

AWARENESS AND KNOWLEDGE OF CYBERETHICS BY LIBRARY AND INFORMATION SCIENCE DOCTORAL STUDENTS IN TWO NIGERIAN UNIVERSITIES

By

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ABSTRACT

Library and Information Science (LIS) doctoral students need to source for information from various information sources and this necessitate the use of Information and Communication Technology (ICT) for their research and other academic activities. Their behaviour when using ICT will be determined by their awareness and knowledge of the legal, moral and social issues. This study, therefore, investigated the current level of awareness and knowledge that LIS doctoral students have about cyberethics. The PAPA (Privacy, Accuracy, Property and Accessibility) framework is the anchor for this study. A survey design and a questionnaire were adopted to collect data from doctoral students in two Nigerian universities. Data collected was analysed using descriptive statistics and cross tabulation. Findings revealed that the level of awareness and knowledge of cyberethics by the students were high (>83.4%) and (>73.5%) respectively, although Ilorin showed a higher level of awareness and knowledge than Ibadan. The adherence to PAPA framework was in the range of 51.8% - 92.0%. LIS doctoral students are highly aware and knowledgeable about cyberethics. Cyberethics education should be provided to promote compliance with cyberethics among the LIS doctoral students in Nigerian universities.

Keywords: Cyberethics, Awareness, Knowledge, LIS Doctoral Students, PAPA Framework

Introduction

Doctoral students are students who are studying to acquire a doctoral degree from a university and are assigned supervisors who oversee their research. The duration of this programme is about three or more years, at the end of which they will be examined by a panel of examiners which include: the external examiner who is not from that university, but a recognized academic in the area of the candidate's research, an internal examiner who is a member of staff in the same university, the supervisor (s), head of the department, the representative of the

postgraduate school and others. The panel members determine if they are qualified to be given the doctoral degree.

Library and Information Science (LIS) doctoral students are students who are studying for a doctoral degree in Library and Information Science discipline and may teach in a library school, work in a library, information centre or any other organization or as a consultant at the end of their programme. LIS doctoral students will, therefore, need information for their research, writing seminar papers and other academic activities (Abubakar & Adetimirin, 2015). Ismail et al. (2011) emphasized the importance of research to postgraduate students and this necessitates searching for information from different sources as books, journals, databases, the internet, library and others. The need to retrieve current and relevant information whenever it is required has prompted the use of electronic resources which are easily accessible from anywhere (Swamy & Kishore, 2013; Sinha, et. al., 2011).

LIS doctoral students also need to access their university portal to register, pay school fees, learning management systems, read bulletin, get latest news or information about their university, conferences, seminars, workshops, and programmes. Access to the university portal and electronic resources is made possible by Information and Communication Technology (ICT) which include the Internet, computers, Laptops, IPods, IPods, Tablets and smart phones. Doctoral students now easily access these electronic resources through these ICT from different access points such as library, computer laboratory, classroom, department, home and offices. The ethics about using ICT by these students for their programme becomes imperative and this is what is referred to as cyberethics.

Cyberethics is a broader term than computer ethics and internet ethics (Onyancha, 2015). Rama (2014) defined cyberethics as the “rules set out for responsible behavior in cyberspace and it explores the guideline for online conduct that influences the social, political, legal and business affairs”. Igwe and Ibegwam (2014) explained cyberethics as the “social responsibility in cyberspace”, while it is seen as a “discipline of using appropriate and ethical behaviors and acknowledging moral duties and obligations pertaining to online environments and digital media” (IKeepSafe, 2014). Ramadhan, et. al. (2011) described it as a system of standards that prescribe morality and immorality in cyberspace, signifying the preservation of freedom of expression, intellectual property and privacy.

Igwe and Ibegwam (2014) highlighted some cyberethical issues to include: “plagiarism, copyright, hacking, fair use; file sharing, online etiquette protocols, posting incorrect/inaccurate information, cyber-bullying, stealing or pirating software, music, and videos, online gambling, gaming, and internet addiction. Others are privacy, security, electronic monitoring of employees, collection and use of personal information on consumers, and identity theft”.

LIS doctoral students need to be aware of cyberethics as they source for different information especially from the Internet such as open access journals, online databases, videos, photographs. Therefore, they must know about the ethical use of these information resources to avoid violating them in terms of referencing by acknowledging the author and source from where they got the information sources, plagiarism and copyright infringement. It is only when these are aware and possesses the cyberethics knowledge guiding these information resources, that they can use these information resources legally and morally.

Literature revealed that unethical use of ICT by students (primary, secondary undergraduates and postgraduate) and lecturers is a major challenge in educational institutions (Özer et. al., 2011; Ki and Ahn, 2006; Johnson and Simpson, 2005). Beycioglu (2009) and Akbulut et. al. (2008) reported that the Turkish educational institutions are faced with the challenge of unethical use of computers and suggested that teachers should educate students on the ethics of using ICT. Johnson and Simpson (2005) reiterated the importance of understanding the legal and illegal use of computer by lecturers or researchers and this was also affirmed by Özer et. al., (2011) who investigated computer teachers’ attitude towards ethical use of computers in elementary schools in Turkey.

Igwe and Ibegwam (2014) affirmed that cyberethics education is necessary and should be taken with much importance in Nigeria as it will facilitate the integration of moral and responsible behavior in the citizens (children, youth and adults) in the use of the Internet and surfing the cyberspace. They defined cyberethics education as an “instructional programme that is aimed at inculcating in individuals knowledge of ethical standards and issues required while using the cyber space in order to avoid acts that constitute cybercrimes, which are punishable by law”. Therefore, LIS doctoral students must be knowledgeable on cyberethics in their use of electronic information resources for their programme to avoid contravening any law or regulation relating to the use of electronic information resources retrieved from the Internet.

Statement of the problem

LIS doctoral use ICT to retrieve information required for their research and various academic activities. The use of ICT is guided by rules and their awareness and knowledge of these rules will justify their adherence to such rules. These doctoral students after graduation will become custodian of information who are expected to acquire, organize, disseminate information to users and should abide by the ethics guiding the use of ICT. Their adherence to the ethics will be determined by their awareness and knowledge of the ethics guiding the use of ICT which is referred to as cyberethics. The level and awareness of LIS doctoral students in Nigerian universities about cyberethics has not been adequately researched upon. Therefore, this study investigated the current level of awareness and knowledge that LIS doctoral students have about cyberethics.

Research questions

The following questions guided the research:

1. What is the level of awareness of cyberethics by LIS doctoral students?
2. How knowledgeable are the doctoral students about cyberethics?
3. What is the adherence of the doctoral students to cyberethics using PAPA framework (property, accuracy, privacy and access)?

Theoretical framework

PAPA framework is the anchor for this study. PAPA framework was conceived by Mason (1986) about the personal harm that may result from the unethical use of information technology and it has four categories that deal with ethical issues for the information age: privacy, accuracy, property and access (PAPA). Woodward et. al., (2010) reported that these four categories are still relevant and explained privacy as the ability of an individual to decide what information to keep secret, what to share and that what is shared will be confidential. Accuracy dealt with who was responsible for information being accurate and authentic and retribution should be done to those who were negatively affected through erroneous data or information. Property in the framework involves “intellectual property right, including those not necessarily protected by law” and physical property such as the information carriers. This

identifies who owes information and how compensation is determined. Access “dealt with the right or authority to obtain information” (Woodward et. al., 2010).

Different studies have investigated one or two of PAPA constructs, but the only reported study that considered the four constructs was Conger et. al. (1995) as reported by Woodward et. al. (2010). Conger et. al. (1995) analysed 12 factors which they classified into five groups and reported that three of Mason’s construct: privacy, access and property aligned with their findings, although property was defined as concept of ownership. The fourth group was different from Mason as it considered “responsibility for accuracy”, while the fifth one was motivation which Mason did not have in his construct.

Harris (2000) developed his instruments around Mason’s PAPA and measured student attitudes towards IT related ethical issues and found that there was an increase in sensitivity towards IT ethical issues as academic training increased. Another study by Peslak (2006) on 200 individuals affirmed that the four original PAPA issues were still timely and relevant ethical concerns. The four issues in PAPA framework are relevant to LIS doctoral students who will graduate and become information professionals, managers of information centres or lecturers who have to ensure that cyberethics is endorsed by themselves and their users or clients.

Methodology

The descriptive survey was used and the population consisted of 81 Library and Information Science (LIS) doctoral students from two universities in Nigeria: University of Ibadan and University of Ilorin. The LIS doctoral students from University of Ibadan were 70, while those from University of Ilorin were 11. Questionnaire was adapted from the cyberethics scale by Supavai (2014) which explained the PAPA framework.

Results and discussion

Table 1 is on the demographic information of the respondents. It revealed that there are more female respondents in the study in both universities (37 females and 28 males) and none of the respondents were less than 30 years old. However in Ibadan, the oldest respondent was more than 54 years, while the oldest respondent in Ilorin was in the age range of 45-49 years. In both universities, no respondent registered for MPhil programme, but the respondents in Ibadan

registered for both Mphil/PhD (29.6%) and PhD (70.4%), while all the respondents in Ilorin were registered for PhD programme (100%).

Table 1. Demographic Information of Respondents

Variables		Ibadan		Ilorin	
		N	%	N	%
Gender	Male	24	44.4	4	36.4
	Female	30	55.6	7	63.6
Age (years)	<25	-	-	-	-
	25 – 29	-	-	-	-
	30 – 34	6	11.1	2	18.2
	35 – 39	12	22.2	6	54.5
	40 – 44	8	14.8	2	18.2
	45 – 49	14	25.9	1	9.1
	50 – 54	10	18.5	-	-
	>54	4	7.4	-	-
Programme enrolled for:	MPhil.	-	-	-	-
	MPhil/PhD	16	29.6	-	-
	PhD	38	70.4	11	100.0
Years on the programme:	<1	6	11.1	-	-
	1	10	18.5	3	27.3
	2	4	7.4	3	27.3
	3	14	25.9	5	45.4
	4	6	11.1	-	-
	5	4	7.4	-	-
	6	6	11.1	-	-
	7	4	7.4	-	-
	8	4	7.4	-	-

Level of awareness of cyberethics by the LIS doctoral students

The level of awareness of cyberethics was determined through the frequencies from the statements asked in the questionnaire and documented in Table 2. The measuring scale for the level of awareness was: Very Highly Aware (VHA), Highly Aware (HA), Aware (A) and Not Aware (NA). The results indicated that all the respondents in Ilorin were aware of cyberethics, but not all respondents were aware of cyberethics in Ibadan (Table 2). When VHA and HA were merged, respondents in Ibadan were mostly aware about intellectual property (92.6%) and respecting others in an online environment (83.4%), while those in Ilorin were mostly aware of ethical issues of using ICT and social implications of ICT use (100 %). About six respondents

(11.1%) in Ibadan were not aware of acceptable ICT use policy, while all the respondents in Ilorin indicated awareness in all the statements on cyberethics in Table 2.

The doctoral students in both universities were aware of cyberethics, but their level of awareness on different aspect of cyberethics varied. However, the respondents in Ilorin were more aware of cyberethics than those in Ibadan. This may be due to the small number of respondents in Ilorin and their duration on the programme (three years and less) which has made them to be aware of cyberethics as it is being more discussed and researched upon in the last three to four years in literature. This is because of the unethical use of computer and ICT in educational institutions (Ki & Ahn, 2006).

This result is in conflict with the findings of Beycioglu (2009) who reported that students in educational institutions in Turkey are involved in unethical use of computers which meant that they are not aware of cyberethics which is the regulation guiding the appropriate use of ICT. Özer et. al. (2011) concluded from his study on computer teachers' attitudes towards ethical use of computers in elementary schools in Turkey that the teachers violated the ethics of using the computers because they were not aware of such ethics guiding its use. He strongly recommended that the teachers should be taught about cyberethics throughout their programme, that is the ethics guiding the use of the Internet and other ICT and this will invariably make them abide by such ethics.

Level of Cyberethics knowledge by the LIS doctoral students

On the level of knowledge of cyberethics as indicated in Table 3, less than half of the respondents were very highly knowledgeable about intellectual property in Ibadan (44.0%), while 63.6 % of those in Ilorin were very highly knowledgeable of acceptable ICT use policy. When the scale of Very Highly Knowledgeable (VHK) and Highly Knowledgeable (HK) were merged, the same trend occurred in Ibadan as 73.6% of the respondents were still knowledgeable about intellectual property. However, the trend changed in Ilorin, as the respondents indicated that they were also knowledgeable about intellectual property (90.9%) and responsible use of ICT as a priority (90.9%). Respondents in Ibadan were not knowledgeable of acceptable ICT use policy (11.1%), responsible use of ICT as a priority (11.1%) and social implications of ICT use (11.5%). For the scale on not knowledgeable (NK), no respondent in Ilorin was found in this group, but few respondents (2-6) in Ibadan were found in this group (Table 3).

Table 2 Level of Awareness of cyberethics

Statements	VHA		HA		A		UI		UNIL		A		NA	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
I am aware:														
of ethical issues of using information and communication technology	20	37.0	22	40.7	10	18.5	2	3.7	-	-	11	100.0	-	-
about intellectual property	30	55.6	20	37.0	4	7.4	-	-	5	45.4	5	45.4	1	9.1
of acceptable ICT use policy	12	22.6	26	48.1	10	18.5	6	11.1	-	-	10	90.9	1	9.1
responsible use of ICT as a priority	18	33.3	22	40.7	10	18.5	4	7.4	-	-	8	72.7	3	27.3
social implications of ICT use	18	33.3	20	37.0	14	25.9	2	3.7	-	-	11	100.0	-	-
of respecting others in an online environment	20	37.0	26	48.1	6	11.1	2	3.7	3	27.3	7	63.6	1	9.1
of privacy in the use of ICT	18	33.3	22	40.7	10	18.5	4	7.4	2	18.2	8	72.7	1	9.1
copying software or copyright violation is wrong	26	48.1	18	33.3	6	11.1	2	3.7	-	-	9	81.8	2	18.2

Table 3 Level of Knowledge of cyberethics

Statements	VHK		HK		K		UIN		UNIL		K		NK	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
I am knowledgeable about:														
ethical issues of using information and communication technology(ICT)	8	15.4	24	46.2	18	34.6	2	3.8	-	-	6	54.5	5	45.4
intellectual property	24	44.4	16	29.6	14	25.9	-	-	-	-	10	90.9	1	9.1
acceptable ICT use policy	12	22.2	24	44.4	12	22.2	6	11.1	7	63.6	-	-	4	36.4
responsible use of ICT as a priority	12	22.2	26	48.1	10	18.5	6	11.1	-	-	10	90.9	1	9.1
social implications of ICT use	8	15.4	22	42.3	16	30.8	6	11.5	-	-	8	72.7	3	27.3
respecting others in an online environment	18	33.3	26	48.1	10	18.5	-	-	3	27.3	5	45.4	3	27.3
privacy in the use of ICT	10	19.2	24	46.2	16	30.8	2	3.8	-	-	9	81.8	2	18.2
copying software or copyright violation is wrong	16	30.8	26	50.0	8	15.4	2	3.8	2	18.2	5	45.4	4	36.4

Respondents in Ilorin were more knowledgeable in cyberethics than those in Ibadan. However, the respondents' level of knowledge about different aspect of cyberethics varied in both universities. This can be attributed to the fact that more than three quarters of the respondents in both universities were highly aware of cyberethics and this translated to their acquisition of the knowledge in their use of ICT for their research and other academic activities. This affirms the findings of Igwe and Ibegwam (2014) that cyberethics education is necessary for all citizens including doctoral students as this will facilitate good and moral behavior in their use of computer and ICT. Doctoral students with good cyberethics education will be knowledgeable in the appropriate use of ICT and will not violate the ethics when using ICT for their academic activities.

The result disagrees with those of Akbulut et. al. (2008) who affirmed that inappropriate use of technology in education is presently a research focus for many researchers in ethics. This is a research focus due to the observance that technology for teaching and learning is now a common phenomenon in higher institution and students and lecturers are not using technology appropriately. This could be because they do not have the requisite knowledge of cyberethics.

Adherence of the doctoral students to cyberethics using PAPA framework

The LIS doctoral students were examined about cyber ethics using PAPA framework by asking questions on all the issues in PAPA framework which consists of four: property, accuracy, privacy and access (Table 4). The measuring scale used was a four point Likert scale measuring the importance of cyberethics on a scale of 4-1 of Strongly Agree (SA) = 4, Agree (A)= 3, Disagree (D) = 2 and Strongly Disagree (SA) = 1 and frequencies were calculated (Table 4).

On property, respondents who indicated that they often downloaded files such as videos, movies, games and songs for free from the Internet (P 1) and often share files with others (P 2) were highest when strongly agreed and agreed were merged in both Ibadan (76%, 70.8%) and Ilorin (100%). More than half of the respondents in both Ibadan (53.8%) and Ilorin (72.7%) strongly disagreed to using people's articles without acknowledging source (P 7). The result implies that the doctoral students are aware of the intellectual rights of the authors and that it should be protected.

Table 4: Respondents' adherence to PAPA FRAMEWORK

Variable	SA		A		D		UI		UNIL		A		D		SD	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Property: P1	16	32.0	22	44.0	8	16.0	4	8.0	11	100.0	-	-	-	-	-	-
P2	10	20.8	24	50.0	14	29.2	-	-	8	72.7	3	27.3	-	-	-	-
P3	10	20.0	12	24.0	26	52.0	2	4.0	-	-	-	-	-	-	11	100.0
P4	2	3.8	20	38.5	22	42.3	8	15.4	-	-	11	100.0	-	-	-	-
P5	4	7.7	10	19.2	30	57.7	8	15.4	-	-	-	-	-	-	11	100.0
P6	2	3.8	24	46.2	22	42.3	4	7.7	-	-	-	-	11	100.0	-	-
P7	-	-	4	7.7	20	38.5	28	53.8	-	-	3	27.3	-	-	8	72.7
P8	4	7.7	20	38.5	14	26.9	14	26.9	-	-	-	-	11	100.0	-	-
Accuracy: A1	-	-	26	50.0	18	34.6	8	15.4	3	27.3	-	-	8	72.7	-	-
A2	4	7.4	14	25.9	28	51.9	8	14.8	-	-	-	-	11	100.0	-	-
A3	14	26.9	26	50.0	10	19.2	2	3.8	-	-	11	100.0	-	-	-	-
A4	-	-	4	7.7	30	57.7	18	34.6	-	-	-	-	11	100.0	-	-
A5	12	24.0	34	68.0	-	-	4	8.0	-	-	11	100.0	-	-	-	-
Privacy: PR 1	6	11.5	16	30.8	18	34.6	12	23.1	-	-	11	100.0	-	-	-	-
PR 2	12	23.1	8	15.4	20	38.5	12	23.1	-	-	-	-	11	100.0	-	-
PR 3	8	15.4	12	23.1	22	42.3	10	19.2	-	-	-	-	11	100.0	-	-
PR 4	12	23.1	8	15.4	20	38.5	12	23.1	-	-	-	-	11	100.0	-	-
PR 5	6	11.5	8	15.4	24	46.2	14	26.9	-	-	-	-	11	100.0	-	-
PR 6	12	23.1	4	7.7	16	30.8	20	38.5	-	-	-	-	11	100.0	-	-
Access: AC 1	8	14.8	20	37.0	12	22.2	14	25.9	-	-	-	-	11	100.0	-	-
AC 2	14	25.9	26	48.1	4	7.4	10	18.5	-	-	11	100.0	-	-	-	-
AC 3	10	18.5	14	25.9	16	29.6	14	25.9	-	-	-	-	11	100.0	-	-
AC 4	6	11.5	14	26.9	20	38.5	12	23.1	-	-	-	-	11	100.0	-	-

This result indicates that the students are informed about cyberethics and its consequences for its violation and therefore, will not want to be associated with such behaviour which could negatively affect their academic pursuit if caught and brought to face the law. The high adherence to the property construct in the PAPA framework could be as a result of the high knowledge level of cyberethics possessed by the doctoral students. This result supports those of Woodward et. al.(2010) who reported that property misuse occurred among Information Technology (IT) undergraduates in four countries (America, Britain, Germany and Italy) and majority of these students could be classified into the low risk property group because they misused the property construct due to the personal gain that can be accrued from using ICT and the low penalty for its consequences.

Almost all the respondents in Ibadan (92.0%) indicated that some of the information on the Internet is not renewed regularly, while all the respondents in Ilorin (100%) also agreed to this on the issue of accuracy (A5). The doctoral students need current information for their research and other academic activities and a ready source of that is the internet and when they search for information and retrieve it only to discover that such information is not current can be disturbing. Academic information should be updated regularly for these students to use. Over 75% of the respondents in both universities attested to the ability to find the required information very easily on the Internet (A 3, Ibadan: 76.9%, Ilorin: 100%). This is expected as this group of students has first and second degrees and would have acquired some information literacy skills which facilitate their ability to retrieve relevant information easily from the Internet.

For privacy, over 70% of the respondents in both universities, Ibadan (73.1%) and Ilorin (100%) disagreed to entering other people social networking site without authorization (PR 5) and the highest no of respondents in Ibadan (69.3%) and all in Ilorin were found not to use other people's password to access information from the Internet (PR 6). The doctoral students are aware of the relevance of privacy of people's right and should not go against such right by using sites or password without permission. The findings reveal that the LIS doctoral students are knowledgeable about protecting the privacy of other individuals. With the increased use of the Internet which enables access to so much information, it is important that the doctoral students realise the importance of protecting the rights of individuals in their use of the Internet and other ICT. This aligns with Mason's (1986) privacy issue, Conger et. al. (1995) and Woodward et. al.

(2010) who all strongly recommended that the right of an individual should be protected when using ICT.

When access was considered, only 74% of the respondents in Ibadan and all in Ilorin indicated that they do not use unauthorized banned website (AC 2), while only about half of those in Ibadan (51.8%) and none in Ilorin accessed the Internet freely in their institution (AC 1). This reflects that the respondents knew the implication of using a banned website and that accessibility to information on the internet was hindered when the doctoral students were in their universities as it involves paying a fee to access the internet.

The study by Peslak (2006) on Mason's framework using faculty, students and administrators as respondents revealed that the four issues: property, accuracy, privacy and access were still relevant after two decades that Mason's framework was discovered. The author also found out the importance of these issues and reported that privacy, followed by access and accuracy and lastly property was the order of importance of these issues in the framework and therefore, confirmed the relevance of these four issues to cyberethics.

Conclusion and Recommendations

Use of technology by doctoral students is globally accepted as it facilitates the searching and retrieval of information needed for their academics and consequently the successful completion of their doctoral programmes. The need to be aware and knowledgeable about the ethics surrounding the use of ICT is therefore, important. LIS doctoral students are aware and possess the knowledge about cyberethics and have adhered to all the four issues in the PAPA framework which comprise property, accuracy, privacy and access. The PAPA framework adopted for the study is common in the consideration of cyberethics. However, it is recommended that cyberethics education should be provided to these students by the librarians to enable continuous adherence to cyberethics during their programme and after graduation.

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