
Impact of ICTs on Knowledge Sharing among Library and Information Science Undergraduate: A Case Study of Delta State University, Abraka

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ABSTRACT

This paper investigated the impact of ICTs on knowledge sharing among Library and Information Science Undergraduates in Delta State University, Abraka. Issues such as the types of knowledge shared among undergraduates, type of ICT facilities used for knowledge sharing, the impact of ICTs on knowledge sharing, impact of gender (male and female) on knowledge sharing among undergraduates and the impact of the level of study (200, 300 and 400 levels) on knowledge sharing among undergraduates were x-rayed in this study. This was accomplished using a case study of Undergraduates of Library and Information Science from Delta State University, Abraka with the aid of a structured open-ended questionnaire that was administered to the students and review of related literature from renowned scholars. Interestingly, the respondents revealed that both tacit (knowledge that resides in individuals) and explicit (information bearing materials) knowledge were shared among them through the use of different ICT facilities such as e-mail(138, 75%), social networking sites(161, 88%), SMS(160, 87%), university portal(129, 70%), online group discussion(137, 75%), search engines(143, 78%) and online database(142, 77%). Gender (male{M=14.7, SD=2.4} and female{M=14.4, SD=2.2}) do not influence undergraduates from sharing knowledge among their course mates and it was also revealed from the findings of the study that the level of study has a significant impact on the willingness to share knowledge among undergraduates. The use of different ICTs for knowledge sharing was due to its enormous impact and that knowledge sharing cuts across gender and level of study of the undergraduates.

Key words: Impact, ITCs, knowledge sharing, Library and Information Science, undergraduates

Introduction

Technological advancement in the 21st Century has necessitated its adoption by institution of higher learning globally for carrying out its core function of teaching, learning and the promotion of research activities of staff, students and other external partners. The adoption of information and communication technologies by higher institutions of learning has positioned undergraduates to have the privilege of accessing different information materials and also to learn at their own convenient time and place. In support of this assertion, Petrides and Nodine (2003) opined that the growth and development of institutions of higher learning lies squarely on the

knowledge they created, the medium of transferring the knowledge they created to others and the relationship they are able to establish with other sister institutions.

Knowledge can be defined as "awareness, familiarity; a person's range of information, understanding of a subject related to a particular discipline (for instance Library and Information Science); the sum of what is known by an individual or group of individuals". Etc. (Oxford Dictionary as cited in Ayman, 2011, p.1). According to Davenport and Prusak (1998, p.5) Knowledge can be conceptualized "as a fluid mixed of framed experience, values, contextual information, expert insight and ground intuition that provides an environment and framework for evaluating and incorporating new experiences and information by an individual in a particular discipline". Knowledge originates and is applied in the minds of the knower (for instance an undergraduate). In universities, knowledge is often embedded not only in documents (textbooks, handouts, journal articles, projects, dissertations, theses, etc.) or in institutional repositories but also in the day to day routines, processes, practices and norms of the institution.

It can be deduced from the different definitions of knowledge as provided by renowned scholars that knowledge is a vital resource needed for the day to day running of institutions of higher learning and knowledge is optimally utilized when it has been shared. Knowledge sharing as a concept is more advanced than but related to communication. It is also different from but related to information distribution (Huber, 1991; Nelson & Coopriider, 1996 as cited in Hendriks, 1999, p. 1). In a strict sense, knowledge cannot be shared. Knowledge is not like a commodity that can be passed around freely, it is tied to the technical know-how in relation to a particular field of study. To learn something from someone else, that is, to share his or her knowledge, an act of reconstruction is needed. It takes knowledge to acquire knowledge and, therefore, to share knowledge. Knowledge sharing presumes a relation between at least two parties, one that possesses the knowledge and the other that acquires knowledge. The first party should communicate its knowledge, consciously and willingly or not, in some form or other (either by acts, by speech, or in writing, etc.). The other party should be able to perceive these expressions of knowledge, and make sense of them (by imitating the acts, by listening, by reading the book, etc.).

Knowledge sharing in the view of Junjun, Yong and Yonggang (2008) is an organized process that involves the application of various modes of communication with the intention of distributing knowledge among a group of people who are members of the same profession taking cognizance of the appropriate time, place and form. This implies that for knowledge sharing to take place among undergraduates, there must be a conscious effort, plans and intentions back up with the willingness to do so. Knowledge sharing does not happen by proxy but it is a carefully planned event and as such must be influenced by certain factor(s). Knowledge sharing is one method for both making sure that knowledge is available and delivered at the right time to the right set of undergraduates. In another clime, knowledge sharing can also be seen as an interactive practice of disseminating veracious knowledge, to the right people at the right time, in an intelligible way that allows them to act prudently and to enrich the institution's knowledge base. It therefore implies that one sure way of creating a healthy learning environment is through knowledge sharing among undergraduates. This in turn can further be enhanced through the use

of various channels in facilitating knowledge sharing such as the use of computers and other accompanying technologies.

Information and Communication Technologies (ICTs) in the view of Ahmed and Rana (2011) can be a helpful tool for effective knowledge sharing and can facilitate knowledge sharing in both time and space dimensions. It therefore implies that that knowledge sharing among undergraduates can be strengthened with the application of ICT and it makes sharing of knowledge an enjoyable activity by breaking the barrier of time, distance and irrespective of location of the undergraduates that are willing to share their knowledge with one another. Thus, it is even more pronounce as information and communication technologies support, accelerate and improve the sharing of information among firms and individuals and change the way people learn and network.

The need for knowledge generated to be freely shared among a group of persons who are commonly bound in one profession cannot be over emphasized especially in a learning environment such as the university. From preliminary observation, experience and empirical literature consulted by the researcher, it was discovered that there exists a constant reduction on the knowledge sharing intention by undergraduates despite the usefulness of knowledge sharing among undergraduates and the entire institution of learning.

Modern economy requires knowledge sharing activities as an important source of practice which is supported by the use of ICT. This is because ICT can reduce barriers in knowledge sharing activities and it also could save time when engaging in knowledge sharing (Casimir, Ng & Cheng, 2012). Past researchers agreed that ICT is one of the factors that influence knowledge sharing activities among a group of people of the same profession or field of study and it also facilitates knowledge sharing across geographical boundaries. Grace's study (as cited in Mohd & Zawiyah, 2015) has found that knowledge sharing activities using ICT can increase the rate of knowledge sharing among educators in educational institutions. According to Fadilah (2013), the activity of using ICT in knowledge sharing is a practical way of narrowing down the knowledge gap among undergraduates if effectively utilized. Therefore, if undergraduates can manage ICT systematically, they will be able to make the most out of it and have competitive advantage over others (Raab, Ambos & Tallman, 2014). It is against this background that this study is embarked upon by the researcher to investigate the impact of information and communication technologies on knowledge sharing among undergraduates of Library and Information Science in Delta State University, Abraka.

Case Study

Delta State University, Abraka is one of the leading library schools in Nigeria that runs undergraduate and postgraduate (PGD in Library and Information Science, M.Sc. and Ph.D.) Programmes in Library and Information Science with well over one thousand students from 100 to 400 Levels at the undergraduates programme and the only library school in Delta State. In order to stream line the views of renowned scholars on knowledge sharing with what is obtainable in practical situations, the researcher decided to administer structured open-ended questionnaire made up of twenty-seven items to 200, 300 and 400 level students on which they were asked to comment on the following issues as regards the impact of ICTs on knowledge sharing.

Research Questions

- i. What types of knowledge are shared among undergraduates of Library and Information Science?
- ii. What types of Information and Communication Technologies are used for knowledge sharing among undergraduates?
- iii. What is the impact of Information and Communication Technologies on knowledge sharing among undergraduates?
- iv. What is the impact of gender on knowledge sharing among undergraduates?
- v. What is the impact of the level of study on knowledge sharing among undergraduates?

REVIEW OF RELATED LITERATURE

In order to ensure an effective knowledge sharing pattern among undergraduates, it is important to know the different forms or types of knowledge that exist or that are available to undergraduates. The categorization of knowledge is also a major determinant of how to manage them. For instance, it is a clear fact that knowledge that are captured in a document would need to be managed by way of organizing, storing, retrieving, disseminating (that is, sharing), etc. which is quite different from the way knowledge that are acquired through experience of an individual will be handled.

Nonaka and Takeuchi (as cited in United States Office of Personnel Management, 2011) conceptualized knowledge into two major categories, which are: explicit and tacit. They further explained that explicit knowledge is essentially that which we document or that can be documented or knowledge that are found in documents. Most often, this is knowledge in our manuals, standard operating procedures, regulations, memoranda, lecture notes, textbooks, handouts, minutes of meetings, previous examination questions, faculty/departmental handbooks, lecture/examination time tables, etc. while Tacit knowledge falls under unspoken knowledge used to make judgments, decisions or interpretations, skills, experiences, etc. for example, we may not readily recognize it as knowledge or the concept that we would like to document is difficult to describe. However, explicit and tacit knowledge work hand in hand. For instance, a book of recipes is explicit knowledge, but it takes tacit knowledge to interpret the recipes and produce good meals. It becomes imperative for undergraduates to constantly harness these two forms of knowledge to complement classroom activities. In the same vein, Mahmood, Qureshi and Shahbaz (2011) Categorized knowledge into two major groups, which are: content knowledge otherwise known as explicit knowledge and the context knowledge otherwise known as tacit knowledge. They further expatiate that Data and information which is encoded, stored and disseminated is known as content component of the knowledge more popularly referred to explicit Knowledge. While the experience, situation, conditions as perceived by owner of the knowledge is the context component of knowledge, usually termed as the Tacit Knowledge.

In this era of globalization or knowledge society, knowledge sharing in higher institutions of learning such as the university among undergraduates is very important as a way of buttressing the classroom activities and as such it is constantly driven by so many new technologies on a daily basis.

E-mail: Norhanim, UmiKalsum, Kamaruzzaman and Afifah (2013) argued that most professionals use online database and technology to improve the weakness and limitation of personal acquaintance in sharing knowledge or information especially in citadel of learning such as the university. Email or also known as electronic mail is used as a communication tools to speed up and to make the knowledge sharing between other users (undergraduates) easier. Even though in this new globalization era, a lot of other tools to share knowledge are being discovered almost on a daily basis, email is still being chosen as one of those knowledge sharing tools because undergraduates can use it to communicate in more formal way other than other existing social network sites such as Facebook, Twitter, Friendster, etc. By using email, the sender will communicate in more appropriate way and think of the important points before he/she composes the mail and it is one of the easiest tools to be used in sharing and exchanging knowledge among undergraduates.

Social networking: Social networking had gain a big attention nowadays because the user can communicate in informal or formal way. Technology is chosen based on its function, cost, and technical and cultural fit (Ettore, 1999). A lot of online business and other communication use social network as a medium to market and communicate with their buyers online. University student actively use social networks to know and discuss about assignment and ask virtually after the lecture. Through social network people could expand their contacts wider and can jump from their list of friends to other to share knowledge worldwide.

Drop-box: Drop-box is an application which used to share document. It is another tool that is being use currently to share information and documents with other. It is an online storage utility that had been created to send document rather than email. The documents that can be attached in email is just limited up to 25 MB while drop box can share up to 2 GB of the files. Drop-box makes sharing easier by just share a folder that consists of the file we would like to share with others. Therefore, technology nowadays had make sharing easier and we should take advantage to share the knowledge with others.

SMS: Mobile phone is essential tools for everyone to communicate in daily lives as it no longer functions to talk with other but it can be used to share information, opinions and even discussion. (Faulkner & Culwin, 2005) said that telecommunications industry had the fastest growth among other industry. Individuals share a lot of information and through SMS people communicates faster and the communication between one another is private (Lu, Deng & Wang, 2010). SMS is convenient and it does not need us to talk to communicate and it can be a part of efficient tools to share knowledge and information.

Spectrum/University Portal: Spectrum is the student portal used in University of Malaya. The usage of student portal is widely used in higher learning education which acts as information gateway. Nowadays, there is a huge number of users on the internet who search data and information online and web portals that are managed to give the relevant information. It is a step to globalization of knowledge sharing and the existence of portal ease the users who need specific information. Users can store, retrieve learning sources and share with the other students easily. A

technology had become a good teaching tool (Adonis, 2006) for better information and knowledge dissemination, universities and academic institutions encourage using it. An educational portal had been acknowledged in many countries. The usefulness and the ease of portals help to encourage knowledge sharing especially for students.

Video or Audio: Knowledge sharing start with communication and one of the tools to communicate is video or audio. E-discussion that had being done structurally can be made into a video. This can be use as primary source and same goes to audio (Ramalingam, 2006). Some lecturers use video and audio to share information with their students. This could help students understand better and give a clear view on the topic. In fact, video sharing or audio sharing could help to get student attention in class rather than the usual slide presentation. Through video, knowledge can be share by video conferencing.

However, for the purpose of knowledge sharing, several scholars (Gartner, 2006; Logan, 2006a, 2006b; Rasmus, 2003; Riege, 2005) have identified the following as some of the information and communication technologies that are used for knowledge sharing among students in higher institutions of learning, these include: world wide web(www); online discussion group; video conferencing; search engines; e-mail; social network sites; mobile technologies; blogs; online database; short messaging technologies (SMS); etc.

Modern economy requires knowledge sharing activities to be as an important source of practice which is supported by the use of ICTs. This is because ICTs can reduce barriers in knowledge sharing activities and it also could save time for knowledge sharing among undergraduates (Casimir, Ng, & Cheng, 2012). Several scholars who have conducted researches on the impact of ICTs on knowledge sharing asserted that ICT is one of the major factors that influence knowledge sharing activities among a group of individuals who share collective ideas and it is a major enabler of knowledge sharing across geographical boundaries. Grace's study (as cited in Mohd & Zawiyah, 2015) has found that knowledge sharing activities using ICTs can increase the rate of knowledge sharing among undergraduates in educational institutions. According to Fadilah (2013), using ICTs to share knowledge among undergraduates is one sure way of narrowing down the knowledge gap among them. ICTs used for knowledge sharing in a broad level have heightened the level of cooperation among group of undergraduates and to share their knowledge simultaneously irrespective of their location. ICTs is a major catalyst for the acquisition, storage, processing, retrieving and sharing of knowledge in this era known as the knowledge society (Reychav & Weisberg, 2010). Albino, Garavelli and Gorgogline (2004) are of the opinion that ICTs have impacted on knowledge sharing by improving the efficacy of the transference of knowledge thereby increasing the transfer of knowledge, reduction in the cost of transferring knowledge due to time and distance among undergraduates, overcoming constraints in accessing knowledge, increasing range and speed of knowledge sharing and improving task performance of undergraduates. In the same vein, Paul (1999) observed that ICTs have impacted on knowledge sharing among undergraduates by removing barriers that are associated with knowledge sharing among undergraduates, providing access to information, improving the process and locating knowledge carriers/seekers.

According to Stollenwerk (as cited in Khalil, Sammer, Zeyad & Ayman, 2011), information and knowledge usually remain restricted to a small group of individuals. Even when they are available, they are neither on time nor in the right place. In this context, easy access becomes a critical issue in the sharing process. Here, information technology and communication roles are extremely important in this identification of information and knowledge needs, creation of efficient mechanisms of knowledge recovery and dissemination, qualification of the potential users of tools of information and knowledge recovery, automatic dissemination of knowledge to the right people and on time (Juliana & Jano, 2007).

METHODOLOGY

The descriptive survey research design was adopted for this study and was carried out in Delta State University, Abraka, Nigeria using Library and Information Science Undergraduates. A target population of 385 respondents consisting of 200, 300 and 400 Level undergraduates (sourced from Head of Department's office, 2017) from which a sample size of 194 respondents made up of 61 undergraduates from 200 level, 63 undergraduates from 300 level and 69 undergraduates from 400 level were used for the study. The respondents from the various levels were selected using probability sampling technique of the simple random sampling method of balloting, thereby giving each of the respondent equal opportunity to be part of the study. The questionnaire was administered personally by the researcher to the respondents in their various lecture halls and retrieved immediately from the respondents in order to ensure high response rate.

The researcher employed a self-structured 27-item questionnaire for the study which was rated on a 2 point Likert type scale of agreed and disagreed. The data generated from the returned copies of the questionnaire were analyzed using simple percentage and frequency counts, T-test and one way ANOVA respectively to answer the research questions and these were carried out using SPSS version 22.

FINDINGS

Table 1: Types of Knowledge Shared among Undergraduates

S/N	Knowledge	Agree		Disagree	
		Freq.	%	Freq.	%
1	Lecture notes	167	91	17	9
2	Handouts	149	81	35	19
3	Text books	154	84	30	16
4	Previous assignment papers	114	62	70	38
5	Previous examination papers	124	67	60	33
6	Photocopies of articles	137	75	47	25
7	URLs of useful websites	118	64	66	36
8	Faculty/Departmental handbooks	136	74	48	26
9	Lecture/examination timetables	161	89	20	11
10	Knowledge acquired from lectures attended	167	92	15	8

S/N	Knowledge	Agree		Disagree	
		Freq.	%	Freq.	%
11	Knowledge acquired from personal studies	169	92	15	8
12	Knowledge acquired from seminal/workshop attended	140	76	44	24

On the issue relating to the types of knowledge shared among undergraduates, the responses as indicated in Table 1 revealed that undergraduates of Library and Information Science in Delta State University share both explicit (knowledge embedded in documents) and tacit (knowledge that resides in an individual) knowledge, which includes: lecture notes (167, 91%), hand-outs (149, 81%), text books (154, 84%), previous assignment papers (114, 62%), previous examination papers (124, 67%), photocopies of articles (137, 75%), URLs of useful websites (118, 64%), Faculty/Departmental handbooks (136, 74%), lectures/examination timetables (167, 92%), knowledge acquired from lecture attended (169, 92%), knowledge acquired from personal studies (169, 92%) and knowledge acquired from seminal/workshop attended (140, 76%).

From the responses, it was observed that knowledge acquired from personal studies and knowledge acquired from lectures attended received 92% each with 169 and 167 responses respectively out of the 193 respondents for this study. I want to pin point here that the main objective of higher institutions of learning is to promote the teaching, learning and research activities of students, staff and other external researchers. Thus, the importance of knowledge acquired from personal studies and that from lectures attended cannot be overemphasized in achieving the prime objective of higher institutions of learning in Nigeria and the world over. This further buttressed the need for lecturers to be more dedicated in the delivery of lectures in order to impact more on the students and students on their own part should be more studious in their studies as a way of building on what they have learnt from the classroom. Knowledge acquired from personal studies and knowledge acquired from lectures attended fall under one of the two broad categories of knowledge which is tacit knowledge. Tacit knowledge is the knowledge that resides in the head of people and it is the most difficult form of knowledge to share or document. The responses from the undergraduates further shows the importance of tacit knowledge over other forms of knowledge and the fact that it is the mother of all other knowledge from which others forms of knowledge can be generated. It was also shown that other form of tacit knowledge that are shared by the respondents as shown in Table 1 is Knowledge acquired from seminal/workshop attended. This again buttressed the need for students to be constantly exposed to seminars/workshops/conferences as a way of creating an avenue for them to acquire more acknowledge which invariably create room for them to share knowledge among their peers.

The other form of knowledge shared by students as revealed in Table 1 is knowledge that is documented in lecture notes (167, 91%), textbooks (154, 84%), handouts (149, 81%), etc. which are under the category of explicit knowledge. I therefore posit that students cannot only rely on what is being taught in the classroom or knowledge acquired from seminars/workshops/conferences attended as the only ways of acquiring knowledge but should complement these by taking time to study on their own by consulting textbooks, handouts, lecture notes, etc. that are in line with

their discipline of study which will help them to broaden their knowledge and create an ample opportunity for them to share knowledge among their peers. The place of recorded human knowledge (textbooks, handouts, lecture notes, etc.) cannot be downplayed in the achievement of the teaching, learning and research activities of higher institutions in Nigeria and the world over, hence, the need to share such knowledge as revealed by the respondents. The responses from the students fit in to the findings made by Nonaka and Takeuchi (as cited in United States Office of Personnel Management, 2011) who conceptualized knowledge into two major categories, which are: explicit and tacit. They further explained that explicit knowledge is essentially that which we document or that can be documented or knowledge that are found in documents.

Table 2: Types of ICTs Facilities used for Knowledge Sharing

S/N	ICT Facilities	Agree		Disagree	
		Freq.	%	Freq.	%
1	E-mail	138	75	46	25
2	Social networking sites	161	88	23	12
3	SMS (mobile phones)	160	87	24	13
4	University portal	129	70	55	30
5	Online group discussion	137	75	47	25
6	Video conferencing call	85	46	99	54
7	Search engines	143	78	40	22
8	Online database	142	77	42	23

Table two revealed the responses from the students regarding the type of ICTs used for the purpose of knowledge sharing. There was a unison agreement as to the type of ICTs used for sharing knowledge among the students, which includes: the use of e-mail (138, 75%), social network sites (161, 88%), SMS (160, 87%), university portal (129, 70%), online group discussion (137, 75%) search engines (143, 78%) and online database (142, 77%). The responses as obtained from the respondents creates the notion that the need to share knowledge is not just application to professionals in government and private establishments but also something of necessity to students in higher institutions of learning, thus, the need to embrace the use of modern technologies for the purpose of knowledge sharing. The organization of knowledge in a particular field of study and enabling access to it are critical to students' ability to effectively use the avalanche of knowledge that are readily available in this era of information explosion (Logan, 2006a). These avalanches of knowledge can be shared and effectively utilized with the application of information and communication technologies and without these modern technologies most knowledge sharing practices would be less effective. Thus, technology can help to create, capture, organize, access and use the intellectual assets embedded in Library and Information Science if effectively applied for the purpose of sharing knowledge. It is worthy to mention here that ICT is a veritable tool and a major facilitator of knowledge sharing among students but should never alone be the primary driver of a knowledge management or sharing initiative (Tsui, 2005; Coakes, 2006).

The use social network sites as indicated by 161(88%) respondents such as Facebook, Twitter, Whataspp, Blogs, LinkedIn, Youtube, etc. help students to create a profile about themselves, connect with friends/peers in order to facilitate interaction among them and promote knowledge sharing. Social network sites are major facilitators of knowledge sharing in the 21st Century among students who are of the same discipline and the society at large. SMS with 160(87%) responses as revealed in Table 2 is another ICTs used by undergraduates in knowledge sharing. The use of sophisticated phones enhanced by the internet as a medium of communication in the 21st Century cannot be over emphasized in our day to day activities irrespective of our disciplines. The use of SMS via mobile phones in knowledge sharing among students as shown in this study further buttressed the assertion of Faulkner and Culwin (2005) that mobile phones are essential tools for everyone to communicate on daily basis as it foster the sharing of information, opinions and even discussion without the physical presence of the individuals involved. Other ICT facilities used for the purpose of sharing knowledge as revealed in Table 2 are e-mail (138, 75%), university portal (129, 70%), online group discussion (137, 75%) search engines (143, 78%) and online database (142, 77%) which are all facilitated by the internet. The internet is a network of networks connecting millions of computers irrespective of their distance for the purpose of sharing recorded human knowledge that have been documented. The need to share knowledge via (e-mail, university portal, online group discussion, search engines and online database) these ICT facilities enhanced by the internet of course cannot be jettisoned in the 21st Century that has been characterized as a global village or knowledge society if knowledge sharing among group of individuals is to be encouraged.

This finding as revealed in this study further buttressed the assertion of Gartner (2006); Logan (2006a, 2006b); Rasmus (2003) and Riege (2005) which identified the following as some of the information and communication technologies that are used for knowledge sharing among students in higher institutions of learning, these include: world wide web(www); online discussion group; video conferencing; search engines; e-mail; social network sites; mobile technologies; blogs; online database; short messaging technologies (SMS); e-mail; etc.

Table 3: Impact of ICTs on Knowledge Sharing

S/N	Impact	Agree		Disagree	
		Freq.	%	Freq.	%
1	Time saving	168	91	16	9
2	Facilitating simultaneous knowledge sharing	165	90	19	10
3	Reduction in the cost of knowledge sharing	153	83	31	17
4	Breaking barriers in accessing Knowledge	150	82	34	18
5	Increasing the range and speed of knowledge sharing	165	90	19	10
6	Enables the efficacy of the transference of knowledge	159	86	25	14
7	Major catalyst in the acquisition, processing, storage and sharing of knowledge	163	89	21	11

On the issues relating to the impact of ICTs on knowledge sharing among undergraduates, the responses that were obtained from the students revealed that ICTs is a major driver of knowledge sharing due to the fact that sharing of knowledge and learning are like two sides of the same coin with each of them complimenting one another. That is to say sharing knowledge is a way of building on what has been taught in the classroom and sharing of knowledge is also another avenue for learning more. As revealed in Table 3, the respondents revealed that there exists enormous impact of ICTs on knowledge sharing, which includes: time saving (168, 91%), facilitation of simultaneous knowledge sharing (165, 90%), breaking barriers in accessing knowledge (150, 82%), enabling the efficacy of the transference of knowledge (159, 86%), reduction in the cost of transferring knowledge (153, 83%) and major catalyst in the acquisition, processing, storage and sharing of knowledge (163, 89%).

The responses from the students further buttressed the saying that the 21st Century is a knowledge society or a global village where information can be accessed or shared by an individual or a group of individuals irrespective of the time, location, distance, the volume of information material, format of the information material, etc. within a limited period of time with the aid of computers and other accompanying technologies. The presence and the corresponding application of ICTs in higher institutions of learning has changed the way information resources are selected, acquired, processed/organized, stored, accessed and shared among students of higher institutions of learning. The finding as revealed from the responses of the students is in line with the assertion of McKenzie and Winkelen (2004) that traditionally, the benefits of the application of ICTs in knowledge sharing have been seen in transferring explicit knowledge among a group of individuals but advances in technology are enabling more and more sharing of tacit knowledge. In the same vein, the finding of this study agrees with that of Albino, Garavelli and Gorgogline (2004) which revealed that ICT has impacted on knowledge sharing by improving on the efficacy of the transference of knowledge thereby increasing the transfer of knowledge, reduction in the cost of transferring knowledge due to time and distance among undergraduates, overcoming constraints in accessing knowledge, increasing range and speed of knowledge sharing and improving task performance of undergraduates.

Table 4: T-Test showing the impact of Gender on Knowledge Sharing among Undergraduates

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Types of knowledge shared	Male	58	14.7069	2.35460	.30917
	Female	121	14.4463	2.24332	.20394

Independent Sample T-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Difference	
									Lower	Upper
Knowledge Sharing	Equal variances assumed	1.768	.185	.716	177	.475	.26062	.36409	-.45790	.97913
	Equal variances not assumed			.704	107.707	.483	.26062	.37038	-.47356	.99479

An independent sample t-test was conducted on the impact of gender on knowledge sharing among undergraduates. It was revealed from Table 4 that the result for Levene’s test for equality of variances is 1.768 which is greater than 0.05 alpha level, hence, "Equal variances assumed" was used for the result. There is no significant difference between the mean score and standard deviation for male (M=14.7, SD=2.4) and female (M=14.4, SD=2.2) undergraduates towards knowledge sharing; $t(177) = 0.72, p = 0.48$. These results suggest that gender (male and female) do not influence or hinder undergraduates from sharing knowledge among their course mates in Delta State University, Abraka.

The finding from this study shows that knowledge is a major catalyst or a driving force that determine the success of all human endeavours irrespective of gender inclination. Hence, the need to share knowledge in higher institutions of learning among undergraduates cut across gender due to the adoption of ICT by higher institutions of learning that has positioned undergraduates to have the privilege of accessing different information materials and also to learn at their own convenient time and place.

Table 5: ANOVA showing the impact of the Level of Study on Knowledge Sharing among Undergraduates

Descriptive

Knowledge Sharing

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
200	62	13.8710	1.99576	.25346	13.3641	14.3778	12.00	19.00
300	56	15.5000	2.47900	.33127	14.8361	16.1639	12.00	22.00

400	62	14.3387	2.07201	.26315	13.8125	14.8649	12.00	19.00
Total	180	14.5389	2.27290	.16941	14.2046	14.8732	12.00	22.00

Test of Homogeneity of Variance

Knowledge Sharing

Levene Statistic	df1	df2	Sig.
1.148	2	177	.319

ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	81.873	2	40.936	8.597	.000
Within Groups	842.855	177	4.762		
Total	924.728	179			

POST HOC TEST

Multiple Comparisons

Dependent variable: Knowledge sharing

Tukey HSD

(I) level of the respondents	(J) level of the respondents	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
200	300	-1.62903*	.40229	.000	-2.5799	-.6782
	400	-.46774	.39193	.459	-1.3941	.4586
300	200	1.62903*	.40229	.000	.6782	2.5799
	400	1.16129*	.40229	.012	.2104	2.1121
400	200	.46774	.39193	.459	-.4586	1.3941
	300	-1.16129*	.40229	.012	-2.1121	-.2104

* The mean difference is significant at the 0.05 level.

A one-way between groups analysis of variance was conducted to explore the impact of the level of study on knowledge sharing among undergraduates. Participants were divided into three groups according to their level of study (200, 300 and 400 level). The result shows that the impact of the level of study on knowledge sharing among undergraduates was statistically significantly different, $F(2,177) = 8.60$, $p = 0.000$. A post hoc comparisons using Tukey test was carried out to find out the level of study that differs. It was revealed that a significant difference exist in the level of study on knowledge sharing among undergraduates between 200 and 300 ($p = 0.000$) and a significant difference also exist between undergraduates in 400 and 300 ($p = 0.012$) levels on knowledge sharing. But there is no significant difference in the impact of level of study on knowledge sharing between undergraduates in 400 and 200 ($p = 0.459$) levels. Therefore, it

was concluded from these findings that the level of study has a significant impact on the willingness to share knowledge among undergraduates in higher institutions of learning.

The level of study of the undergraduates is synonymous with their exposure to different information bearing materials (print and non-print format) or recorded human knowledge, experience, acquisition of knowledge in their discipline, awareness of the need to share knowledge, exposure to different types of knowledge and the different ways through which they can share knowledge among their course mates and among other undergraduates they can share knowledge with. At the point of entry into higher institutions of learning, undergraduates are not yet aware of the importance of knowledge sharing and the various techniques and ICT facilities that will facilitate knowledge sharing, hence, the impact of their level of study on knowledge sharing among their peers.

CONCLUSION/RECOMMENDATION

The world is regarded as a global village or a knowledge society in the 21st Century where one can have access to needed information irrespective of time, distance or location and knowledge is the major driver of every sector of the society. Thus, the need to share knowledge cannot be overemphasized especially in higher institutions of learning where great minds are tutored to impact on the larger society. The long standing adage that knowledge is power has been overtaken by the fact that those who share knowledge are more powerful for this will give them the opportunities to impact positively on their society and command the much needed power because others will respect them for the knowledge they possess (Viviana, 2015). The eras where knowledge is hoarded by individuals are long gone due to the invention and corresponding application of ICTs for virtually all sectors of the society. Therefore, knowledge which is an invaluable tool for the development of the larger society and therefore cannot be left behind in the scheme of things. Knowledge sharing using ICTs in higher institutions of learning should not just be emphasized but should be imbibe as norms that must be adhere to among students, staff and management of institutions of learning in Nigeria and the world at large.

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