperative learning, fast communication, e-conference, e-learning and collaborative research. In this digital era, ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills (Sunday, 2015). Research around the world has shown that use of ICT tools had led to improved learning and better teaching methods for students. For example, a study from the National Institute of Multimedia Education in Japan showed that an increase in student exposure to educational ICT through curriculum integration has a significant and

positive impact on student achievement, particularly in subject areas such as mathematics, science, and social studies (Laronde *et al.*, 2017)

However, despite the merits of using ICT tools for academic engagement in Nigerian universities, some set-backs are identified in literature. Edumadze, Ossei-Anto, Edumadze, Tamakloe, Asamoah & Boadi (2014) identified the challenges of ICT tools use to include lack of adequate funding for ICT, lack of adequate knowledge of the benefits of ICT in the teaching and learning process, and lack of support and training. Similarly, Suleiman, Yahya and Tukur (2020) found that high cost of ICT tools, exorbitant internet access fees and the peripherals such as printers, monitors, documents, modems, extra disk drives and other devices including basic computers were beyond the scope of higher institutions in Nigeria. In addition, several studies (Albirini, 2006; Mikoslav, 2014; Ghavifekr & Wan Athirah, 2015) have also identified technical faults, lack of effective training, non-availability of some ICT infrastructures such as broadband access as factors that can hinder use of ICT tools for academic engagement.
Slightly different from the above, Nwakile (2018) identified challenges of ICT tools use to include lack of adequate time to adequately use the tools, unavailability in schools, resistance to change, poor maintenance culture, technical problems, space, lack of required skills. Empirical studies conducted by Ogunrewo and Odunsuna (2010), on the appraisal of internet usage among academic staff of Afe Babalola University, pointed out that the use of ICT tools and internet had greatly enhanced and contributed to the effective and efficient academic engagement. The study conducted by Bade *et al*. (2015) highlighted the challenges of using ICT tools to include inadequate ICT tools, epileptic power supply, poor maintenance, high cost of facilities and peripheral parts, lack of ICT skills and poor internet access.
The above challenges notwithstanding, It has been noted over the years that due to the advancement and development of modern technology, Universities in the developed countries had been using ICT tools to their advantage for imparting in students the knowledge and skills required by the educational advancement of the 21st century (UNESCO 2020). In addition, research findings around the world (Suleiman,Yahya & Tukur, 2020) had shown that using ICT tools has led to improved learning and better teaching methods for students. In particular, a study from the National Institute of Multimedia Education in Japan showed that an increase in student exposure to educational ICT through curriculum integration has a significant and positive impact on students' achievement (Laronde et al., 2017). However, the use ICT tools in providing effective teaching and learning in Nigerian universities is being continually undermined and called into question. This study therefore investigated the use of ICT tools in South West Universities, with a view to discovery how best to optimize it for enhanced academic engagement.

Methodology
The study employed survey research method because the study investigated the use of ICT tools and academic engagement. The population for the study was 14,648 students and lecturers of faculty of science, Arts and Education in the eight (8) Federal universities in the South West, Nigeria. Federal Universities were the focus of the study because they are well funded by TETFUND and are supposed to model both the States and Private universities. The sample size of 392 from the population of 14,648 was determined by using Taro Yamane (1967) formula. Stratified and simple sampling techniques were used to select the 266 students and 126 lecturers across all the Universities investigated. The researcher gave more attention to the faculties than the Departments to ensure equitable representation of the sample. Moreover, the different designations of lecturers and the years of students were also taken into consideration in the selection of the sample. In all, two hundred and sixty-six (266) students and one hundred and twenty-six lecturers (126) were selected making a population samples of three hundred and ninety-two (392). The instrument used for data collection was self-constructed structured questionnaire which was validated using Cronbach's alpha test. The instruments used were lecturers' Check List (LCL) and Students' Check List (SCL) which were personally administered and collected on the spot by the researcher and four assistants. Both the content and construct validity of the instruments were ascertained after subjecting it to responses of a comparable group of sample. The reliability values which ranged from 0.70-0.95 obtained, was considered adequate and of high level of inter-item consistencies. Descriptive statistic was used to analyse the data collected from the research questions. Use of ICT tools for academic engagement was measured by the types of ICT tools

available, frequency of use and influence of use. The criterion for decision making was determined by finding the mean of the nominal values assigned to the options in each questionnaire items using the formula; $\bar{X} = \frac{\sum X}{N}$

Where X=mean score; X=score; N= Number of items; Thus, for four Likert scale, Mean Score(X) = 4+3+2+1=10/4=2.50 while for five Likert scale, Mean Score(X)= 5+4+3+2+1= 15/5=3.00. Hence, the cut-off point used for this study were 2.50 and 3.00. The decision rule was that responses above the mean scores of 2.50 and 3.00 are either at high level, agreed, available, adequate or frequent while responses below 2.50 are either disagreed, non-available, inadequate or not frequent.

RESULTS

Research Question One: What is the level of academic engagement in South West Nigerian universities?

Table 1: Academic engagement of students in South West universities

My lecturers …		Very High Level 5	High Level 4	Moderate Level 3	Low Level 2	Very Low Level 1	Mean	N
1	Are punctual in the class to disseminate instruction to students	33	68	45	50	70	2.79	266
2	Take time to explain concepts, theories and practical taught in class adequately well	25	80	66	30	65	2.89	266
3	Create rooms for students to discuss in and outside the classroom	22	54	65	50	75	2.62	266
4	Give us assignments regularly and return it promptly after marking	20	60	98	26	62	2.81	266
5	Counsel us on career progress	36	40	80	50	60	2.78	266
6	Attach deadlines to assignments given to us	30	40	51	90	55	2.62	266
7	Engage us only on teaching – learning process	30	40	41	75	80	2.49	266
8	Only engage us in the classroom, no on-line assignment.	25	40	56	65	80	2.40	266
9	Encourage cooperative studies/assignments with other students	30	36	60	80	60	2.61	266
10	Encourage and motivate us only in our academic studies	25	35	40	66	100	2.23	266
	Over-All Mean = 2.62							

***Decision Rule: If mean falls between ≤ 2.99= low, 3.0-3.49=Average, 3.5-4.49=high, 4.5-5.0=very high

The result in table 1 shows that students response on the level of academic engagement by the lecturers is low with overall mean score of 2.62, which is lower than the decision value of 3.00. The result revealed further that though the mean value of items 1, 2, 3, 4, 5, 6 and 9 are above the overall mean value, their levels of engagement were low. This may not be unconnected with the incessant ASUU strike embarked by the lecturers as a result of outright neglect of university system and insufficient funding by government. Responses on item 7 (mean=2.49) showed that students were not only engaged in teaching and learning process but also in other academic activities such as being friendly with course mates as well as interact with students from other cultures, counselling them on career prospect and encouraging cooperative

studies/assignments with other students. Responses from item 10 (mean=2.23) also indicated that students were not only encouraged and motivated in their academic studies but also in other academic engagements possibly to acquire affective and psychomotor behavior. Summarily, the academic engagement of students by the lecturers is low. This implies that little academic work is happening in the Nigerian Universities (Son & Amparado, 2018).

Research Question Two: What are the ICT tools available to engage students in the South West Universities?

Table 2A: Students' Responses to Availability of ICT tools used to engage students

	My Lecturers use the ICT tools for academic engagements	SA 4	A 3	SD 2	D 1	N	Mean	
1	Instructional White Board	20	110	106	30	266	2.45	
2	Computer Set/ Lap top	85	91	40	50	266	2.79	
3	Internet facility for on-line assignments	86	90	30	20	266	2.61	
4	Television	90	86	60	30	266	2.88	
5	Film projector	35	20	111	95	266	1.94	
6	LCD projector	96	80	50	40	266	2.87	
7	VCD/DVD player	32	48	106	80	266	2.12	
8	Multi-media projector	40	30	96	100	266	2.04	
9	Handset/Phone	85	86	60	35	266	2.83	
10	Photocopier machine	92	86	60	28	266	2.90	
11	Digital Audio and Video tools	42	26	100	98	266	1.74	
12	Scanner.	24	35	115	92	266	1.97	
13	Public Address System Overall Mean = 2.50	92	86	56	32	266	3.41	

Key: Strongly Agree (SA); Agree (A); Strongly Disagree (SD); Disagree (D)

Table 2A shows the descriptive statistic result of research question one. Students' responses show that generally, ICT tools were available with group mean of 2.50, which is equal the to the cut-off point of 2.50. The result shows further that computer set/lap top with mean score of 2.79, internet facility for assignments with 2.61, television with mean score of 2.88, LCD projector with mean score of 2.87, hand set with mean score of 2.83, photocopier with mean score of 2.90 and public address system with mean score of 3.41 had mean scores above the cut-off point of 2.50 and therefore available in all the universities investigated. On the other hand, instructional white board with mean score of 2.45, film projector with mean score of 1.94, VCD/DVD players with mean score of 2.12, multi-media projector with mean score of 2.0, Digital Audio and Video tools with mean score of 1.74 and Scanner with mean score of 1.97 had mean score below the cut-off point of 2.50. Implicitly, Computer set/Lap top, Internet facilities for assignment, Television, LCD projector, Hand set, Photocopier and Public Address system were considered available by the students while Instructional White Board, film projector, VCD/DVD players, multi-media projector, Digital Audio and Video tools and Scanner were not available in most of the universities investigated.

Table 2B: Lecturers' Responses to Availability of ICT tools used to engage students for Teaching and Learning process

	My Lecturers use the ICT tools for academic engagements	SA 4	A 3	SD 2	D 1	N	Mean	Decision
	Instructional White Board	12	28	38	48	126	2.03	

	Computer Set/ Lap top	30	50	20	26	126	2.67	
	Internet Facility for on-line assignment	30	71	10	15	126	2.92	
	Television	26	54	22	24	126	1.84	
	Film projector	15	25	32	54	126	2.01	
6	LCD projector	32	48	20	26	126	2.68	
7	VCD/DVD player	16	10	48	52	126	1.92	
	Multi-media projector	10	20	46	59	126	1.92	
	Handset/Phone	38	52	20	16	126	2.89	
	Photocopier machine	34	46	26	20	126	2.75	
	Digital Audio and Video tools	14	20	48	44	126	2.03	
	Scanner.	16	24	46	40	126	2.13	
	Public Address System	32	50	20	24	126	2.74	
	Overall Mean = 2.35							

Key: Strongly Agree (SA); Agree (A); Strongly Disagree (SD); Disagree (D).

Table 2B shows the descriptive statistic result of research question one. Lecturers' responses agree that the ICT tools available for academic engagement was low with group mean score of 2.35 below the cut-off point of 2.50. The result shows further that Computer set/Lap top with mean score of 2.67, Internet facility with 2.92, LCD projector with mean score of 2.68, Hand set with mean score of 2.89, Photocopier with mean score of 2.75 and Public Address system with mean score of 2.74 had mean scores above the cut-off point of 2.50 and therefore available in all the investigated universities. On the other hand, Instructional White Board with mean score of 2.03, Television with mean score of 1.84, film projector with mean score of 2.01, VCD/DVD players with mean score of 1.92, multi-media projector with mean score of 1.92, Digital Audio and Video tools with mean score of 2.03 and Scanner with mean score of 2.13 had mean score below the cut-off point of 2.50. Implicitly, the lecturers investigated agreed that Computer set/Lap top, Internet facility, LCD projector, Hand set, Photocopier and Public Address system were available in all their universities while Instructional White Board, Television, film projector, VCD/DVD players, multi-media projector, Digital Audio and Video tools and Scanner were considered not available in most of the universities investigated.

Research Question Three: What is the adequacy of the ICT tools used to engage the students?

Table 3A: Students' Responses to Adequacy of ICT tools used for academic engagements in the universities

	Adequacy of ICT tools used for academic engagements in my university	VA 4	SA 3	RA 2	NA 1	N	Mean	Decision
1	Instructional White Board	18	32	120	96	266	1.89	
2	Computer Set/ Lap top	88	90	40	48	266	2.82	
3	Internet Facility for on-line assignments	20	30	76	100	266	1.47	
4	Television	30	62	90	84	266	2.14	
5	Film projector	28	30	116	92	266	1.98	

6	LCD projector	42	50	94	80	266	2.20	
7	VCD/DVD player	30	50	100	84	266	2.08	
8	Multi-media projector	38	28	98	102	266	2.01	
9	Handset/Phone	88	90	56	40	266	2.85	
10	Photocopier machine	32	50	98	86	266	1.73	
11	Digital Audio and Video tools	28	38	102	98	266	1.98	
12	Scanner.	24	30	116	96	266	1.93	
13	Public Address System 2.82 Overall Mean = 2.15	94	80	50	42	266		

Key: Very Adequate (VA); Sometimes Adequate (SA); Rarely Adequate (RA); Not Adequate (NA).

Source: Field Survey, 2020

Table 3A shows that with the overall mean score of 2.15, which is below the cut-off point of 2.50, general the ICT tools used to engage the students were inadequate. The result shows further that computer set/lap top with mean score of 2.82, Hand set/Phone with mean score of 2.85 and Public Address system with mean score of 2.82 had mean score greater than the cut-off point of 2.50 and therefore adequate. On the other hand, Instructional White Board with mean score of 1.89, LCD projector with 2.20, Internet facility with mean score of 1.47, Television with mean score of 2.14, film projector with mean score of 1.98, VCD/DVD players with mean score of 2.08, multi-media projector with mean score of 2.01, Photocopier with mean score of 1.73, Digital Audio and Video tools with mean score of 1.98 and Scanner with mean score of 1.93 had mean scores below the cut-off point of 2.50. By implication, ICT tools such as Computer set/Lap top, Hand set, and Public Address system were considered by the adequate by the students while Instructional White Board, LCD projector with 2.20, Television, film projector, VCD/DVD players, Internet facility, Photocopier multi-media projector, Digital Audio and Video tools and Scanner were considered inadequate.

Research Question Three: What is the adequacy of the ICT tools used to engage the students?

Table 3B: Lecturers'' Responses to Adequacy of ICT tools used for academic engagements in the universities

Adequacy of ICT tools used for academic engagements in my university		VA 4	SA 3	RA 2	NA 1	N	Mean	Decision
1	Instructional White Board	16	20	50	40	126	2.10	
2	Computer Set/ Lap top	30	52	20	24	126	1.91	

3	Internet Facility for on-line assignments	32	48	20	26	126	1.89	
4	Television	20	26	30	50	126	2.13	
5	Film projector	10	26	36	54	126	1.94	
6	LCD projector	15	20	35	58	126	1.97	
7	VCD/DVD player	16	10	50	50	126	1.94	
8	Multi-media projector	10	22	46	48	126	1.95	
9	Handset/Phone	20	16	38	52	126	2.03	
10	Photocopier machine	26	18	34	48	126	2.17	
11	Digital Audio and Video tools	15	18	48	45	126	2,02	
12	Scanner.	16	20	50	40	126	2.10	
13	Public Address System 2.97 Overall Mean = 2.09		36	60	20	10	126	

Key: Very Adequate (VA); Sometimes Adequate (SA); Rarely Adequate (RA); Not Adequate (NA).

Table 3B shows that with the overall mean score of 2.09 lower than the cut-off point of 2.50, the use of ICT tools was generally inadequate for academic engagement. The result shows further that public address system was considered adequate in all the universities with mean score of 2.97 greater than the cut-off point of 2.50. All the other ICT tools which were instructional white board with mean score of 2.10, television with mean score of 2.13, photocopier machine with mean score of 2.17, Scanner with mean score of 2.10, Computer set/Lap top with 1.91 mean score, internet facility with mean score of 1.89, film projector with mean score of 1.94, LCD projector with 1.97 mean score, VCD/DVD players with mean score of 1.94, multi-media projector with mean score of 1.95, Hand set/Phone with mean score of 2.03 and Digital Audio and Video tools with mean score of 2.02, had mean scores below the cut-off point of 2.50. By implication, public address system was considered by the lecturers to be adequate while ICT tools such as interactive white board, television, Photocopier, Scanner and Public Address system, Computer set/Lap top, LCD projector, Hand set, film projector, VCD/DVD players, Internet facility, multi-media projector, Digital Audio and Video tools were considered inadequate. Based on the overall mean scores of 2.15 and 2.09 for students and lecturers respectively, it was evident that the ICT tools available in the universities were not adequate.

Research Question Four: What is the frequency of the ICT tools used to engage the students?

Table 4A: Students' Responses on the frequency of using ICT tools for academic engagements in the universities

Adequacy of ICT tools used for academic engagements in my university		VO 4	O 3	S 2	NU 1	N	Mean	Decision
1	Instructional White Board	20	66	120	60	266	2.17	
2	Computer Set/ Lap top	50	80	86	50	266	2.49	
3	Internet Facility for on-line assignments	76	80	40	70	266	2.46	
4	Television	40	90	110	26	266	2.20	
5	Film projector	25	45	140	56	266	1.77	
6	LCD projector	20	35	160	51	266	2.09	
7	VCD/DVD player	36	48	98	84	266	2.14	
8	Multi-media projector	35	36	95	100	266	2,02	
9	Handset/Phone	80	90	60	36	266	2.50	
10	Photocopier machine	90	80	66	30	266	2.86	
11	Digital Audio and Video tools	30	25	110	91	266	2.24	
12	Scanner.	20	34	114	98	266	1.91	
13	Public Address System Overall Mean = 2.29		96	90	50	30	266	2.95

Key: Very Often (VO); Often (O); Sometimes (S); Not Used (NU).

Table 4A shows that with the overall mean score(n=2.29) of students' responses below the cut-off point of 2.50, ICT tools were not used frequently. The result further shows that hand set/phone with mean score of 2.50, photocopier machine with mean score of 2.80, and Public Address system with mean score of 2.95 had mean scores greater than the cut-off point of 2.50 and therefore considered to be used frequently. On the other hand, Computer set/Lap top with the mean score of 2.49, internet facility had 2.46,instructional white board had 2.17, Computer set/Lap top with the mean score of 2.49, internet facility had 2.46, television with mean score of 2.20, film projector with mean score of 1.77, LCD projector with 2.09 mean score, VCD/DVD players with mean score of 2.14, multi-media projector with mean score of 2.02, Scanner with mean score of 1.91 and Digital Audio and Video tools with mean score of 2.24 had mean scores below the cut-off point of 2.50. By implication, ICT tools such as handset, Photocopier and Public Address system were considered by the students to be used frequently while interactive white board, television, Computer set/Lap top with the mean score of 2.49, internet facility had 2.46, LCD projector, film projector, VCD/DVD players, multi-media projector, Scanner, Digital Audio and Video tools were therefore not used frequently.

Table 4B: Lecturers' Responses on the frequency of using ICT tools for academic engagements in the universities

	Adequacy of ICT tools used for academic engagements in my university	VO 4	O 3	S 2	NU 1	N	Mean	Decision
1	Instructional White Board	10	28	32	56	126	1.94	
2	Computer Set/ Lap top	30	54	20	22	126	2.73	
3	Internet Facility for on-line assignments	38	60	22	06	126	3.03	
4	Television	30	48	28	20	126	1.90	
5	Film projector	15	20	35	56	126	1.95	
6	LCD projector	32	50	24	20	126	2.75	
7	VCD/DVD player	15	15	46	50	126	1.96	
8	Multi-media projector	05	15	50	56	126	1.75	
9	Handset/Phone	40	50	20	16	126	2.90	
10	Photocopier machine	40	52	20	14	126	2.94	
11	Digital Audio and Video tools	12	20	46	48	126	1.97	
12	Scanner.	15	25	46	40	126	2.12	
13	Public Address System 2.83 Overall Mean = 2.37	35	50	25	16	126		

Key: Very Often (VO); Often (O); Sometimes (S); Not Used (NU).

Table 4B shows that with the overall mean score of lecturers' responses of 2.37 below the cut-off point of 2.50, ICT tools were not used frequently. The result shows further that Computer set/Lap top with the mean score of 2.73, internet facility had 3.03, LCD projector with mean score of 2.75, Hand set/Phone with mean score of 2.90, photocopier machine with mean score of 2.94 and Public Address system with mean score of 2.83 had mean scores greater than the cut-off point of 2.50 and therefore were used frequently. On the other hand, instructional white board had 1.94, television with mean score of 1.90, film projector with mean score of 1.95, VCD/DVD players with mean score of 1.96, multi-media projector with mean score of 1.75, Scanner with mean score of 2.12 and Digital Audio and Video tools with mean score of 1.97 had mean scores below the cut-off point of 2.50 were not used frequently. By implication, ICT tools such as Computer set/Lap top, internet facility, handset, LCD projector, Photocopier and Public Address system were considered by the lecturers to be used frequently while interactive white board, television, film projector, VCD/DVD players, multi-media projector, Scanner, Digital Audio and Video tools were not used frequently.

Research Question Five: What is the influence of using ICT tools on academic engagement of students in South West Universities?

Table 5A: Students' Responses on the influence of using ICT tools for academic engagements in the universities

	The use of ICT tools	SA 4	A 3	SD 2	D 1	N	Mean	Decision
1	Motivates students to learn	94	80	50	42	266	2.82	
2	Enables students to acquire 21st Century skills required to be at per with their counterpart internationally	92	86	60	28	266	2.90	

3	Provides learners with realistic experience that enhance retention memory	85	91	40	50	266	2.79	
4	Promotes profound innovation that stimulate teaching learning process	85	86	60	35	266	2.83	
5	Affords lecturers the opportunity to improve teaching qualities through modified teaching methods	90	86	60	30	266	2.88	
6	Encourages collaborative research	90	80	66	30	266	2.86	
7	Provides learners with realistic experience that capture attention for effective teaching learning process	76	80	40	30	266	2.46	
8	Affords students the opportunity to learn anywhere and anytime with ease	50	80	86	50	266	2.49	
	Overall Mean =2.75							

Key: Strongly Agree (SA); Agree (A); Strongly Disagree (SD); Disagree (D)

Table 5A shows the descriptive statistic result of research question four. Students' responses show that generally, ICT tools influence academic engagement of students with group mean of 2.75, which is higher than the cut-off point of 2.50. The result shows further that items 1-6 had mean scores above the cut-off point of 2.50 and therefore were influenced by the available ICT tools use in all the universities investigated. On the other hand, items 7 and 8 with mean score of 2.46 and 2.49 respectively below the cut-off point of 2.50 were not influenced by ICT tools Implicitly, items 1-6 were influenced by use of ICT tools according to the students' responses while items 7 and 8 were not influenced by use of ICT tools in the universities investigated. However, findings show that while the use of few ICT tools available were able to influence academic engagement, the effects was not felt much due to the inadequacy of ICT tools in the universities under study and the limited hours allocated to each course with less emphasis on tutorial lectures.

Table 5B: Lecturers' Responses on the influence of using ICT tools for academic engagements in the universities

The use of ICT tools	SA 4	A 3	SD 2	D 1	N	Mean	Decision
Motivates students to learn	32	50	20	24	126	2.74	
Enables students to acquire 21st Century skills required to be at per with their counterpart internationally	38	52	20	16	126	2.89	
Provides learners with realistic experience that enhance retention memory	34	46	26	20	126	2.75	
Promotes profound innovation that stimulate teaching learning process	30	50	20	26	126	2.67	
Affords lecturers the opportunity to improve teaching qualities through modified teaching methods	38	52	20	16	126	2.89	
6 Encourages collaborative research	30	54	20	22	126	2.73	
7 Provides learners with realistic experience that capture attention for effective teaching learning process	35	50	25	16	126	2.83	
Affords students the opportunity to learn anywhere and anytime with ease	25	30	38	33	126	2.37	
Overall Mean=2.73							

Key: Strongly Agree (SA); Agree (A); Strongly Disagree (SD); Disagree (D)

Table 5B shows the descriptive statistic result of research question four. Lecturers' responses agree that the ICT tools influence academic engagement of students with overall mean score of 2.73 higher than the cut-off point of 2.50. The result shows further that items 1, 2, 3, 5, 6 and 7 with mean score of 2.74, 2.89, 2.75, 2.89, 2.73 and 2.37 respectively had mean scores above the cut-off point of 2.50 while items 4 and 8 with mean scores of 2.67 and 2.83 respectively had mean score below the cut-off point of 2.50. Implicitly, items 1, 2, 3, 5, 6 and 8 were influenced by use of ICT tools available in all their universities while items 4 and 7 were not influenced in the universities investigated. However, findings show that while the use of few ICT tools available were able to influence academic engagement, the effects was not felt much due to the inadequacy of ICT tools in the universities under study and the limited hours allocated to each course with less emphasis on tutorial lectures.

Research Question Six: What are the challenges of the ICT tools used to engage the students' academically?

Table 6: Students' and Lecturers' Responses on the challenges of using ICT tools for academic engagements in the universities

	ITEMS	SA 4	A 3	SD 2	D 1	N	Mean	
	Lack of effective Supervision	130	180	50	32	392	3.04	
	Inadequate funding to procure ICT tools	160	146	56	30	392	3.09	
	Inadequate Knowledge of use of ICT tools	42	40	160	150	392	1.93	
	Limited time allocated to each course	145	180	35	32	392	3.12	
	Lack of maintenance culture	175	190	15	12	392	3.45	
6	Inadequate Broadband access and internet facility	185	190	10	07	392	3.41	
7	Unstable power supply	20	42	160	170	392	1.78	
	Lack of commitments by the lecturers	18	24	180	170	392	1.72	
	Poor attitude of students towards learning and assignments	12	30	185	165	392	1.72	
	Inadequate public address system	50	120	150	72	392	2.38	
	Lack of Policy on ICT use in the tertiary Institutions	125	175	55	37	392	2.99	
	Group Mean = 2.56							

Key: Strongly Agree (SA); Agree (A); Strongly Disagree (SD); Disagree (D).
Table 6 shows that with the overall mean score of 2.56 that is greater than the cut-off point of 2.50, both the students and the lecturers' responses agreed that the use of ICT tools was faced with challenges which ranged from lack of effective supervision, inadequate funding to procure ICT tools, limited time allocated to the courses, lack of maintenance culture, inadequate broadband and internet facility, inadequate power supply, inadequate knowledge of skill, unstable power supply, poor attitude of students towards learning and assignment to lack of commitments by the lecturers. Further, the respondents agreed that lack of effective

supervision (n=3.04), inadequate funding to procure ICT tools (n=3.09), limited time allocated to the courses (n=3.12), lack of maintenance culture (n=3.45), high cost of spare parts 9n=3.41), inadequate power supply (n=2.38) and lack of policy on ICT use in the tertiary Institutions (n=2.99) hindered effective use of ICT tools for academic engagement while inadequate knowledge of skill (n=1.93), unstable power supply (n=1.78), poor attitude of students towards learning and assignment (n=1.72) and lack of commitments by the lecturers (n=1.72) were not considered by both the students and the lecturers as barriers to use of ICT tools for academic engagement.

Discussion of Findings

This study investigated the use of ICT tools and academic engagement of students in South West, Nigerian universities. The discussion of findings was based on the six research questions raised for the study.

Research question one was to find out the level of academic engagement of students by lecturers in South West Nigerian universities. 10- question items were used to measure the level of academic engagement of students and these were analysed by using descriptive statistics. Overall mean score of 2.62 was obtained, which indicated that the level of academic engagement was low. Further to the above, the finding corroborates that of Chukwuorji (2018) who found that the level of academic engagement in the South West Nigerian universities was low. The finding was also in agreement with Son and Amparado's (2018) study which found that little academic work was happening in the Nigerian Universities. The finding was also supported by George's (2019) study which attributed low academic engagement partly to the incessant strike embarked upon by ASUU due to outright neglect and poor funding of Nigerian universities.

In table 2A and B, the data analyzed and presented on research question one revealed the various types of ICT tools available for academic engagement in the universities investigated to include computer set/Lap top, internet facility, handset, LCD projector, Photocopier and Public Address, interactive white board, television, film projector, VCD/DVD players, multi-media projector, Scanner to Digital Audio and Video. Findings revealed further from the students' responses in table 2A that ICT tools were available with overall mean score of 2.50 while lecturers' responses from table 2B showed that ICT tools were not available for academic engagements with overall mean score of 2.35 below the decision value of 2.50. However, both the students and the lecturers agreed on the list of items available in their universities. The finding in table 2A is in line with the results of George (2019) study which reported that ICT tools for academic engagements in the universities are available in the universities located in Northern part of Nigeria compared to the universities in the South and this facilitated effective teaching learning process. The above result was in contrast to Ghavifekr, Kunjappan , Ramasamy and Anthony [2017] study which argued that availability of ICT tools does not guarantee its effective use due to factors such as limited connection and network, technical support, limited time and lack of effective training of staff on IT skills as revealed in Malaysia. The finding of this study also corroborates the report of studies from Commonwealth of Learning (2017) which noted that, although, there has been a steady increase in internet connectivity between 2012 to 2016 (from 16.1 per cent to 25.67 per cent) and engagement in ODL, at best, access to the internet in most higher institutions of learning is still very poor. The finding of this study is also related to the study conducted by Sani Alabi, Danjuma, and Momoh (2021) in Federal universities, Lokoja, Kogi State, Nigeria, which reported availability and accessibility of computers and internet for faculties and departments. The findings also agree with earlier findings of Ghavifekr & Wan Athirah, 2015) who acknowledged availability of ICT tools in his study conducted in Malaysia but found that teachers lacked enough training opportunities in the use of ICT tools in the classroom. The finding is also in support of Yusta (2016) who posited that using ICT tools would not only facilitate learning faster but were also capable of enhancing efficient and effective teaching and learning. This implies that for effective teaching and learning to be accompanied, ICT tools must be readily available for academic engagements.

Table 3A and B analysis revealed that the overall mean score of ICT tools used for academic engagement was inadequate with students overall mean score of 2.15 and lecturers overall mean score of 2.09 below the cut-off value of 2.50. The findings agree with those of Edhereveno, Oniovosa (2014) study reported that despite the prevalent nature of ICT in virtually every aspect of human endeavours, they have not been widely integrated into the teaching and learning process in African Universities. The authors argued further that the challenge of lecturers in tertiary institutions is no longer in covering the course contents or in adopting

appropriate teaching pedagogy, but having accessibility and adequacy of ICT and using it to embrace teaching and learning. Similarly, the finding agrees with George (2019) which indicated that a lots of Nigerian universities were deficient in the availability of ICT facilities for teaching learning process while studies conducted by Akyol and Erdem (2021) also revealed that equipment and facilities for effective teaching and learning are deficient in Nigerian schools. The authors argued further that adequate use of ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills in this digital era. In the same vein, the finding of this study also agree with Yusta (2016) that infrastructural requirements for the application of ICT in our educational system are presently not adequate due to constant power shortage which mostly discourages people from acquiring the ICT equipment.

Table 4A and B analysis revealed that the frequency of ICT tools use for academic engagement of students was low with students' overall mean score of 2.29 and lecturers overall mean score of 2.37 below the cut-off value of 2.50. The finding shows further that both the students and the lecturers unanimous responded that ICT tools such as handset, LCD projector, Photocopier and Public Address system were used frequently while the frequency of using Computer set/Lap top, internet facility, interactive white board, television, film projector, VCD/DVD players, multi-media projector, Scanner to Digital Audio and Video tools for academic engagement was low. This finding corroborates the study of Edhereveno, Oniovosa (2014) which reported that despite the prevalent nature of ICT in virtually every aspect of human endeavours, they have not been widely integrated into the teaching and learning process in African Universities. The authors argued further that integration of ICT tools will not only impacted on academic engagement in the tertiary institutions, they will also engender the development of our tertiary institutions, lecturers, and students' instinctive scientific inquiry mind and their critical thinking abilities.

Table 5A and B analysis revealed that the ICT tools available influenced academic engagement with students overall mean score of 2.75 and lecturers overall mean score of 2.73 higher than the cut-off value of 2.50. The finding shows further that both the students and the lecturers unanimous responded that ICT tools motivates students to learn, enables students to acquire 21st Century skills required to be at per with their counterpart internationally, provides learners with realistic experience that enhance retention memory, affords lecturers the opportunity to improve teaching qualities through modified teaching methods, encourages collaborative research and affords students the opportunity to learn anywhere and anytime with ease but disagreed on the items that ICT tools provides learners with realistic experience that capture attention for effective teaching learning process and promotes profound innovation that stimulate teaching learning process, This finding is in agreement with that of Teng and Wang (2021) which argued that the use of ICT tools influence students' performance by making them to remember the concept taught for longer period of time and provide opportunities for effective communication between teacher and students. The finding is also in agreement with George's (2019) study which found that the use of ICT tools influence academic engagements of students learning by making them to have better understanding of the expected behaviours thereby helping to bring effectiveness in learning. The finding also corroborates a study from the National Institute of Multimedia Education in Japan which showed that an increase in student exposure to educational ICT through curriculum integration has a significant and positive impact on student achievement, particularly in subject areas such as mathematics, science, and social studies. Also in agreement with this finding is Suleiman, Yahya and Tukur's (2020) study which found that use of ICT tools had influence on lecturers' academic engagements in that it makes them introduce innovation in teaching, facilitates smooth delivery of instructions and saves time and energy. The finding is in line with Ezika (2012) findings that the use of instructional aides/technologies in the classroom has the potential to help the teacher explain new concepts clearly, resulting in better understanding of the concepts being taught. However, findings show that while the use of few ICT tools available were able to influence academic engagement, the effects was not felt much due to the inadequacy of ICT tools in the universities under study and the limited hours allocated to each course with less emphasis on tutorial lectures.

In table 6, the data analysed shows that the overall mean score of lecturers and students' responses agreed that the use of ICT tools was faced with some challenges with overall mean score of 2.56 that is greater than

the decision value of 2.50. The respondents however disagreed that inadequate knowledge of skill (n=1.93), unstable power supply (n=1.78), poor attitude of students towards learning and assignment (n=1.72) and lack of commitments by the lecturers (n=1.72) were barriers to use of ICT tools for academic engagement. The finding was in agreement with Nwakile' (2018) study which identified challenges of ICT tools use to include lack of adequate time to adequately use the tools, unavailability in schools, resistance to change, poor maintenance culture, technical problems, space, lack of required skills. The finding was also corroborated by the Commonwealth of Learning (2017) study which argued that Nigeria suffers from a combination of lack of comprehensive policy on ICT in higher education, poor power supply, poor supply of ICT infrastructure such as broadband access was not accessible in a lots of Nigerian Universities.

The finding of this study however disagreed that lack of training for lecturers and students on ICT skills were challenges. Similarly, the outcome of this study also contradicted Ghavifekr & Wan Athirah (2015) study which identified lack of enough training opportunities for teachers in using ICT tools in the classroom. In addition to the above, the finding of this study also corroborates Ghavifekr, Kunjappan , Ramasamy and Anthony [2017] study which identifed limited network connection, technical support, time, lack of effective training and lack of competetnt teachers as barriers to use of ICT tools. The finding is also in agreement with the results of studies conducted by Association of African Universities (2019) which identified challenges in the introduction and utilization of ICTs in African universities to include non-reliability of electricity supply, high cost of ICT tools, exorbitant internet access fees and the peripherals such as printers, monitors, documents, modems, extra disk drives. Also in line with this study, Doglas (2017) attributed the reasons for ICT tools inadequacy to poor resource organization, poor quality hardware, inappropriate software and inadequate teachers with IT skills.

Conclusion

Based on the outcome of this study, it was concluded from the responses of both students and lecturers that the use of ICT tools can influence academic engagement of students in the universities. In the universities investigated, ICT tools were available but not adequate for academic engagement. The study also established that ICT tools were not used frequently for academic engagement. Furthermore, while the use of few ICT tools available were able to influence academic engagement of students learning by making them to have better understanding of the expected behaviours, thereby help in bringing effectiveness to teaching learning process, the effects was not felt much due to the inadequacy of ICT tools in the universities under study and the limited hours allocated to each course with less emphasis on tutorial lectures. The study also established that use of ICT tools had influence lecturers to introduce innovation in teaching, which in turn facilitates smooth delivery of instructions and saves time and energy.

Recommendation

The following recommendations were made based on the study findings.

1)The university authorities should make conscious efforts through the Student Affairs units to emphasise the use of tutorial hours by lecturers to improve their academic engagement with the students.

2)The University administrators should liase with TETFUND to fund the provision of ICT infrastructures such as
broadband access that will facilitate stable internet facility.

3) The university administrators should make available adequate ICT tools as well as alternative regular power
supply to resolve the challenges of unstable power supply for enhanced academic engagement.

4) The University administrators should pave way for efficient use of ICT tools by making them adequately available in the Departments, units, Faculties and encourage the use of tutorial lectures where necessary.

5) Sufficient tutorial time should be allotted to different courses so that the teachers will have enough time to
make illustrations using the ICT.

6) It is also recommended that adequate ICT tools should be provided for academic engagements in the Universities and lecturers should be sensitized and encouraged to use them for effective teaching

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