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Media Culture and Pedagogy: An Exploration of the Direction of Internet Technology Use in Nigeria

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Abstract:
This Paper Examines The Direction Of Internet Technology Use In Nigerian Tertiary Institutions. It Also Analyses The Extent To Which The Internet Has Been Beneficial To Learning At Colleges Of Education. The Paper Draw On Postcolonial Theory And Arguments Associated With Social Constructivism Theory. The Research Methodology Embraces A Pragmatic Approach Enabling The Researcher To Combine Qualitative And Quantitative Method Of Data Gathering And Analysis. The Findings Of The Study Revealed The Limited Understanding Of The Potential And Capabilities Of The Technology Emphasizing Social Usage With Little Or No Consideration For Learning. The Paper Suggests Ways Of Improving Upon The Current Use In Academic Institutions. In Conclusion, The Study Identifies A Significant Relationship Between Education And Technology. When Internet Technology Is Well Understood, Properly Deployed And Appropriately Utilized, It Has The Potential To Develop The Educational Sector.

Keywords*: Media, culture, pedagogy, usage, internet technology and college of education*

1. Introduction

The realization of Internet technology's potential has been a major concern for many scholars and researchers (Zittrain, 2008).However, that potential has been either ignored or misunderstood because of the lack of the necessary orientation towards Internet use (Curran et al., 2012). Developed countries have made local, national and global efforts to ensure that young adults engage with the Internet for learning purposes (Anderson, Boyles and Rainie, 2012; Ramani, 2015). However, there has been little progress in these areas in developing countries (Ekundayo and Ekundayo, 2009), where education sectors continue to be faced with insurmountable challenges. Anderson and Gronlund (2009) identify these as variations in the technological requirements of courses. Such challenges concern knowledge and competence; making learners' engagement with mathematically-oriented and linguistic courses among others both difficult and discouraging, especially at the tertiary educational level (James, 2014).The present study examines the current state of Internet technologies in Nigeria, describing the available applications, the degree of public access and the potential applications suggested by their current uses. It investigates the deployment, application and use of the Internet for educational purposes, and identifies its potential to transform the nation's educational platform. It assesses the current level of Internet use in education and how relevant technologies are channelled towards attaining the national educational goal of an equitable distribution of quality in education and the promotion of learning opportunities. The Internet plays a role in this endeavour by serving as an instrument for the enhancement of learning opportunities as highlighted in national policies for education, information and communication technology in a way that can turn learning into a lifelong activity (NG 2013, NITDA 2002),The paper explores Internet technology application across a range of student populations, as well as the learning and innovation (the creative efforts and the facilities employed) that accompany young students' daily engagement with the use of Internet technologies in institutional settings. It analyses and synthesizes the ways in which students understand their own use of Internet technologies and, at times, the barriers they encounter in their attempts to make use of them. This paper thus seeks to review the use of Internet technologies in Nigeria; to discover whether its current use has yielded any learning benefits for the nation's tertiary institutions. The use of Internet technologies in colleges of education in Lagos State has becomes imperative as a result of the students need to address the challenges of writing papers, searching for answers to questions and communicating with classmates on homework, getting project topics and also knowing how to write the project in tertiary institutions in Nigeria. The subject's context is the use of Internet technologies for learning in colleges of education in Lagos State, Nigeria. The colleges chosen as case studies for this inquiry were the Federal College of Education (FCE) in AKOKA and Adeniran Ogunsanya College of Education (AOCOED) in Ijanikin.

1.1. Research Questions

The following research questions will be answered by this study:

- What is Internet technologies used for at the selected colleges of education?
- What factors determine the use of Internet technologies made by teachers in colleges of education in their teaching?
- What factors determine the use made of Internet technologies by students at colleges of education in their studies?

1.2. Theoretical Framework

Postcolonial theory and social constructivism are adopted as the meta-theory that is expected to anchor all the steps taken to achieve the research's objectives and goals and interpret the findings. The research uses arguments generated by postcolonial and social constructivist theory to reinforce its position. Its multidisciplinary nature necessitates drawing on the arguments of related theories for support. Such theories include use and gratification theory; individual difference theory; cultivation theory; innovation and diffusion theory; the social and psychological theories of social learning and cognitive learning.

1.3. Research Methodology

The descriptive survey research method was employed, using a pragmatic approach and a mixed methods research design. The stratified random sampling method was used to select the population sample. 200 students and 100 lecturers were drawn from various schools within the two institutions (100 Students and 50 lecturers from each college) to answer the questionnaire in order to provide qualitative data. In addition, the purposive sampling technique was used in selecting 20 staff (academics) and 20 students (10 each from the two Colleges), who were canvassed by semi-structured interview. Focus group discussions were also organized for additional data, in order to ensure adequacy and reliability of the questionnaire and interview data

2. Research Analysis and Findings

2.1. Research Question One

2.1.1. What Are Internet Technologies Used for at the Selected Colleges of Education?

This question seeks to ascertain the kinds of uses to which the Internet is put, in order to establish whether the facilities available can sufficiently cater for the resulting requirements. To provide the necessary data to answer this question, the following question was posed to the participants:

2.1.2. Interview Question 1

Is the level of Internet facilities in the College adequate for its teaching/learning conditions? If it is, suggest what can be done to raise the current level; if inadequate, suggest ways to improve the current level of Internet facilities.

Interview Question 1 examines the level of adequacy of Internet technology facilities in the colleges of education in their teaching and learning processes. The interviewees sought suggestions on what the modalities for improvement should be and whether the current levels of facilities were considered adequate. If they were not, suggestions were solicited on possible ways of providing the required level of Internet facilities.

It can be observed that the key consideration in ensuring this adequate level can be based on five considerations that emerged from the interviewee responses as the key themes of conflicting priorities, localization, rules and regulations, software and interface design, and support for the faculties.

S/N	Emergent Themes	Akoka Interviewee Responses	Aocoed Interviewee Responses
1	Conflicting priorities This refers to competing factors that can militate against attention on the integration, deployment and utilization of Internet technologies in the College. These factors include limited funds, management interest and commitment.	20	20
2	Localization This refers to the physical setting of the Internet practice. What are that setting's culture, values, norms and traditions and how supportive is it of Internet use?	20	20
3	Rules and regulations What are the extant laws, government policies and regulations that guide Internet technology practices in the social context? How effective are the regulatory instruments?	09	13
4	Software and interface design This refers to the available social infrastructures and other facilities that ensure ease of Internet access. How adequate and effective are these facilities?	11	18
5	Support for the faculties This embraces both internal contributions from the College and external from the private sector and NGOs towards faculties' efforts to provide easy access to the Web.	20	19

Table 1: Interviewees' Responses Regarding the Adequacy of Internet Technology Facilities for Teaching/Learning in the Colleges

Interview Question 1 was used to answer Research Question 1 by generating data that was then coded and analyzed using TA. This produced the five themes of conflicting priorities, localization, rules and regulations, software and interface design, and support for the faculties. Table 1 shows the 40 interviewees, 20 from each college, each consisting of 10 students and 10 lecturers. The respondents believed that one of the main obstacles to the educational use of the Internet was the lack of attention paid to the technologies. Educational planners and managers face several challenges, and must prioritize what they consider to be the most important ones. The respondents believed that since they could not provide solutions to all social problems simultaneously, they had decided that the deployment and use of the Internet was a low priority. For the respondents, this could only have resulted from a lack of understanding of the potential of Internet technologies. Another theme emerging from the analysis was that of localization. This embraces the physical environment and the available infrastructural facilities. All 40 respondents saw the prevailing social conditions as capable of influencing the educational use of the Internet, quite apart from the available resources, social culture, belief system, ethics, values and tradition. Another theme was rules and regulations. In AKOKA, only 22 of the 40 interviewees believed that this could positively influence the educational use of the Internet. The minority of interviewees from AKOKA (9) and the slight majority from AOCOED result from the practical experience of non-compliance with rules and regulations by individuals and organizations when it comes to such issues as implementing policies. The interviewees maintained that there are adequate policies, rules and regulations at the global level, including EFA 2015, the World Bank, UNDP and UNESCO, and at the national level (the Nigerian National policy on Education 2014 (6th Edition), the Nigerian National Policy on ICT (2001) and the Nigerian National Conference Report (2014)). Although there seems to be an increase in the number of computers, unfortunately the interviewees claimed that this does not translate to access for Internet users, nor does it guarantee the conversion of the technology for educational use. Another theme is that of software and interface design. 29 interviewees, 11 from AKOKA and 18 from AOCOED, argued that, because of the rapid pace of technological development, several environmental factors militate against its use. The first is that the acquisition of new facilities in order to keep pace with global trends remains unattainable because of the prevailing economic conditions of recession. Closely related is the skills problem: few are proficient in the use of the Internet, and of these not many are in positions of authority. This situation does not support or promote the use of the Internet, even in learning institutions. Another important theme is that of support for the faculties. It is believed that the schools must be supported by their colleges, whether by the provision of facilities, support for programmes promoting the use of technology, or by the skilled promotion of activities such as workshops, seminars and training.

Respondents' response to questionnaire items1, 2, 5, 11 and 14 were analyzed and discussed and are presented below.

College	SA	A	UD	D	SD	Total
AOCOED	88 (29.3%)	58 (19.3%)	1 (0.3%)	2 (0.7%)	1 (0.3%)	150 (50.0%)
AKOKA	65 (21.7%)	73 (24.4%)	6 (2.0%)	3 (1.0%)	3 (1.0%)	150 (50.0%)
TOTAL	153 (51.0%)	131 (43.7%)	7 (2.3%)	5 (1.7%)	4 (1.3%)	300 (100.0%)

Table 2: I Use the Internet for Educational Purposes like Assignments, Researching Topics and Searching for Materials

The data from Table 2 and Fig. 1 shows that 284 (91.7 per cent) respondents from the two colleges, 146 (48.6 per cent) from AOCOED and 138 (46.1 per cent) from AKOKA, used the Internet for educational purposes. Nine (3 per cent) respondents, three (1 per cent) from AOCOED and six (2 per cent) from AKOKA, did not, while seven (2.3 per cent) respondents, one (0.3 per cent) from AOCOED and six (2 per cent) from AKOKA, were undecided. The finding reveals that Internet users in the colleges did indeed use the technologies for learning.

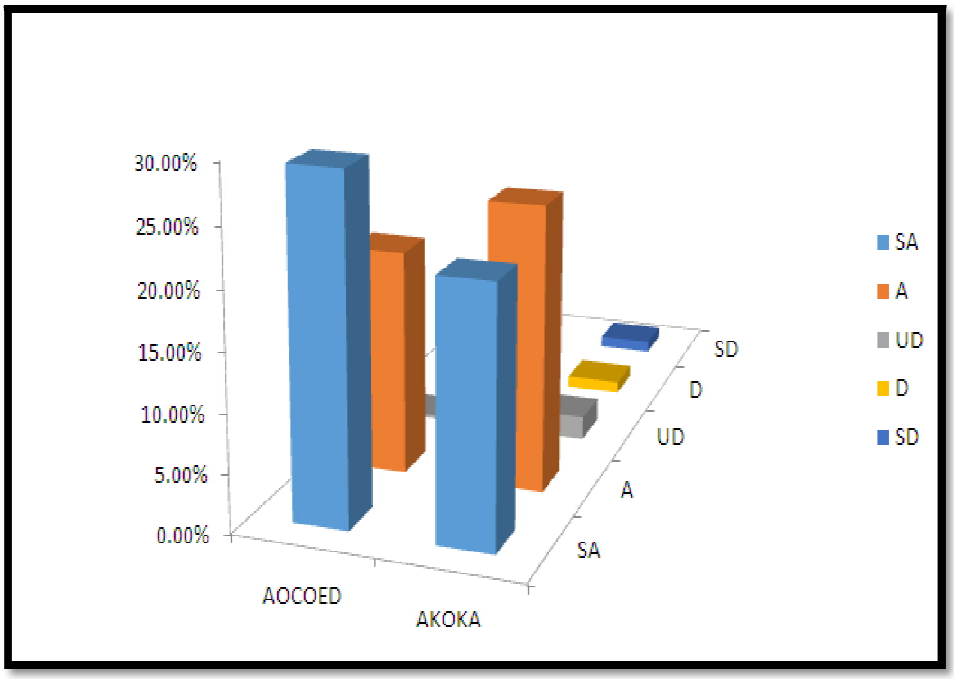

Figure 1: I Use the Internet for Educational Purposes like Assignments, Researching Topics and Searching for Materials

College	SA	A	UD	D	SD	Total
AOCOED	88 (29.3%)	57 (19.0%)	2 (0.7%)	2 (0.7%)	-	149 (49.7%)
AKOKA	62 (20.7%)	70 (23.4%)	11 (3.7%)	2 (0.7%)	1 (0.3%)	146 (48.7%)
TOTAL	150 (50.0%)	127 (42.3%)	13 (4.3%)	4 (1.3%)	1 (0.3%)	295 (98.3%)

Table 3: I Make Use of the Social Media Such as Facebook, 2go and Whatsapp

Table 3 and Fig. 2 shows 277 (92.3 per cent) respondents, 145 (48.3 per cent) from AOCOED and 132 (44.1 per cent) from AKOKA, using social media such as Facebook, 2go and WhatsApp. Five (1.6 per cent) respondents, two (0.7 per cent) from AOCOED and three (1 per cent) from AKOKA, did not, and 13 (4.3 per cent), two (0.7 per cent) from AOCOED and 11 (3.7 per cent) from AKOKA, were undecided. The finding reveals that Internet users in the colleges used social media.

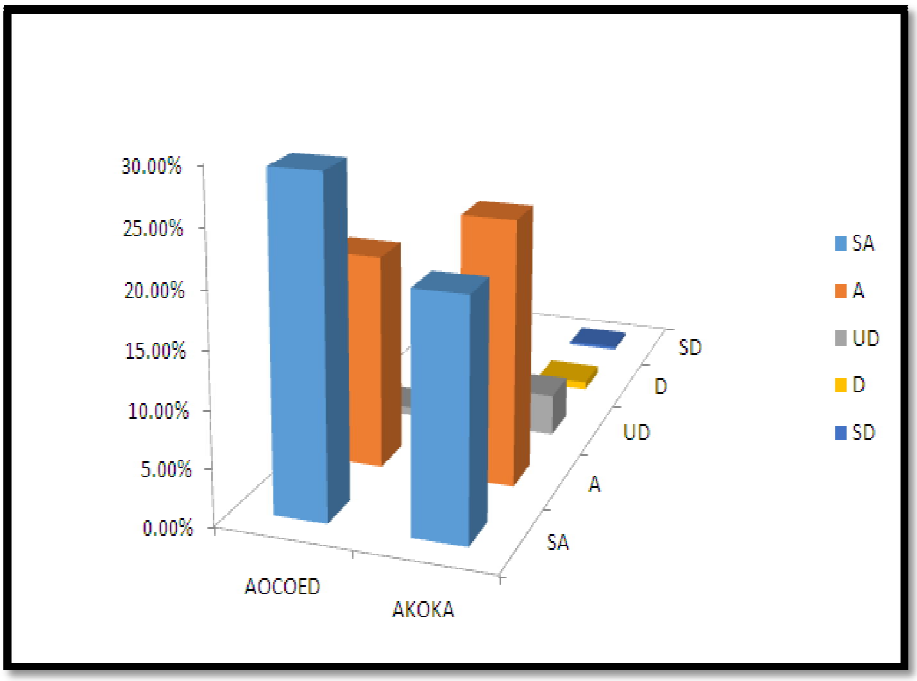

Figure 2: I Make Use of Social Media Such as Facebook, 2go and Whatsapp

College	SA	A	UD	D	SD	Total
AOCOED	48 (16.0%)	45 (15.0%)	15 (5.0%)	30 (10.0%)	12 (4.0%)	150 (50.0%)
AKOKA	45 (15.0%)	31 (10.3%)	24 (8.0%)	15 (5.0%)	35 (11.7%)	150 (50.0%)
TOTAL	93 (31.0%)	76 (25.3%)	39 (13.0%)	45 (15.0%)	47 (15.7%)	300 (100.0%)

Table 4: I Use the Internet More for Social Purposes than for Academic Ones

The data in Table 4 and Fig. 3 helps establish whether respondents used the Internet more for social or for academic purposes. The data shows 169 (56.3 per cent) respondents using the Internet predominantly for the former, 93 (31 per cent) from AOCOED and 76 (25.3 per cent) from AKOKA. 92 (30.7 per cent) respondents, 42 (14 per cent) from AOCOED and 50 (16.7 per cent) from AKOKA, did not, while 39 (13 per cent), 15 (5 per cent) from AOCOED and 24 (8 per cent) from AKOKA, could not decide. Although the greater proportion of respondents claimed to use Internet technologies less for educational purposes than social ones, the degree of difference suggests that greater attention must be paid to encouraging more people to use the Internet to advantage for educational purposes.

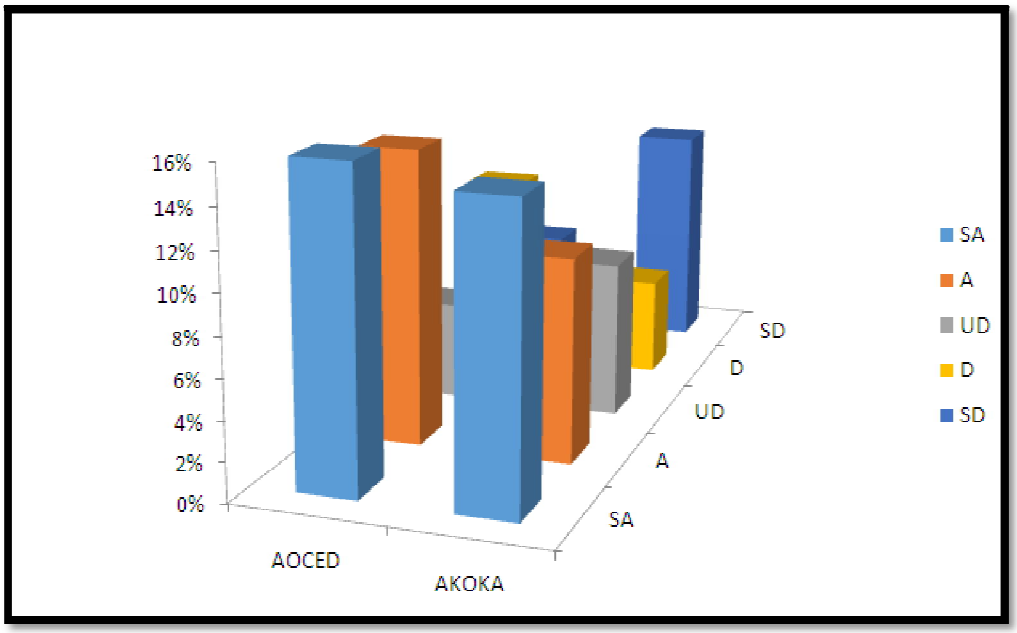

Figure 3: I Use the Internet More for Social Purposes than for Academic Ones

College	SA	A	UD	D	SD	Total
AOCOED	45 (15.0%)	31 (10.3%)	14 (4.7%)	43 (14.3%)	17 (5.7%)	150 (50.0%)
AKOKA	31 (10.3%)	51 (17.0%)	22 (7.3%)	29 (9.7%)	17 (5.7%)	150 (50.0%)
TOTAL	76 (25.3%)	82 (27.3%)	36 (12.0%)	72 (24.0%)	34 (11.3%)	300 (100.0%)

Table 5: My Lecturers Use ICT and the Internet in Teaching Us in the Classroom

Table 5 and Fig. 4 show that 158 (52.6 per cent) respondents, 76 (18.3 per cent) from AOCOED and 82 (27.3 per cent) from AKOKA, saw lecturers using ICT and the Internet in classroom teaching, that 106 (35.3 per cent) (60 (20 per cent) from AOCOED and 46 (15.4 per cent) from AKOKA) disagreed, and that 36 (17 per cent) (14 (4.7 per cent) from AOCOED and 22 (7.3 per cent) from AKOKA) were undecided. The majority of the respondents from the two colleges confirmed that their lecturers used the Internet to teach in the classroom, but the percentage of those agreeing with the statement (52.6 per cent) and those disagreeing (35.3 per cent) draws attention to the serious attention that must be paid to encouraging the use of these technologies in the classroom. This can be achieved by the provision and improvement of facilities.

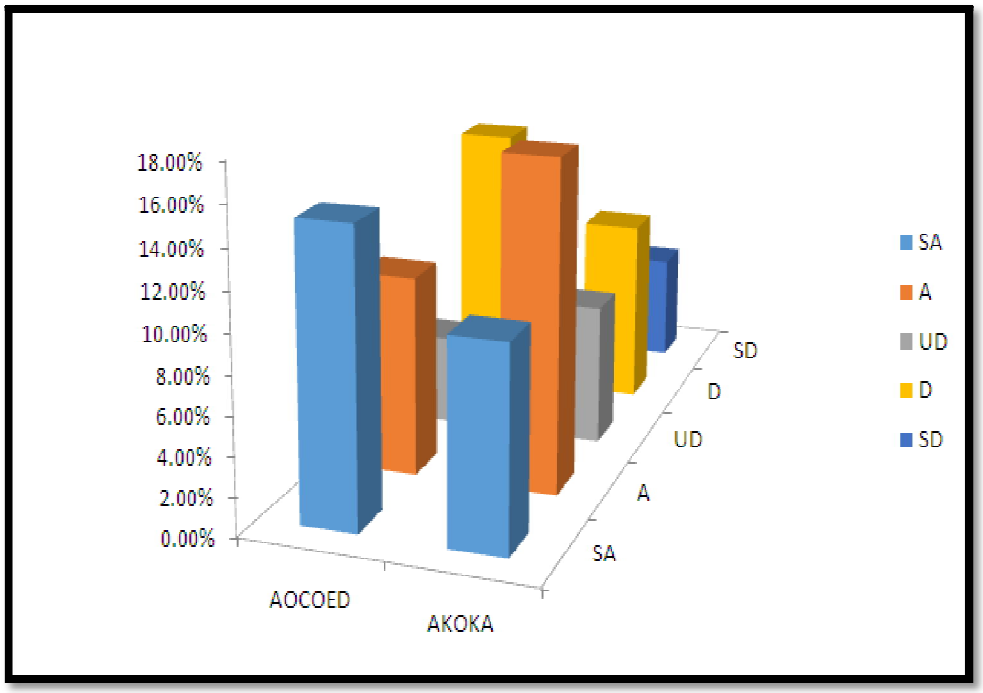

Figure 4: My Lecturers Use ICT and the Internet in Teaching Us in the Classroom

College	SA	A	UD	D	SD	Total
AOCOED	42 (14.0%)	43 (14.3%)	20 (6.7%)	26 (8.7%)	19 (6.3%)	150 (50.0%)
AKOKA	35 (11.7%)	39 (13.0%)	31 (10.3%)	25 (8.3%)	20 (6.7%)	150 (50.0%)
Total	77 (25.7%)	82 (27.3%)	51 (17.0%)	51 (17.0%)	39 (13.0%)	300 (100.0%)

Table 6: My Lecturers Use Internet Facilities for Students' Academic Work

Table 6 and Fig. 5 shows that 159 (53 per cent) respondents comprising 85 (28.3 per cent) from AOCOED and 74 (24.7 per cent) from AKOKA agree with the statement, 90 (30 per cent) consisting of 45 (15 per cent) from AOCOED and 45 (15 per cent) from AKOKA disagree and 51 (17 per cent) were undecided. The finding reveals a close relationship between the responses to this item from the two colleges, regarding both those who agreed and those who disagreed. Although there is a wide margin between them, the fact that the latter could form as great a proportion as 30 per cent draws attention to the need to increase efforts to make learning fully technologically-driven.

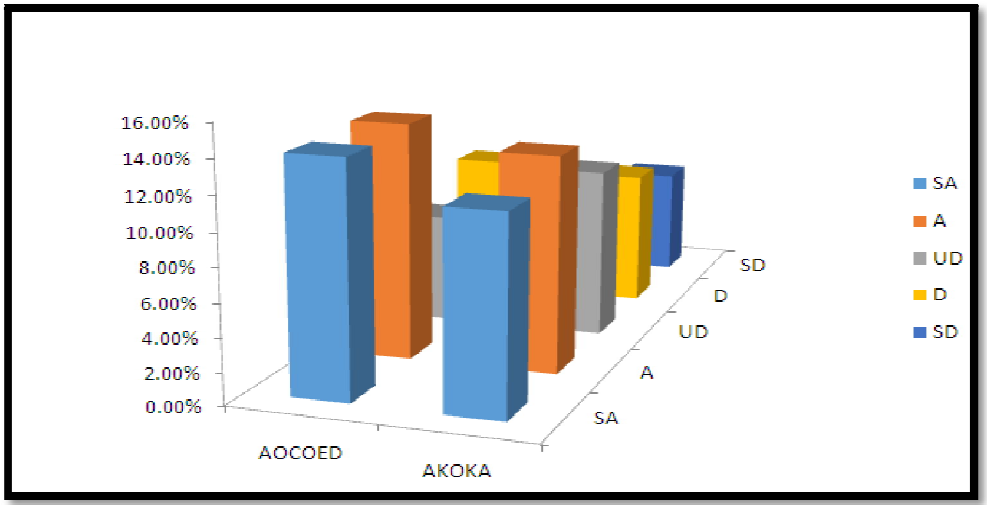

Figure 5: My Lecturers Use Internet Facilities For Students' Academic Work

2.2. Research Question Two

2.2.1. What Factors Determine the Use Made by Teachers in Colleges of Education of Internet Technologies in Their Teaching?

2.2.1.1. Interview Question 3: How in Your View Can Teachers' Use of Internet Technologies Be Measured? Suggest Ways in Which Teachers Can Be Encouraged to Use Internet Technologies in the Classroom.

This question was intended to generate responses to Interview Question 3. 10 major themes emerged from the responses: academic confidence, technological confidence, motivation and commitment, curriculum, pedagogical model, teaching and learning activities, localization, and faculty support for students, support for the faculties, and the roles of teacher and student.

S/N	Emergent Themes	Akoka Interviewee Responses	Aocoed Interviewee Responses
1	Academic confidence This refers to scholarly attainment resulting in actions informed by knowledge, cognitive knowledge. Knowledge stimulating further scholarly active roles in academic contributions.	20	18
2	Technological confidence This refers to scholarly attainment resulting in actions informed by knowledge, cognitive knowledge. Knowledge stimulating further scholarly active roles in academic contributions.	20	19
3	Motivation and commitment This refers to the incentives given to users that can encourage them to use the technologies .e.g. for student easy access and for lecturer's enhanced facilities, training opportunities.	20	20
4	Curriculum This refers to the need for redesigning of course curriculum in a way that it can incorporate the learning and acquisition of ICT knowledge enabling the learners to operate at global standard.	12	17

S/N	Emergent Themes	Akoka Interviewee Responses	Aocoed Interviewee Responses
5	Pedagogical model This refers to learning approaches and teaching methods used as measures in developing the teaching and learning styles. It incorporates the philosophy of educational and informs by the government educational policy.	18	18
6	Teaching and learning activities This embraces all activities within and outside the classroom that is done to facilitate learners' acquisition of knowledge.	20	18
7	Localization This refers to the physical setting of the Internet practice. What are the culture, values norms and traditions of the place and how supportive is it for Internet use.	20	20
8	Faculty support for students The faculty provision of easy access to the Internet and ICT support for learners.	20	18
9	Support for the faculties This embraces both internal contributions from the college and external from the private sectors, non-government bodies (NGO) towards faculties efforts in providing easy access to the 'web '.	20	18
10	Roles of teachers and students This refers to social expectations from the lecturers and their students in tertiary institutions. Looking at the peculiarities of the colleges of education.	18	19

Table 7: Measures for Encouraging Teachers' Use of Internet Technologies in Class

Table 7. Presents the interviewees' responses to Research Question 3 The qualitative research instrument of the interview question was used. The data were analyzed using TA, and ten themes emerged. The instrument attempted to discover the measures required to encouraging teachers' use of the Internet in colleges of education. All 20 interviewees in AKOKA and 18 in AOCOED prescribed academic confidence on the part of the teachers. Their argument was that, before they use the Internet in class, teachers must first ensure their mastery of the subject matter. Only then will they be able to identify where and when to apply the technology for optimal gain to the learning process. Closely related to this is the theme of technical confidence: all 20 interviewees from AKOKA advocated this, as did 19 from AOCOED. The strength of this theme lies in the observation that the more the technology is used, the more proficient users become and the more they are encouraged to use it. This theme is closely linked to another, that of motivation and commitment. This addresses the issue of encouragement and the need for all players to make their contribution to transforming Internet technologies into powerful tools for improving learning. This theme was expressed by all 40 interviewees.

Also established is the theme of curriculum, identified from the responses of 12 interviewees in AKOKA and 17 in AOCOED, all of whom were of the opinion that the current curriculum does not prepare learners to use the technologies. They called for the replacement of the current curriculum for a new one that would make learning technology-driven. The theme of the pedagogical model that was expressed by 36 interviewees, 18 from each college, addresses the teaching approach, exploring the methodology adopted and the extent to which it accommodates the use of the Internet. This theme is closely related to that of teaching and learning activities, with 20 interviewees in AKOKA and 18 in AOCOED calling for a change in approach, which does not currently incorporate the use of Internet technologies, to one that is technology-driven. Also identified were the themes of support, first for the students and secondly for the faculties. Incidentally, the interviewees' responses regarding the two themes in AKOKA were the same: all 20 were of the opinion that support in those two areas should be considered. In AOCOED, however, there were two dissenting voices who argued that the users of the technology need to be self-motivated first, and that this would encourage support. The theme of the role of teachers and students simply means that teachers and students play key roles in efforts to drive Internet technologies. This is reflected in the responses of 18 interviewees in AKOKA and 19 in AOCOED.

The quantitative data that provide answers to this research question use the responses to items 4, 9, 13, 15 and 22 in the questionnaire. The data were analyzed and presented, and are discussed below.

College	SA	A	UD	D	SD	Total
Aocoed	93 (31.0%)	45 (15.0%)	5 (1.7%)	5 (1.7%)	2 (0.7%)	150 (50.0%)
Akoka	92 (30.7%)	46 (15.4%)	10 (3.3%)	-	-	148 (49.3%)
Total	185 (61.7%)	91 (30.3%)	15 (5.0%)	5 (1.7%)	2 (0.7%)	298 (99.3%)

Table 8: The Internet Helps Me Achieve More in My Studies

Table 8 and Fig. 6 shows 276 (92 per cent) respondents consisting of 138 ((46 per cent) each from AOCOED and AKOKA agreeing with the statement, seven (2.4 per cent) from AOCOED and no one from AKOKA disagreeing, and 15 (5 per cent), with five (1.7 per cent) from AOCOED and 10 (3.3 per cent) from AKOKA, remaining undecided. There is a markedly similar pattern in the positive responses in both colleges and the complete absence of disagreement in AKOKA. This finding demonstrates that the Internet's potential for the colleges is acknowledged. However, the fact that there are still respondents who could not decide is an indication of the need for more effort to ensure that everyone in both colleges embraces Internet use.

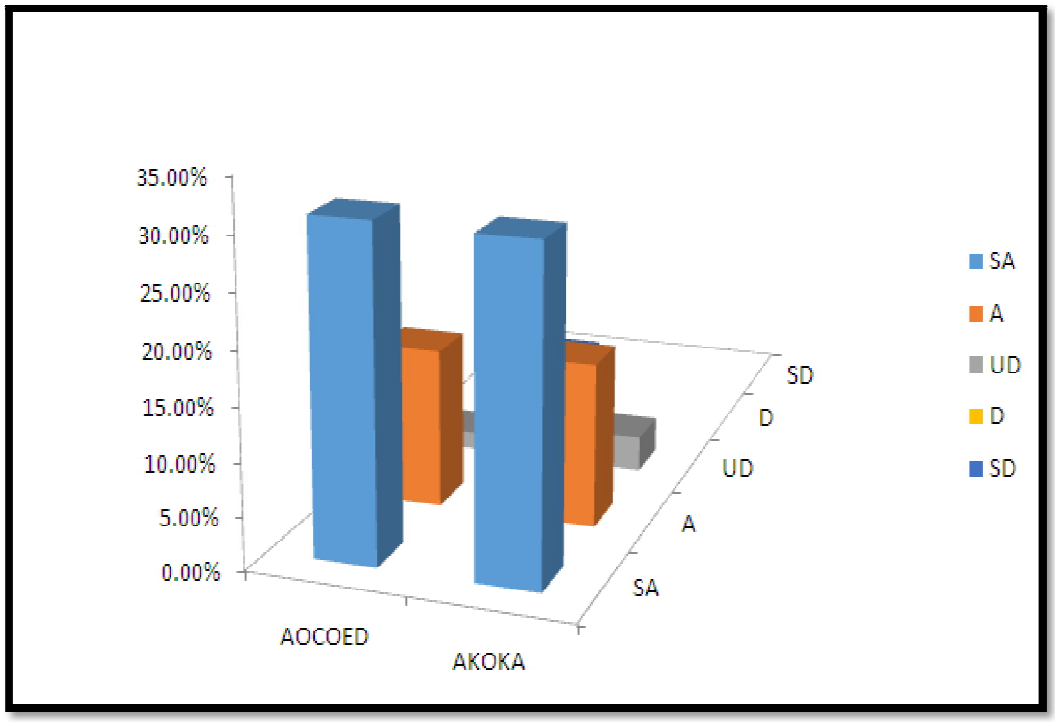

Figure 6: The Internet Helps Me Achieve More in My Studies

College	SA	A	UD	D	SD	Total
AOCOED	68 (22.7%)	51 (17.0%)	11 (3.7%)	11 (3.7%)	9 (3.0%)	150 (50.0%)
AKOKA	43 (14.3%)	53 (17.7%)	21 (7.0%)	10 (3.3%)	23 (7.7%)	150 (50.0%)
Total	111 (37.0%)	104 (34.7%)	32 (10.7%)	21 (7.0%)	32 (10.7%)	300 (100.0%)

Table 9: The Inadequacies of Internet-Based Facilities Affect the Use of the Internet for Academic Work in My College

Table 9 and Fig. 7 show that 215 (71.7 per cent) respondents comprising 119 (39.7 per cent) in AOCOED and 96 (22 per cent) in AKOKA agree with the statement, with 53 (17.7 per cent), 20 (6.7 per cent) from AOCOED and 33 (11 per cent) in AKOKA, disagreeing. 32 (10.7 per cent), 11 (3.7 per cent) from AOCOED and 21 (7.0 per cent) from AKOKA, were undecided. The findings show that more efforts must be directed at providing facilities in the colleges if the use of the Internet is to be encouraged.

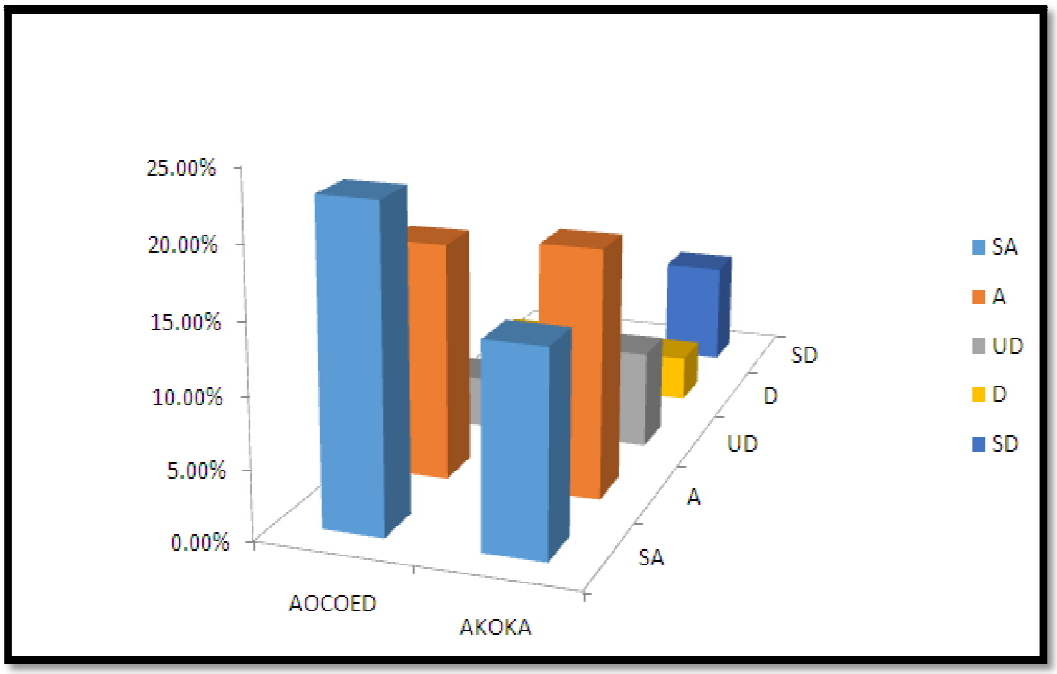

Figure7: The Inadequacies of Internet-Based Facilities Affect the Use of the Internet for Academic Work in My College

College	SA	A	UD	D	SD	Total
AOCOED	53 (17.7%)	31 (10.3%)	30 (10.0%)	28 (9.3%)	8 (2.7%)	150 (50.0%)
AKOKA	37 (12.3%)	39 (13.0%)	16 (5.3%)	25 (8.3%)	16 (5.3%)	133 (44.3%)
TOTAL	90 (30.0%)	70 (23.3%)	46 (15.3%)	53 (17.7%)	24 (8.0%)	283 (94.3%)

Table 10: There Are Enough ICT and Internet Facilities for the Use of Lecturers

According to the data in Table 10 and Fig. 8, a total of 160 (53.3 per cent) respondents, 84 (18 per cent) from AOCOED and 76 (25.3 per cent) from AKOKA, agreed with the statement, 77 (25.7 per cent) (36 (12 per cent) from AOCOED and 41 (13.6 per cent) from AKOKA) disagreed and 46 (15.3 per cent) (30 (10 per cent) from AOCOED and 16 (5.3 per cent) from AKOKA) remained undecided. The 53.3 per cent who agreed, as against the combined total of the others, 41.3 per cent, shows a slight difference, revealing that concerted efforts must be made to provide adequate facilities for the colleges if the educational use of Internet technologies is to be encouraged.

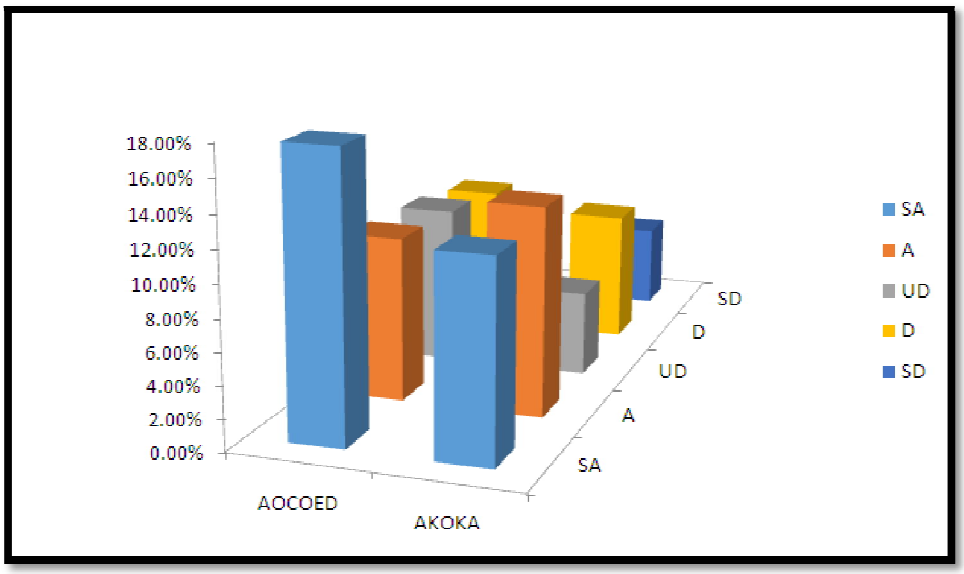

Figure 8: There Are Enough ICT and Internet Facilities for the Use of Lecturers

College	SA	A	UD	D	SD	Total
AOCOED	70 (23.3%)	57 (19.0%)	8 (2.7%)	6 (2.0%)	9 (3.0%)	150 (50.0%)
AKOKA	66 (22.0%)	56 (18.7%)	16 (5.3%)	1 (0.3%)	2 (0.7%)	141 (47.0%)
TOTAL	136 (45.3%)	113 (37.7%)	24 (8.0%)	7 (2.3%)	11 (3.7%)	291 (97.0%)

Table 11: The Internet Has Made the Roles of Teachers and Learners Flexible

Table 11 and Fig. 9 show that the majority of respondents from the two colleges – 249 (83 per cent), comprising 127 (42.3 per cent) from AOCOED and 122 (40.7 per cent) from AKOKA – agreed with the statement, 18 (6 per cent) (15 (8 per cent) from AOCOED and three (1 per cent) from AKOKA) disagreed and 24 (8 per cent) (eight (2.7 per cent) from AOCOED and 16 (5.3 per cent) from AKOKA) were undecided. Although the balance of the responses in agreement are similar, the higher proportion of those who remained undecided than who disagreed indicates a lack of understanding of the technology. The finding, however, affirms the statement that that the Internet has made the roles of teachers and learners flexible.

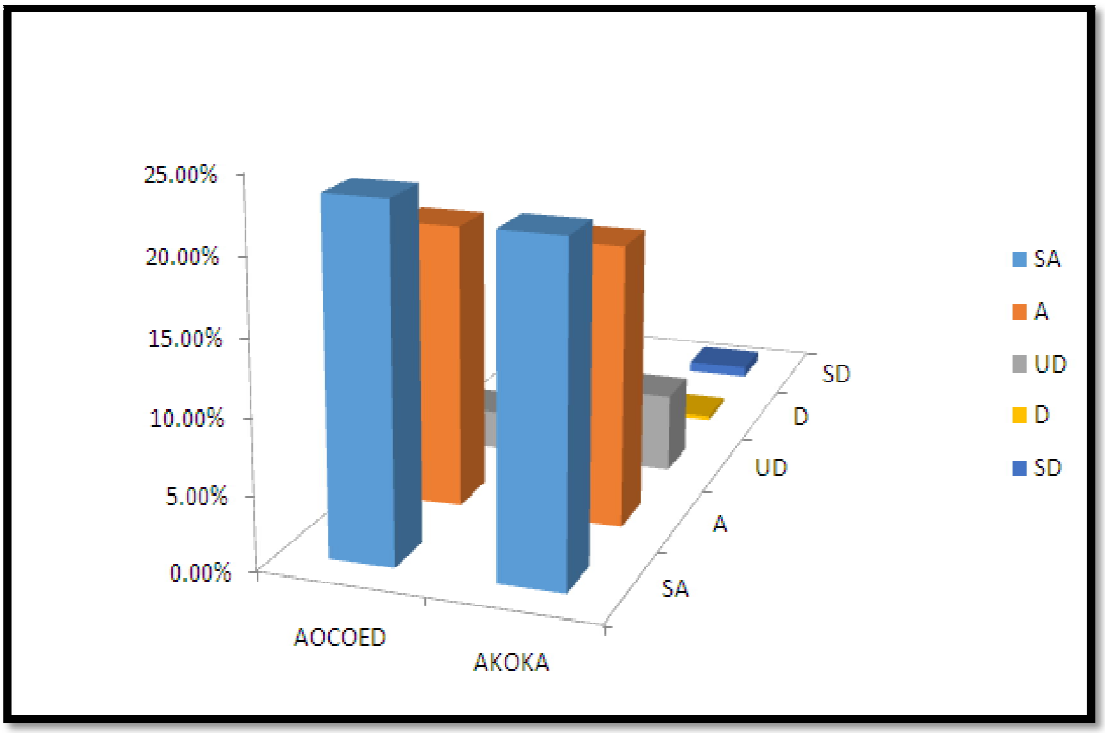

Figure 9: The Internet Has Made the Roles of Teachers and Learners Flexible

School	SA	A	UD	D	SD	Total
AOCOED	83 (27.7%)	48 (16.0%)	11 (3.7%)	3 (1.0%)	5 (1.7%)	150 (50.0%)
AKOKA	52 (17.3%)	56 (18.7%)	24 (8.0%)	6 (2.0%)	4 (1.3%)	142 (47.3%)
TOTAL	135 (45.0%)	104 (34.7%)	35 (11.7%)	9 (3.0%)	9 (3.0%)	292 (97.3%)

Table 12: The More I Use ICT and the Internet, the Better I Become and the More I Want to Apply the Technology

Table 12 and Fig. 10 show that 239 (79.7 per cent) respondents, 131 (43.7 per cent) from AOCOED and 108 (36 per cent) from AKOKA, agreed with the statement, 18 (6 per cent) (eight (2.7 per cent) from AOCOED and 10 (4.3 per cent) from AKOKA) disagreed, and 35 (11.7 per cent), 11 (3.7 per cent) from AOCOED and 24 (8 per cent) from AKOKA, were undecided. The findings also show a similar pattern in A and SA responses, which are together overwhelming. Again, the fact that the percentage of respondents who could not decide is higher than those who disagreed implies that awareness must be raised in order to encourage more users to use the technologies for learning.

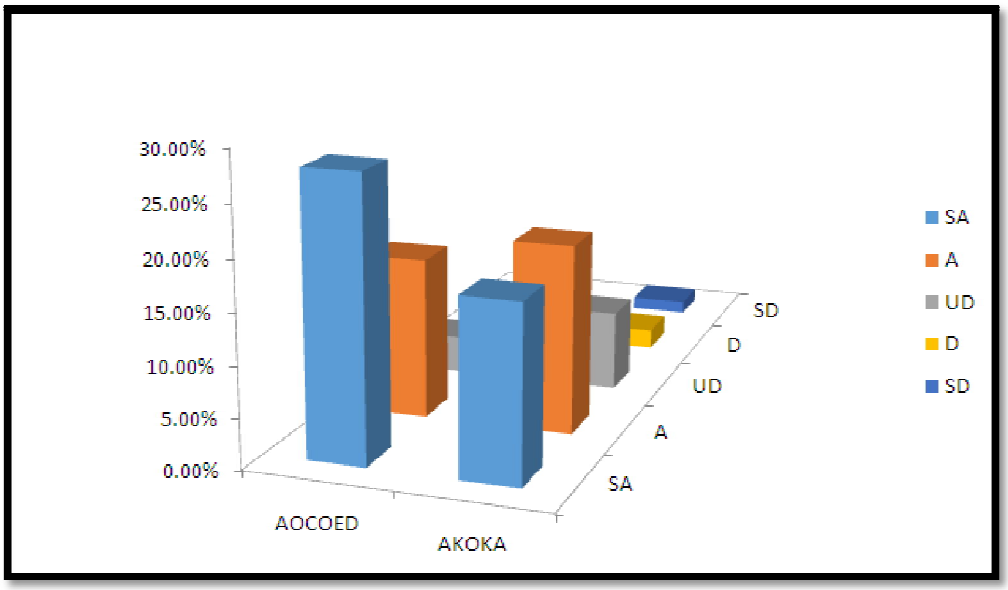

Figure 10: The More I Use ICT and the Internet, the Better I Become and the More I Want to Apply the Technology

2.3. Research Question Three

2.3.1. What Factors Determine the Use Made of Internet Technologies by Students in Colleges of education in Their Studies?

The qualitative data that will be analyzed and discussed to provide an answer to this research question are provided by the responses to Interview Question 4. The data can be seen as supporting Social Determinism, which argues that Internet technologies, if properly modelled by society, have the potential to combat the myriad challenges confronting education in the developing world, and transforming learning processes into lifelong activities capable of supporting the rapid technological, social and economic transformations that obtain in technologically advanced societies.

2.3.2. Interview Question 3

2.3.2.1. How Do You Think Students Can is encouraged to Use Internet Technologies for Their Academic Studies? Suggest the Various Ways That Can be Used to Encourage Students to Use Internet Technologies in Their Learning.

The following themes emerged from the analyses of the data generated from the responses to the interview question: motivation and commitment, teaching and learning activities, faculty support for students, support for the faculties themselves, knowledge management, access, cost, and software interface design. These eight themes were identified with regard to the method of encouraging students by facilitating Internet use for educational purposes.

S/N	Emergent Themes	Akoka Interviewee Responses	Aocoed Interviewee Responses
1	Motivation and commitment This refers to the incentives given to users that can encourage them to use the technologies, e.g. to facilitate student access and to enhance lecturer's facilities and training opportunities.	20	19
2	Teaching and learning activities This embraces all activities within the institutions chosen as case studies. It refers to the incentives that encourage people to use the technologies, e.g. to facilitate student access and to enhance lecturer's facilities and training opportunities.	20	18
3	Faculty support for students The faculty's provision of easy access to the Internet and ICT support for learners.	20	18

S/N	Emergent Themes	Akoka Interviewee Responses	Aocoed Interviewee Responses
4	Support for the faculties This embraces both internal contributions from the college and external ones from the private sector and NGOs towards the faculties' own efforts to provide easy access to the Web.	20	18
5	Knowledge management This refers to the administrative and management style adopted by institutions, and the extent to which that administrative style and approach supports the educational use of Internet technologies.	20	20
6	Access This refers to the availability of the necessary infrastructure and facilities as well as the adequacy of resources that ensure the easy use of Internet technologies.	18	20
7	Cost This refers to the financial implications for accessing the Internet, irrespective of whether it is the individual, the college or the government that bears those costs.	15	18
8	Software interface design This refers to the available infrastructures (hardware and software) and other facilities available to ensure ease of access to the Internet. This is with emphasis on their adequacy and sophistication.	11	18

Table 13: Responses on Ways of Encouraging Students' Use of Internet Technologies

Table 13 presents the data collected using the qualitative method to answer Research Question 3 using the interview schedule as the instrument. The outcome is analyzed below.

The theme of motivation and commitment addresses the issues of encouragement and the need for all parties to help realize the potential of Internet technologies to improve learning by transforming it into a lifelong activity. This theme emerged in the data collected from all 40 interviewees, 20 from each college, all of whom identified motivation as a necessary impetus for commitment. The argument here however is that students will be encouraged to use the Internet once there is an enabling environment that can stimulate such use. The second theme, that of teaching and learning activities, sees 20 interviewees in AKOKA and 18 in AOCOED calling for a change in the current approach, which does not incorporate the use of Internet technologies, to one that is technology-driven. Also identified are the themes of support, first for students and secondly for the faculties. Incidentally, the responses to the two themes in AKOKA were the same: all 20 interviewees were of the opinion that support in those two areas should be considered. In the colleges, however, there were two dissenting voices, who argued that the users of the technology first needed to be self-motivated, and it was this that would encourage support. The theme of knowledge management emerged in the responses of the 40 interviewees in the two colleges. It explores the philosophies underlying the colleges' management. A management approach and its attendant priorities will play key roles in their approach to the use of Internet technologies in the colleges. When it comes to the factors that can encourage students' use of the Internet, the theme of access emerged from 18 responses in AKOKA and all 20 in AOCOED. The theme of cost emerged from 15 interviewees in AKOKA and 18 in AOCOED, and that of software interface design from 11 in AKOKA and 18 in AOCOED. A closer examination of the data shows that shows that the interviewees in AOCOED gave serious consideration to changing technologies, as they resided in the outskirts of the city, which has less access to high quality facilities than does its equivalent in AKOKA, in the city centre. This is reflected in their responses, with 11 in AKOKA and 18 in AOCOED. As regards the cost of accessing the Internet, 15 interviewees in AKOKA considered it crucial, along with 18 from AOCOED. The implication is that the cost is lower in the city than in rural areas, where the facilities are also mostly inadequate.

In providing quantitative data to answer the research question, respondents' responses to items 3, 7, 12, 23 and 24 in the questionnaire were analyzed, and are presented and discussed below.

College	SA	A	UD	D	SD	Total
AOCOED	82 (27.4%)	60 (20.0%)	5 (1.7%)	2 (0.7%)	1 (0.3%)	150 (50.0%)
AKOKA	55 (18.4%)	78 (26.0%)	12 (4.0%)	4 (1.3%)	1 (0.3%)	150 (50.0%)
TOTAL	137 (45.7%)	138 (46.0%)	17 (5.7%)	6 (2.0%)	2 (0.7%)	300 (100.0%)

Table 14: The Use of ICT Facilities Complements My Lectures, Library Research and Books

The data in table 14 and Fig. 11 show that a total of 275 (91.7 per cent) respondents comprising 142 (47.4 per cent) from AOCOED and 133 (44.4 per cent) from AKOKA agreed with the statement, eight (2.7 per cent) (three (1 per cent) from AOCOED and five (1.6 per cent) from AKOKA) disagreed, and 17 (5.7 per cent) (five (1.7 per cent) from AOCOED and 12 (4 per cent) from AKOKA) were undecided. The findings show that respondents' views on Questionnaire Item 3 overwhelmingly support the educational use of the Internet, but the higher proportion of those who could not decide over those who disagreed indicates that more is needed to enlighten users on the Internet's potential.

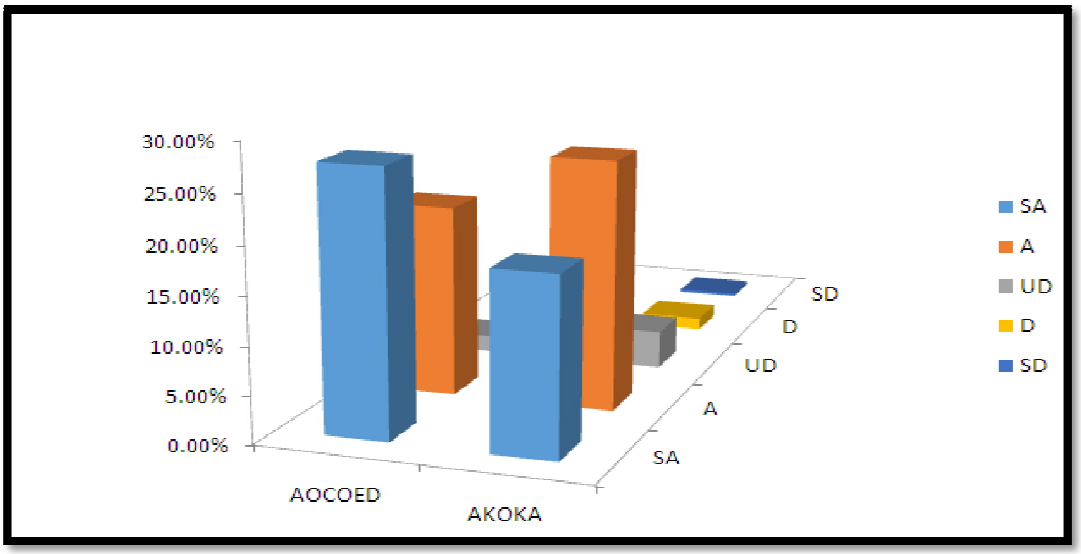

Figure 11: The Use of ICT Facilities Complements My Lectures, Library Research and Books

College	SA	A	UD	D	SD	Total
AOCOED	65 (21.7%)	58 (19.3%)	15 (5.0%)	9 (3.0%)	3 (1.0%)	150 (50.0%)
AKOKA	53 (17.7%)	69 (23.0%)	16 (5.3%)	11 (3.7%)	-	149 (49.7%)
TOTAL	118 (39.3%)	127 (42.3%)	31 (10.3%)	20 (6.7%)	3 (1.0%)	299 (99.7%)

Table 15: My Proficiency in Computer Skills Enhances My Internet Use

Table 15 and Fig. 12 shows that 245 (81.6 per cent) respondents comprising 123 (41 per cent) from AOCOED and 122 (40.7 per cent) from AKOKA agreed with the statement, 23 (7.7 per cent) (consisting of 12 (4 per cent) from AOCOED and 11 (3.7 per cent) from AKOKA) disagreed, and 31 (10.3 per cent), with 15 (5 per cent) from AOCOED and 16 (5.3 per cent) from AKOKA, were undecided. Similarities are noticeable between the two colleges, in both agreement and disagreement patterns. However, the UD returns raises further concerns about the necessity for a programme of action to educate users in the colleges on the potential of the technologies, especially for learning.

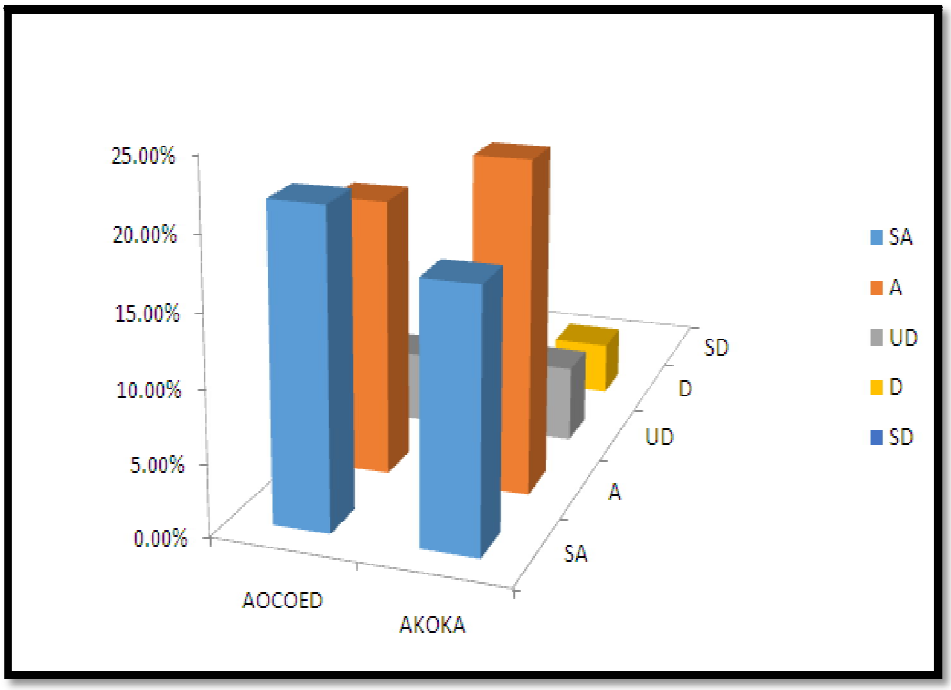

Figure 12: My Proficiency in Computer Skills Enhances My Internet Use

College	SA	A	UD	D	SD	Total
AOCOED	46 (15.3%)	47 (15.7%)	26 (8.7%)	23 (7.7%)	8 (2.7%)	150 (50.0%)
AKOKA	47 (15.7%)	70 (23.3%)	16 (5.3%)	12 (4.0%)	5 (1.7%)	150 (50.0%)
TOTAL	93 (31.0%)	117 (39.0%)	42 (14.0%)	35 (11.7%)	13 (4.3%)	300 (100.0%)

Table 16: The Majority of My Lecturers Are Proficient In Internet and ICT Use

Table 16 and Fig. 13 show 210 (70 per cent) respondents comprising 93 (31 per cent) from AOCOED and 117 (39 per cent) from AKOKA agreeing with the statement, 48 (16 per cent) (31 (10.4 per cent) from AOCOED and 17 (5.7 per cent) from AKOKA) disagreeing, and 42 (14 per cent), made up of 26 (6.7 per cent) from AOCOED and 16 (5.3 per cent) from AKOKA, remaining undecided. The responses from the two colleges were similar, with overwhelming numbers of respondents supporting the statement, while the number of those who disagreed was lower than those who could not decide. This further reveals the need for education to enhance users' understanding in order to encourage the use of the Internet for learning.

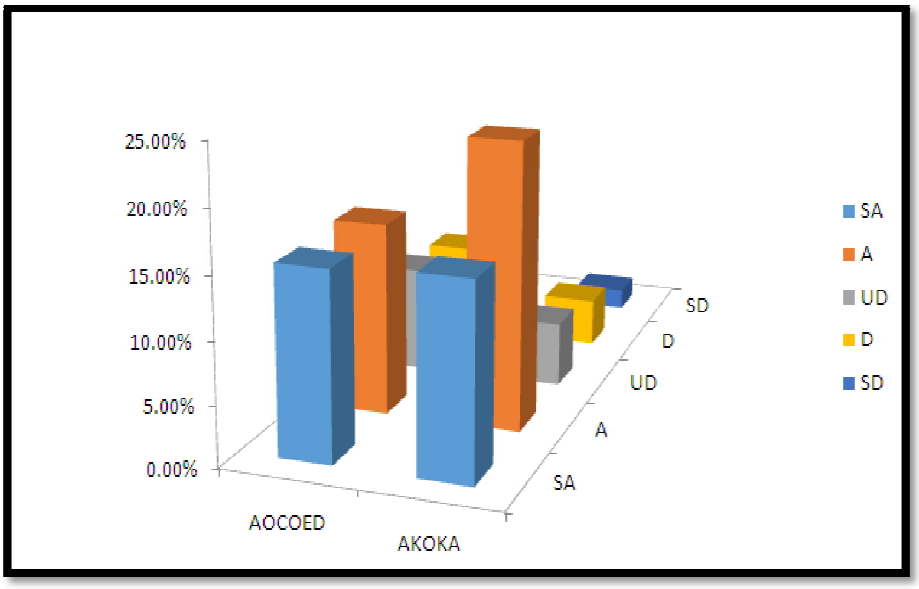

Figure13: The Majority of My Lecturers are Proficient in Internet and ICT Use

College	SA	A	UD	D	SD	Total
AOCOED	74 (24.7%)	52 (17.3%)	18 (6.0%)	2 (0.7%)	4 (1.3%)	150 (50.0%)
AKOKA	59 (19.7%)	73 (24.3%)	14 (4.7%)	4 (1.3%)	-	150 (50.0%)
TOTAL	133 (44.3%)	125 (41.7%)	32 (10.7%)	6 (2.0%)	4 (1.3%)	300 (100.0%)

Table 17: The More I Realize the Internet's Potential, the Easier It Becomes For Me to Use It to Accomplish Academic Tasks and Achieve Goals

Table 17 and Fig. 14 show that 258 (86 per cent) respondents, 124 (42 per cent) from AOCOED and 132 (44 per cent) from AKOKA, agreed with the statement, 10 (3.3 per cent), six (2 per cent) from AOCOED and four (1.3 per cent) from AKOKA, disagreed and 32 (10.7 per cent) (18 (6 per cent) from AOCOED and 14 (4.7 per cent) from AKOKA) were undecided. Again, the response pattern remains similar between the colleges, with the numbers of those who could not decide greater than those who disagreed. This problem can only be addressed by an education programme for users. The finding reveals the users' awareness of the Internet's potential; their desire to exploit its capabilities is evidence of its stimulating effects.

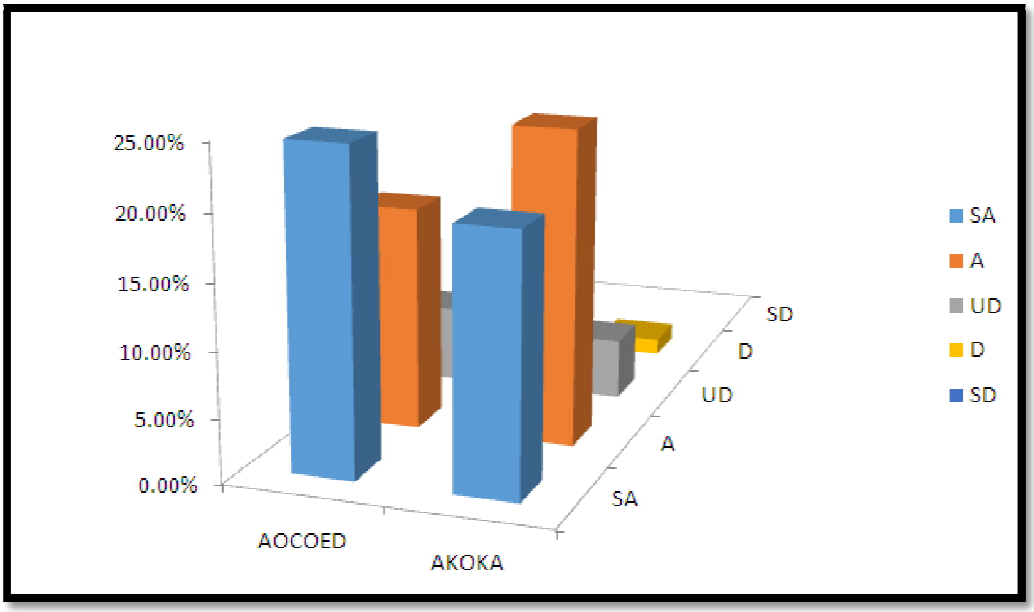

Figure 14: The More I Realize the Internet's Potential, the Easier It Becomes for Me to Use It to Accomplish Academic Tasks and Achieve Goals

College	SA	A	UD	D	SD	Total
AOCOED	73 (24.3%)	41 (13.7%)	18 (6.0%)	13 (4.3%)	5 (1.7%)	150 (50.0%)
AKOKA	53 (17.7%)	66 (22.0%)	26 (8.7%)	5 (1.7%)	-	150 (50.0%)
TOTAL	126 (42.0%)	107 (35.7%)	44 (14.7%)	18 (6.0%)	5 (1.7%)	300 (100.0%)

Table 18: Knowledge of Internet Technologies Acquired by Students Will Help Them Carry Out Other ICT-Related Tasks

Table 18 and Fig. 15 show that 233 (77.7 per cent) respondents comprising 114 (38 per cent) from AOCOED and 119 (39.7 per cent) from AKOKA agreed with the statement, 23 (7.7 per cent) comprising 18 (6 per cent) from AOCOED and five (1.7 per cent) from AKOKA disagreed, and 44 (14.7 per cent), 18 (6 per cent) from AOCOED and 26 (8.7 per cent) from AKOKA, were undecided. The responses from the two colleges shows the familiar pattern of massive support for the statement and the UDs outnumbering those who disagreed. This finding reveals that the users in this environment are familiar with the technology's potential and consider it helpful.

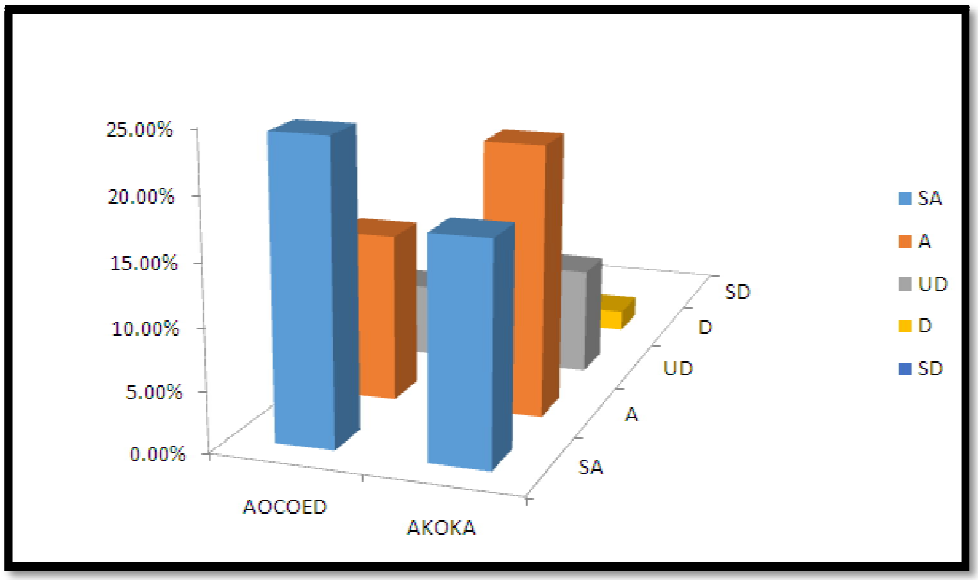

Figure 15: Knowledge of Internet Technologies Acquired by Students Will Help Them Carry Out Other ICT-Related Tasks

3. Research Results and Discussion of Findings

The results of the data analysis in this study align with ongoing efforts to dispel the myth that Internet technologies provide solutions to all problems (Curran et al,2012; McChesney,2013). The findings confirm the existence of Internet technologies in Nigerian colleges of education, even though they are constrained by some social factors. This is not peculiar to Nigerian society, but is associated with the dialectics of struggle between social changes and the challenges associated with such changes (Zittrain,2008; Morozov,2011). It also shows that the Internet is used by students and lecturers for both social and academic purposes (James,2014). However, the findings show that Internet technologies are currently used more for social than educational activities (Jordan,2015). The findings from the two colleges of education chosen as case studies also clearly depict the sample population's perception of Internet technologies, as opposed to the way the world in general views them, and shows how this has inhibited the full integration of those technologies into vital sectors in Nigeria, especially the educational sector. The results identify the distinctive features of the colleges of education as a disadvantaged sector of Nigerian tertiary institutions, requiring attention in the areas of infrastructural growth and technological capacity building. The data reveals that the peculiar aspects of the existing social conditions in the respective colleges inhibit maximal gains being made from Internet technologies. These environments have a significant impact on how academics actually undertake their teaching practices, showing that no amount of professional development for individual teachers can alter an environment in which they feel stifled and unrewarded for innovative and progressive teaching. The organizational context must have support structures in place that encourage student-centered learning, where the use of the Internet is constructively and progressively aligned with teaching programs. If an institution is serious about improving the quality of education for its student body while using Internet technologies, it must adopt a professional development programme for the whole institution. In other words, institutions should have overarching integrated policies and practices in place if they are to understand the interrelatedness and the effect of any actions that are taken, whether at an individual, departmental, faculty or institutional level.

The findings help identify efforts to convert users from 'digital visitors' to 'digital natives', from disconnected to connected members of the networked world referred to as the 'global village'. The findings further show that Internet use in colleges of education has not had a transformational role in student learning. It reveals that technology is not the agent of educational change; that role is played by teaching staff. It can therefore be argued that to play its role effectively, college teachers must be aware of their own beliefs and practices concerning teaching and how these affect the experience of learners. It can be contended that even when professional development programs focus on the development and support of teachers' understanding of teaching and learning issues, they are often unable to implement innovative practices in the particular departmental and institutional context, a position strongly supported by the present findings from the two colleges. These findings show that, if the current trend in Internet use is to be shifted towards an emphasis on education, attention should be focused on the human factors that are expected to play vital roles in the drive for a greater use of Internet technologies in education than currently obtains. The findings reiterate the need for students to be given more access to Internet facilities than they are at present.

4. Conclusion and Recommendations

This paper focused on the deployment, application and use of Internet technologies in Nigeria Tertiary Institutions and identifies its potential to transform the nation's educational platform. It assesses the current level of Internet use in education and how relevant technologies are channelled towards attaining the national educational goal of an equitable distribution of quality in education and the promotion of learning opportunities. This paper uses as template the teacher training sector where it explore the implications of internet technologies on teaching and processes of learning in colleges of education, the level of availability of Internet facilities for academic purposes and also the factors motivating the use of Internet among the students. It was paramount for this kind of study to be conducted so as to determine the extent to which Internet services were available to staff and students, find out whether point of internet access influenced its usages, and determine the factors that inspires the use of the internet. The study concluded that the colleges of education should make provision for internet facilities in schools and also guide students on the use of Internet services and resources.

5. Recommendations

- The Management of colleges of education and government should as a matter of urgency made internet facility available to students and teachers. This is to enable them to carry out research and enhance effective and efficiency service delivery.
- There should be more training, awareness, exposure or workshops on the use of other search engines which are seldom or never used in the Internet to improve and enrich students and teachers search for literatures for their academic work.
- Government should provide uninterrupted power supply in libraries and higher institutions of learning.
- Efforts should be made to increase the speed of the Internet access and shorten the time it takes to view and download web pages.

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