



Gender Dimension of ICTS among University of Abuja Students

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Abstract

The paper assessed the gender dimension of ICTs among students of University of Abuja. A survey design was employed in the study. The population of the study is made up of University of Abuja Students in which ninety students were randomly chosen. Questionnaire was used to gather information from the respondents. The method of data analysis used for the study was simple percentage. Findings from the study revealed that there is disparity in the number of female and male students in ICT education in University of Abuja. It was also established that male students have the overall attainment as compared to the female students in ICT education among University of Abuja students. Recommendations were proffered among which there should be equity in the in-take of female and male students at inception, and female students should be encouraged to take ICT related courses, as this will help in equipping them and also the country as a whole towards technological advancement that the country is striving to achieve.

Keywords: ICT, Gender, Students, Knowledge, Society

1. Introduction

Specialists in gender and technology studies are familiar with the statistical picture of the under-representation of girls and women in technology related education and employment. Despite female predominance in undergraduate enrolments in many parts of the developed world (59% in Australia, 55% in North America, and greater than 50% in many European Union countries), yet, there was no significant increase in their pursuit of ICT study in tertiary education (Levy and Murname, 2006). They only account for 10-30% of students studying ICT courses and form under 20% of employees in ICT professions (Hsieh and Wang, 2007). There have been various explanations developed to account for the under-representation of girls in ICT related studies at the secondary level. These often revolve around charting gender differences in interests, motivation, experience, personality characteristics, abilities, self-efficacy, stereotypes and socialization (Miliszewska and Moore, 2010). These elements are subsequently seen to affect career choice resulting in the underrepresentation of girls and women in the ICT educational sphere and the labour market.

Recognizing the significance of education in the development of valuable Human Capital, investing in appropriate infrastructure for providing quality education to all is presently



high on the policy agenda for Nigerians. However, focus on gender-equity enabled investments is alarmingly lagging in this country. There are many arguments in support of policies leading to investment in education for girls and women. For example, a first order analysis which considers women to be equal to men in their potential contribution to the economy implies a huge untapped reservoir of talent in developing countries (Farell, Isaacs and Trucona, 2007). Further arguments on the impact of such investments can be found such as investment in female education leads to increased labour force participation and a subsequent expansion of the economy. A variety of positive health outcomes for women and their families are known to flow from increased education. Education generally leads to lower fertility rates as well as lower child mortality. As primary caregivers, women have a key role in the intergenerational transmission of knowledge.

Lina, (2003) suggests that despite the vast amounts of resources that have been invested in efforts to increase access to ICT in developing countries and among the poor, these technologies have not proven as transformative as expected. United Nation, (2002) report indicates that to harness ICT more effectively for development and poverty reduction, ICT must be mainstreamed as tools for broader strategies and programmes for building opportunity and empowering the poor. The report further states that the ICT for development agenda should identify the broader changes required in developing countries, the role ICT can have in effecting these changes, and to be more selective and strategic about the attention and resources devoted to the dissemination of these technologies (UN1995; Kozma, 2005).

2. Literature Review

Understanding the Knowledge of ICT and Society

The term Knowledge Society generally refers to a society where knowledge is the primary production resource instead of capital and labour. It may also refer to the use which a certain society gives to information: a knowledge society creates shares and uses knowledge for the prosperity and well-being of its people African Leaders in ICT, (2011). Globalization and the changing world economy are driving a transition to knowledge-based economies.

In particular, developing countries need knowledge-based economies not only to build more efficient domestic economies, but to take advantage of economic opportunities outside their own borders. In the social sphere, the knowledge society brings greater access to information and new forms of social interaction and cultural expression. Individuals therefore have more opportunities to participate in and influence the development of their societies. According to Evers (2000), Bhattacharjee and Premkumar (2004), characteristics of a knowledge society are: Its members have attained a higher average standard of education in comparison to other societies and a growing proportion of its labour force are employed as knowledge workers i.e. researchers, scientists, information specialists, knowledge managers and related workers; its industry produces products with integrated artificial intelligence; its organisations – private, government and civil society – are



transformed into intelligent, learning organisations; there is increased organized knowledge in the form of digitized expertise, stored in data banks, expert systems, organizational plans, and other media; there are multiple centers of expertise and poly-centric production of knowledge; and there is a distinct epistemic culture of knowledge production and knowledge utilization UNESCO (2004).

A knowledge society is one where growth, development, and innovation are driven by optimal use of information and information products. In knowledge societies: The agricultural and manufacturing sectors become less significant, in favour of service and knowledge-based industries; Individual opportunity is greatly increased, with mobility being significantly determined by education; Competition is greater, with enterprises being exposed to global competition and global markets; and Cooperation is an important strategy for organisations and enterprises, in markets and societies with high levels of integration and interdependence.



Figure 1: Pillars of the Knowledge Society

At the 2007 continent-wide African Knowledge Economy Forum on Utilizing Knowledge for Development, the pillars of Innovation and Science & Technology were considered to present a single pillar, which was referred to as Innovation (incorporating Science & Technology) Hooker, (2010). With regard to education, lifelong learning is regarded as a requirement to keep pace with constantly changing global job markets and technologies. Preparation for lifelong learning involves an emphasis, in primary and secondary schools, on learning general skills and competencies, such as communication, mathematics and science skills, new literacy skills, problem-solving and interpersonal skills, as well as skills needed to learn other subjects.



At tertiary level, the requirement is to build capacity in science and technology, discipline-specific skills, research, and development. Education is seen as contributing to all other sectors by providing the required skills and know-how for economic development. As such, education is not limited to formal education in traditional structures, but also encompasses the broader societal learning necessary for development. As a second pillar, ICT is considered a critical tool in preparing and educating students with the required skills for the global workplace. It educates students so that they can continually adapt to a work world of continuous technological innovations, and makes it easier for students to access knowledge. ICT is regarded as an engine for growth and tool for empowerment, with profound implications for education change and socio-economic development. Innovation, the third pillar, is seen as the means of support for development and economic functioning. It is described as a process of creation, exchange, evolution, and application of knowledge to produce new goods. It involves adapting, adopting, or using knowledge to produce new goods and services in local contexts or to advance society in general (Adams, 2015).

The concept of a 'Knowledge Society' is often confused with that of an 'Information Society' Evers, (2003). The latter is, however, considered more limited, as the application of knowledge to data creates information, and information has to be activated or generated by knowledge. Information is the codified result of observation, but knowledge entails the capacity to act Evers, (2003). The concept of 'knowledge societies' includes a dimension of social, cultural, economic, political, and institutional transformation, and a more pluralistic and developmental perspective. It is regarded as a human process Burch, (2006). UNESCO argues that progression from Information Societies to Knowledge Societies requires that 'use of ICT must be linked to the recognition that knowledge is the principal force of the social, political, cultural and institutional dimensions of development, founded on human rights UNESCO (2005).

As the status of information and knowledge are different in a knowledge-based society, the vision of what knowledge people need to acquire, and how they can acquire it, also needs to change. Knowing where knowledge is located and who has access to what kind of knowledge and why are, becoming increasingly important. Social skills and 'relationship capital' become key skills for employment in the knowledge economy. Such skills are increasingly exercised using ICT. There is thus a need to skill both the workforce and the unemployed to increase their ICT literacy. These efforts need to be an ongoing part of lifelong learning, since a dynamic and fast-changing knowledge-based society requires continuous skills updating (Punie and Cabrera, 2005; Liao, Chen & Yen, 2007).

3. Methodology

The study adopted survey method in data collection, taking 115 sample size from the target population of 5,751 students of the selected departments through a stratified sampling method. However, 25 questionnaires were either not returned or wrongly filled.



4. Results

Demographic Data

Table 1: Department of Respondents

	Frequency	Percentages (%)
<i>Location</i>		
Sociology	23	25.6
Computer Science	22	24.4
Chemistry	22	24.4
Science & Environmental Education	23	25.6
<i>Gender</i>		
Male	47	52.2
Female	43	47.8
<i>Age</i>		
16-19	15	16.6
20-23	38	42.2
24-27	23	25.6
28-above	14	15.6
<i>Marital Status</i>		
Single	65	72.2
Married	25	27.8
<i>Religion</i>		
Christian	50	55.6
Islam	40	44.4
Total	90	100

Source: Field survey, 2017

Results in Table 1 indicate that 23 (25.6%) are from department of Sociology, 22(24.4%) are from Computer Science, 22(24.4%) are Chemistry while 23 (25.6%) are from Science & Environmental Education making a total of 100 respondents. The respondents spread across different departments and faculties for effective representation.

Result in Table 1 also shows that 47 (52.2%) of respondents were males, while 43 (47.8%) were females. Each gender was fully represented in the study. For respondents age, 15 (16.6%) of the respondents are between the age range of 16-19 years, 38 (42.2%) are between the age range of 20-23 years, 23 (25.6%) are between the age of 24-27 years and 14 (15.6%) between the age range of 28 years and above. Also in Table 1 above, 65 (72.2%) respondents indicated that they were single while 25 (27.8%) respondents indicated that they were married. For religion above, 50 (55.6%) respondents are Christians while 40 (44.4%) respondents are Muslims.



Table 2: Responses to statements

Statements	Response	Frequency	Percentage
1. Does your department provide ICTs facilities for the use of the students in the department	Agree	22	24.4
	Disagree	68	75.6
2. Do you agree that female students are ICTs friendly in line with their education as compare to male students	Agree	32	35.6
	Disagree	58	64.4
3. Does the use of ICTs affect your academic performance	Agree	50	55.6
	Disagree	40	44.4
4. Have you offer any ICT related courses	Agree	90	100
	Disagree	-	-
5. As the knowledge of ICT improve your knowledge in your chosen field	Agree	47	52.2
	Disagree	43	47.8
6. Do you believe female have access to ICTs in term of infrastructure, costs, as compare to men	Agree	37	41.1
	Disagree	53	58.9
7. Do you consider female access in control/ input of ICT decision-making in education technicality as compare to male	Agree	37	41.1
	Disagree	53	58.9
8. In term of technicality of ICTs female do better than male	Agree	31	34.4
	Disagree	59	65.6
9. Education today is more of audio-visual and I believe male students supersede female students in this area	Agree	51	56.7
	Disagree	39	43.3
10. You always do more of your research work on-line without anybody assistance	Agree	38	42.2
	Disagree	52	57.8
11. You always run into problems while working on-line without anybody assistance	Agree	52	57.8
	Disagree	38	42.2
12. Your department had organized several workshops, seminars and conferences in respect of importance of ICT and Education	Agree	22	24.4
	Disagree	68	75.6
13. Indeed we are living in a global world	Agree	78	86.7
	Disagree	12	13.3
14. Internet connection in your school has good band width that enables you to surf the net easily	Agree	22	24.4
	Disagree	68	75.6
15. Some of your classes and assignments can be done on-line with ease between you and your lecturers	Agree	22	24.4
	Disagree	68	75.6
	Total	90	100

Source: Field survey, 2017

Table 2, showed that only about a quarter (24.4%) respondents agreed that their department provide ICT facilities for the use of the students in the department while three quarter (75.6%) of respondents disagreed with the statement. This implies that majority of the students of University of Abuja do not have access to adequate ICT facilities. On statement 2, the result reveals that 32(35.6) respondents agreed that female students are ICT friendly in line with their education as compared to male students while 58(64.4%) disagreed with the statement. From the Table, it can be said that female students are not faring better than



their male counterparts. On statement 3 that is “Does the use of ICTs affect your academic performance” the result shows that 50(55.6%) respondents agreed that the use of ICTs have affected their academic performance while 40(44.4%) respondents disagreed with the statement. For Respondents statement 4, findings shows that 90(100%) respondents agreed that they have offered ICT related courses while none of the respondents disagreed with the statement. Regarding the statement 5, 47(52.2%) respondents agreed that the knowledge of ICT has improved their knowledge in their chosen field while 43(47.8%) of the respondents disagreed with the statement. This implies that the knowledge of ICT has affected more students in the studies. For Statement 6, 37(41.1%) of the respondents agreed that females have access to ICTs in term of infrastructure, costs, as compare to meanwhile 53(58.9%) of the respondents disagreed with the statement. Statement 7 above 37(41.1%) respondents considered female access in control/ input of ICT decision-making in education technicality as compare to male while 53(58.9%) of the respondents disagreed with the statement.

However, for statement 8 31(34.4%) respondents agreed that in terms of technicality of ICTs, females do better than males while 53(58.9%) of the respondents disagreed with the statement. Also, Statement 9 above 51(56.7%) respondents agreed that education today is more of audio-visual and they believe male students supersede female students in this area while 39(43.3%) of the respondents disagreed with the statement. For Statement 10 38(42.2%) respondents agreed that they always do more of their research work on-line without anybody assistance while 52(57.8%) of the respondents disagreed with the statement. Statement 11 above 52(57.8%) respondents agreed that they always run into problems while working on-line without anybody assistance while 38(42.2%) of the respondents disagreed with the statement. Thus, Statement 12 above 22(24.4%) respondents agreed that their department had organized several workshops, seminars and conferences in respect of importance of ICT and Education while 68(75.6%) of the respondents disagreed with the statement. Statement 13 above 78(86.7%) respondents agreed that indeed we are living in a global world while 12(13.3%) of the respondents disagreed with the statement. On Statement 14 above 22(24.4%) respondents agreed that internet connection in their school has good band width that enables them to surf the net easily while 68(75.6%) of the respondents disagreed with the statement. Similarly Statement 15 above 22(24.4%) respondents agreed that some of their classes and assignments can be done on-line with ease between them and their lecturers while 68(75.6%) of the respondents disagreed with the statement.

Discussion of Findings

The researchers were able to administer a total of 120 questionnaires to the students of University of Abuja in four departments which include: Sociology 25.6%, SComputer Science 4.4%, Chemistry 24.4% and Science & Environmental Education 25.6%. The population comprises of both male and female of various department. 10 questionnaires were mutilated while 20 were not returned.



Research Question 1: Are there decreasing in the numbers of female students in ICT and education in the University of Abuja? From this study, the responses made to statements 3, 6, 7, 8 and 12 of the questionnaire answered research question 1 above. The responses to statements 3, 6, 7, 8 & 12 are as follows: Table 8 above shows that 50(55.6%) respondents agreed that the use of ICTs have affected their academic performance while 40(44.4%) respondents disagreed with the statement. From Table above 37(41.1%) respondents agreed that female have access to ICTs in term of infrastructure, costs, as compare to meanwhile 53(58.9%) of the respondents disagreed with the statement. From the Table 37(41.1%) respondents considered female access in control/ input of ICT decision-making in education technicality as compare to male while 53(58.9%) of the respondents disagreed with the statement. From the Table 31(34.4%) respondents agreed that in term of technicality of ICTs females do better than males while 53(58.9%) of the respondents disagreed with the statement. From the Table 22(24.4%) respondents agreed that their department had organized several workshops, seminars and conferences in respect of importance of ICT and Education while 68(75.6%) of the respondents disagreed with the statement. Thus, the responses made above showed reasons why there was decrease in the number of female students in ICT and education in University of Abuja.

Research Question 2: Why do male students have overall attainment in ICT and education in the University of Abuja? From this study, the responses made to statement 1, 9, 10, and 13 of the questionnaire answered research question 2 above. The response to statement 1, 9, 10, and 13 are as follows: Table above, showed that 22(24.4%) respondents agreed that their department provide ICTs facilities for the use of the students in the department while 68(75.6%) respondents disagreed with the statement. From the Table 51(56.7%) respondents agreed that education today is more of audio-visual and they believe male students supersede female students in this area while 39(43.3%) of the respondents disagreed with the statement. From the Table 38(42.2%) respondents agreed that they always do more of their research work on-line without anybody assistance while 52(57.8%) of the respondents disagreed with the statement. From the Table 78(86.7%) respondents agreed that indeed we are living in a global world while 12(13.3%) of the respondents disagreed with the statement. Therefore, the responses to the above statement disclosed the reasons why male students have overall attainment in ICT and education in the University of Abuja.

Research Question 3: How differentially does ICT affect female and male relationship in education within the University of Abuja? From this study, the responses made to statements 2, 4, 5, 11, 14, and 15 of the questionnaire answered research question 3 above. The response to statement 2, 4, 5, 11, 14, and 15 are as follows: Table above reveals that 32(35.6) respondents agreed that female students are ICTs friendly in line with their education as compare to male students while 58(64.4%) disagreed with the statement. Table above shows that 90(100%) respondents agreed that they have offered ICT related courses while none of the respondents disagreed with the statement. From the table above 47(52.2%) respondents agreed that the knowledge of ICT has improved their knowledge in



their chosen field while 43(47.8%) of the respondents disagreed with the statement. From the Table 52(57.8%) respondents agreed that they always run into problems while working on-line without anybody's assistance while 38(42.2%) of the respondents disagreed with the statement. From the Table 22(24.4%) respondents agreed that internet connection in their school has good band width that enables them to surf the net easily while 68(75.6%) of the respondents disagreed with the statement. From table 20 above 22(24.4%) respondents agreed that some of their classes and assignments can be done on-line with ease between them and their lecturers while 68(75.6%) of the respondents disagreed with the statement. Hence, the responses above revealed how differently ICT affect female and male relationship in education within the University of Abuja.

5. Conclusion and Recommendations

The following conclusions were drawn from the findings of the study: The findings showed that there was decrease in the number of female students in ICT and education in University of Abuja. It was also established that male students have the overall attainment as compared to the female students in ICT and education among University of Abuja students. Also, the differentiation in relationship in education using ICT as a yard-stick was confirmed among female and male students among University of Abuja student.

Based on the results and findings of this study, the following recommendations were made: There should be equity in the in-take of female and male students from the outset. Female students should be encouraged to take course in ICT and other related course, as this will help in equipping them so also the country as a whole towards technological advancement that the country is striving to achieve. Parent should be interested in getting relevant ICT in learning the course as a whole. Lecturers should understand the phobia of female students towards calculation; thus they should adopt exemplify methods in teaching the course. University administrator should release fund for seminars, workshops, talk-shows towards the advancement of ICT among University of Abuja students and female students should be giving special consideration.

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