THE NEED FOR INTEGRATION OF INFORMATION ETHICS IN UNDERGRADUATE PROGRAMMES: A CASE STUDY OF TUDARCo

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Abstract

The main objective of this study was to assess the need of integrating Information Ethics in undergraduate programmes in universities. Tumaini University Dar es Salaam College (TUDARCo) was used as a case study. The study was guided by three objectives: first, to examine the awareness of information ethics. The second objective aimed at determining the importance of integrating information Ethics in undergraduate progrommes. Third objective identified the challenges of integrating information Ethics in undergraduate programmes at universities. A phenomenological inquiry approach (Creswell 2013) was most appropriate for this study; given its focus on teachers and students experience and perception of Information Ethics at TUDACo. The study used interview to collect data from teachers and questionnaire for students. Data was processed using the software package (SPSS version 20) in which descriptive statistics methods such as frequencies and mean were used. The results from the study revealed that there is relative advantage of integrating Information ethics to the undergraduate programmes. It was noted that majority of respondents were aware about information ethics. Students need information ethics so as to prepare them to be ethical professionals. Advantages of information ethics, students are expected to have personal ethics such as avoiding plagiarism. Also through information ethics, graduates will be ethical in turn will promote development in different sectors. Challenges also were identified such as security, privacy, copy right infringement, digital divided, rigidity among lecturers and IT advancement. The study recommends the need to all faculties to team up with Department of information studies to share the experience.

Key words*: Information Ethics: Sustainable Development*

Introduction

During the past several decades the robust and rapidly growing field of computer and information ethics has generated new university courses, research professorships, research centers, conference, workshops, professional

organizations, curriculum materials, books and journals. As the time goes on, information Ethics started to be used in information science, computer ethics and management information system. According to Capuro (2012), Computer and Information Ethics states the importance of ethics in variety topics which are computer crime, copyright, privacy, software reliability, artificial Intelligence and E-commerce.

Consequently information and communication (ICT) has affected in good ways and bad ways, community life, family, life and human relationship. The more specific term computer ethics has been used to refer to applications by professional philosophers of traditional Western theories like utilitarianism or virtue ethics to ethical cases that significantly involve computers and computer networks. Computer ethics also has been used to refer to a kind of professionals apply codes of ethics and standards of good practice within their profession. In addition other more specific names like cyber ethics and internet ethics have been used to refer to aspects of computer ethics associated with the internet.

Statement of the Research Problem.

In the rapidly changing environments in which information professionals work and in which iSchool educators teach, ethical issues are increasingly being raised, demanding attention and efforts toward resolution. Of particular interest for iSchools and the information field are those related to information throughout its life-cycle. Originally called the ethics of information in society, this topic has more commonly been referred to as Information Ethics (IE) . Beginning in 1997, conferences on the Ethics of Electronic Information in the 21st Century were held at the University Memphis.

Lipchak, (2002) describe that information ethics system need to have characteristics which are determining information needs, consider intellectual property, creating and acquiring information, distributing and sharing records and information, evaluating and using information to solve problems and documenting activities and actions. Other characteristics include determining responsibility for managing and protecting records, identifying, organizing, storing and disposing records, training and other resources and evaluating the performance of the record system. There is a need to introduce or integrate information ethics in undergraduate programs so as to groom ethical professionals not only who will value ethical issues in information services but also ethics in general. The purpose of this study was therefore based on identifying the awareness of students on Information Ethics and how they can benefit from it when added to their courses.

Research Objectives
The main objective of this study was to assess the need of integrating Information Ethics in undergraduate programmes a case study at Tumaini University Dar es Salaam College. The specific objective of the study aimed to.

i) Examine the awareness on information ethics at Universities by students of undergraduate programmes.

ii) Determine the importance of integrating information ethics in undergraduate programmes

iii) Identify the challenges of integrating information ethics in undergraduate programmes.

Literature Review

Introduction

It has been proved that advancement in information technology is accompanied by at least one ethical quandary. From Face book to email updates, computer users are unaware of the fine balance between ethics and profit struck by providers. Software developers, businesses and individuals must think about the rights and wrongs of using information technology every day. The fundamental issues underlying the world of information technology are the end user's expectation of privacy and the provider's ethical duty to use applications or email responsibly. According to Carbo (2010), Information ethics is the field that investigates the ethical issues arising from the development and application of information technologies. It provides a critical framework for considering moral issues concerning informational privacy, moral agency (e.g. whether artificial agents may be moral), new environmental issues (especially how agents should one behave in the info sphere), problems arising from the life-cycle (creation, collection, recording, distribution, processing, etc.) of information (especially ownership and copyright, digital divide). Information Ethics is related to the fields of computer ethics and the philosophy of information. Dilemmas regarding the life of information are becoming increasingly important in a society that is defined as "the information society". Information transmission and literacy are essential concerns in establishing an ethical foundation that promotes fair, equitable, and responsible practices. Information ethics broadly examines issues related to ownership, access, privacy, security, and community. Kerr, Michael (2010) Information technology affects fundamental rights involving copyright protection, intellectual freedom, accountability, and security, Joan Reitz M. (2010). A new field has recently sparked a great deal of attention from philosophers all over the world. With the explosion of the Internet into the most widely used information medium today, the need to study the correct computer ethics has become imperative to our future as computer users. As the technology underlying computers continues to change, so to must our way of going about ethically using computers to further our society. There are many different areas where the study of computer ethics could be considered applicable.

The use of computers in large corporations is just one sector of computer ethics that needs to be fully understood. As computers are essential to the way big

business makes their yearly profit, they can also serve to be enticing devices for employees to use as their own personal hubs for entertaining themselves. Many people have lost their jobs due to their complete lack of ethical behavior in the realm of using their computer at work for strictly business purposes. In large corporations, it becomes more difficult to monitor individual usage, and it is wasting upper-level management's time to have to deal with a computer ethics issue, Carbo (2008). There is also the matter of using computers for criminal reasons. Due to the very nature of the information that is transferred through computers, they lend themselves to being targets for unsavoury characters to attempt to exploit. From implantable viruses to the most advanced hacking software, criminal behavior in relation to the use of computers is a burgeoning problem that has been, and will continue to be, stringently addressed. While the study of computer ethics is not necessarily an exact science, it continues to develop and progress as more information becomes available about the technological power that computers can harness. As the world continues to rely more and more on the transmission of data between computer systems, computer ethics will undoubtedly become more of a focus for many of the world's most schooled philosophers.

The field of computer ethics is a new and growing one. Computer ethics is a recent development, closely related to information ethics. The two fields are related like the concepts of theory and practice. The conceptual foundations of computer ethics are investigated by information ethics, while the practical applications of information ethics are carried out by computer ethics. Some common questions addressed by both fields have to do with copyright infringement of software, such as online music and movie piracy.

An Overview of Information Ethics in Developed Countries.

According to Capuro (2006) America in the mid of 1940s, there was development in science and philosophy that led to creation of new branch of ethics that was named as Computer Ethics or Information Ethics. Capuro, explain that during the Second World War together with his colleagues helped to develop electronic computers and other new and powerful Information Technologies. While involved in war efforts, Wiener and other colleagues created a new branch of applied science that Wiener named it as cybernetics. When the war was raging, Wiener foresaw enormous social and ethical implications of cybernetics combined with electronic computers. He predicted that at the end of the war, the world will pass through a second industrial revolution and automatic age that different potential for good and for evil that will generate a number of new ethical challenges and opportunities.

In 1948, Wiener wrote the book Cybernetics in which he explained new branch of applied science and identified some social and ethical implications of electronic computers. Later on in 1950, Norbert produces a book The Human Use of Human Beings in which it explored a number of ethical issues that

computer and Information Technology would likely generate. The issues discussed in those two books include topics that are important today that are computers and security, computers and unemployment, responsibilities of computer professionals, computers and religion, information networks and globalization, teleworking, merging of human bodies with machines, robot ethics and artificial intelligence.

Wiener did not think of creating new branch of ethics and did not provide metaphilosophical comments about what he was doing while analyzing an information ethics issues or case. Instead he directly analyzes. He had his own way of analyzing information ethics issues and resolving them. The methodology in information ethics that he uses were, identify an ethical question or case regarding the integration of information technology into society. Typically this focuses upon technology- generated possibilities that could affect life, health, security, happiness, freedom, knowledge, opportunities or other key human values. Clarify any ambiguous ideas or principles that may apply to the case or the issue in question. If possible, apply already existing, ethically acceptable principles, laws, rules and practices that govern human behavior in the given society. If ethically acceptable precedents, traditions and policies are insufficient to settle the question or deal with the case, use the purpose of human life plus the great principles of justice to find a solution that fits as well as possible into the ethical traditions of the given society.

This way of doing information ethics does not require the expertise off a trained philosopher even though sometimes expertise might prove to be helpful in many situations. Any person who functions successfully in reasonably just society is likely to be familiar with the existing customs, practices, rules and laws that govern a person's behavior in that society and enable one to tell whether a proposed action or policy would be accepted as ethical. So those who must cope with the introduction of new information technology whether there are computer professionals, business people or teachers is a must.

In 1976, Wiener M, noticed some ethical questions and problems that exist in different field, that would not have existed if computers had not been invented. He concluded that there should be another branch of applied ethics to field like business ethics. He later developed an experimental computer ethics course designed for students in University level computer science programs. The course was very successful.

In 1995, Floridi (2008), combined ideas of Wiener to bring the term Information Ethics. In developing the theory of Information Ethics, Floridi argued that the purview of computer ethics indeed of ethics in general should be widened to include much more than simply human beings, their actions, intentions and characters. He offered macro ethics which is similar to utilitarianism, deontologism, contractualism and virtue ethics because it is intended to be applicable to all ethical situations. On the other hand Information Ethics is

different from these more traditional Western theories because it is not intended to replace them but rather to supplement them with further ethical considerations that go beyond the traditional theories and that can be overridden, sometimes by traditional ethical considerations. The name information ethics is appropriate to Floridi's theory because it treats everything that exists as informational objects or processes.

Floridi's Information Ethics theory based upon the idea that everything in the info sphere has at least a minimum worth that should be ethically respected even if that worth can be overridden by other considerations, the theory suggested that there is something even more elemental than life namely being, that is the existence and flourishing of all entities and their global environment and something more fundamental than suffering namely entropy. The theory holds that the being or information has an intrinsic worthiness. It substantiates this position by recognizing that any informational entity has a Spinozian right to persist in its own status and a Constructionist right to flourish example to improve and enrich its existence and essence. James M, (2005) produced a classic paper known as 'What is Computer Ethics?' This was published in a special computer ethics. The approach is practical theory that provides a broad perspective on the nature of Information Revolution. This later led to existence of Information Ethics.

An Overview of Information Ethics in Developing Countries.

Based on Houtondji (2002) ideas in most of African countries Information Ethics is a young academic field. Not much has been published on the role that African philosophy can play in thinking about the challenge arising from the impact of ICT on African societies and culture. Most research on ICT from an ethical perspective takes it from Western philosophy. According to Broodryk,(2004), explains the concept of Ubuntu in Africa which has relationship with Information Ethics. Ubuntu refers to African worldwide that drives much of African values. Ubuntu has ethical principle that has already been applied in South Africa such as politics, business which consist of team work and collective learning. Also corporate governance that consist of fairness and collectiveness. Main moral responsibility of African academics is to enrich African identities by re-creating African Information and Communication traditions.

On the other hand Adam (2005) point out that information ethics is the field that investigates the ethical issues arising from the development and application of information technologies. It provides a critical framework for considering moral issues concerning information privacy, moral agency(example whether artificial agents may be moral), new environmental issues (especially how agents should behave in the info sphere), problems arising from the life-cycle (creation, collection, recording, distribution, processing) of information,

especially ownership and copyright in the environment of digital divide). Indeed this aspect in Africa is still challenging.

An Overview of Information Ethics at University.

According to Woodward D, (1990) in developed countries, Information Ethics is used as a tool which led to professional Ethics. In University, it is designed to help students to develop skills and knowledge that help in engaging in ethical issues in their working lives. In some universities, the course is taught online, making it appropriate and available for employees who are studying. The course has attracted students from background in Law, Engineering, Actuarial Finance management, Business management and University administration.

According to Miller (1971), lecturers at university level, the first moral obligation of lectures is to prepare, teach and evaluate students effectively. This would include preparing course outlines, schemes of work and setting and marking course work and examinations. Miller again insists the good qualities of an ethically based lecturer; coming to work regularly and on time, being well informed about their student and subject matter, planning and conducting classes with care, regularly reviewing and updating instructional practices, cooperating with, or if necessary, meeting and discussing with parents of underachieving students; cooperating with colleagues and observing school policies so the whole institution works effectively, tactfully but firmly criticizing unsatisfactory school policies and proposing constructive improvement.

Floridi (2006), argued that information ethics is a necessary part of undergraduate information literacy education, particularly at the introductory level. Many research practices taught at this level are, at their base, ethical considerations- proper citation, for example and the ethical dimensions of these skills should be made explicit. Even the simplest bibliographic research is deeply entangled in the increasingly complex realities of the information society.

Goldman (2000) explained that there is more debate over the extent to which universities can develop students' ethical behavior and social responsibility than any other graduate skills or attributes. They are not really skills rather they are attribute or qualities yet there is no doubt they can be learned and developed in a university context. Most universities have a policy on Academic misconduct, in which ethical behavior and social responsibility are discussed. An understanding of ethics, social responsibility and cultural diversity provides students with the ability to consider the impact of their conduct and actions. At university students are required to behave ethically and responsibly in relation to cheating in examinations or assessment items, acknowledging the intellectual property rights of others, falsifying or improperly obtaining research data and assisting other students to cheat. Students are also expected to treat university

staff with courtesy at all times contribute to a culture of respect and tolerance between students and demonstrate respect for difference. Students need to become aware of the values and attitude that underpin human behavior. By learning to think critically, questions assumptions, make informed decisions and use reason, students can develop the abilities necessary to function as ethical and socially responsible citizens. It is not the university's role to tell students what to do in relation to ethical behavior and social responsibility. The university's role is to help students make their own decisions by stimulating discussion. Universities are charged with the task of helping people to develop to the fullest potential and be the best they can personally be. It is not the university's role to do that for its students but to help the students do that for themselves. A university education should enable graduates to make a positive contribution to their communities.

An Overview of Information Ethics in Tanzania.

Information and communication technology (ICT) is of strategic importance and essential functional requirements for many institutions of higher learning. In Tanzania, ICT is achieving a breakthrough in management and teaching of online learning, which helps to cater for the increased student population. However the security of the information being processed, stored and exchanged is a growing concern to the management as the dependence on ICT for most of the institutions' core services functions is increasing. In Tanzania Information ethics has developed its own version of consideration. Every advancement in information technology is accompanied by at least one ethical quandary. Mostly in Tanzania computer users are unaware of the fine balance between ethics and profit struck by providers. Software developers, businesses and individuals must think about the rights and wrongs of using information technology every day. The fundamental issues underlying the world of information technology are the end user's expectation of privacy and the provider's ethical duty to use applications or email responsibly. Tweve (2013) comments that information ethics is very useful simply because, it is useful in technology for security purpose and by which we can't do any illegal work. It is very useful to create a good reputation in any organization or any field that is why there is a need to follow code of ethics in each and every field. However, many universities in Tanzania have not integrated information ethics in undergraduate programmes.

Importance of Information Ethics at University

According to Carbo (2000) describe the importance of Information Ethics such as, help to know how to create, find, manage, access, preserve and use of information effectively provide with information professional. In details Carbo described that to students it build them to know how to be good creators, managers and users of information properly without practicing illegal practice

such as plagiarism. Plagiarism is said as the main problem in information sector so as students they have to be prepared so as to be good professionals.

Help in becoming professional librarians and information professional; Information ethics is said to be among the important pillar in helping the students to be professional librarians for those who are studying library studies. For this reason shows that information ethics is very important and students must learn that in order to achieve well.

Help in maintaining of code of ethics; the whole information ethics helps both students and lectures to maintain the code of ethics. In any place whether it is organization or university ethics must be maintained. And in order to maintain information ethics is said to be used since it is related much with different courses.

Addition of knowledge to students; based on Carbo (2000) agreed that information ethics add knowledge to students since they will be able to learn different other things according to their courses. This mainly helps in building their professional and be more useful in jobs in future days. Precisely, the same Carbo further described that all professional associations in place have to guide and form practitioners behavior and enable them to resolve ambiguous or contentious issues concerning ethical conduct.

Challenge of Integrating Information Ethics at University

Smith (2010), the field of information ethics is dedicated to the critical reflection on the ethical values and practices related to the production, storage and distribution of information, as well as the ethical implications of the information systems, infrastructures and policies increasingly embedded in modern culture and society. The scope of information ethics encompasses the broad relationship between information and human right and responsibility, including ethical issues related to information production, information collection and classification, information storage, access and dissemination, information law and policy. Thus information ethics has become a central concern among information professionals as well as its standards used to accredit graduate programs in library and information studies.

Despite the recognition of information ethics by professional organizations and accrediting authorities, coupled with calls for the integration of information ethics courses in undergraduate programmes. Example in America the studies shows that in their library, programs offered courses and only a few of these programs required students to take a course on information ethics.

Also Smith (2010) described that while renewed attention on integrating information ethics within graduate library studies programs is both welcome and necessary, it is only a partial solution to ensuring that future information professional and the users they interact with participate appropriately and ethically in our contemporary information society. Along with focusing on

graduate Library studies curricula, information ethics must become infused in multiple and varied educational contexts, ranging from elementary and secondary education, technical degrees and undergraduate programs, public libraries, through popular media and within the home.

Fallis (2007) described that teaching information ethics in these diverse setting and contexts brings numerous challenges and requires new understandings and innovative approaches. Panel of educators and researchers were convened to foster a discussion in how to best incorporate information ethics education across diverse contexts, how to develop innovative educational methods to overcome the challenges these contexts inevitably present.

According to Froehlich (1992) describe one of the challenge of Integrating information Ethics at University in America is how to make the course attractive and relevant to students. This means if the course is to be integrated is to make it relevant to students for easy understanding. Again Froehlich goes far by explaining 'Practice what you preach'. This is to insist on how to make the course relevant for easy understanding of Information Ethics.

Methodology

A phenomenological inquiry approach (Creswell 2013) was most appropriate for this study; given the fact that its focus on teachers and students experience and perception of information ethics. In light of the area of the study was conducted at TUDARCo. The researcher used a case study design because the case study design enabled the researcher to review deeply few cases in the curriculum used to show how information ethics is covered. Qualitative and quantitative research approaches were employed during the research. Qualitative research approach was largely employed. Qualitative approach was used because the approach gives an opportunity for problems to be studied in some depth and quantitative enabled the researcher to collect facts and study their relationships in order to find sources and solutions of the facts. The approach enabled the researcher to use different methods such as interviews and questionnaire during data collection. Flexibility when using qualitative method may allow day-to-day correction of the problems arose during the study. This enabled the researcher to amend and modify the structure/plan of the study as the research process proceeded.

The targeted population for this study was divided into two groups of people namely lecturers and students. Both groups were asked questions related to awareness on the concept of information ethics and its importance to students in general. The sample size of the study comprised 50 students and ten lectures from Department of information studies. Students were randomly selected from second year and third year while lecturers were purposely selected. Interview was used for lecturers and questionnaire for students as methods for data collection. Data were analyzed by using SPAA software version 20.
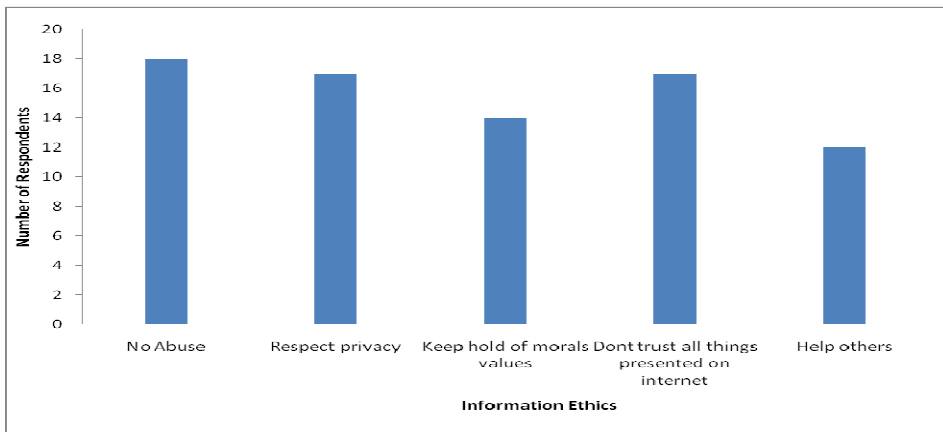
Findings and discussion

This section generally put forward what the researcher entirely found in the field with reference to objectives of the study. It gives the summary of the selected statistics for the overview purpose. It provides comprehensive discussion on the importance of integration of information ethics into undergraduate programmes. Finally it presents the findings on the challenges facing TUDARCo or any university in integrating Information ethics in the undergraduates programmes. Recommendations to be adopted by students and universities about the best way to integrate information ethics in the undergraduate programmes not only in Tanzania but also in any university in Africa have been suggested.

Awareness of Information Ethics at University

The first objective of the study aimed at finding out if the students and lecturers are aware on information ethics being and its benefits. The first question asked respondents if they are aware with information ethics. The findings show that majority 35(70%) of students and all 100% of lectures said they are aware about it. Another question asked to students to point out general benefit of information ethics. The summary of their responses has been summarized in Figure 1 below.

Figure 1: General benefits of Information Ethics

Source: Field Data (2017.)

Notwithstanding the diverse range of benefit of information ethics has, based on the data presented in the findings above, discussions can be made on main benefit of information ethics has to students and lecturers as follows:

No abuse: One of the key findings of the current study is that information ethics expose to students and lecturers that no abuse of information provided. Indeed, many of the students as figure 1 above indicates pointed out that no abuse constituted one of the general benefit of information ethics. Lawton (2013) asserts that critical judgement of the value of information without abuse is guided with information users' understanding of it. He further comments that code of ethics and knowledge of information ethics guide an individual to be ethical. Therefore, information ethics and the code of ethics is imperative in encouraging good behaviour based on integrity approaches.

Respect of privacy: Data from the study show that many of the students and few lecturers in the interview reported that information ethics at university under review were at times students were taught to respect privacy. Lecturers, on their part, when they were asked about how they protect respect of privacy of individuals to prevent them from controlling confidential information, they answered that students were aware that doing so was against established procedures and regulations but there was no hard and fast rule on how the erring individual can be penalised or punished for such misdeeds. Apart from being disrespect the individual faced, Lawton *et al.* (2013) calls upon the professionals to respect the law. It was recommended that acting according in accordance with the law, guidelines, procedures, respecting the constitution and the supremacy of law. Information professionals would not only make their profession noble but also create conditions for commanding respect from both their peers in and their superiors in their respective ministries.

Integrity of information: The findings show that majority of students comment that do not trust all information on the Internet. Parkinson (2001) noted that information professionals need to safeguard the integrity of their profession by reinforcing desirable behaviour and embracing appropriate change. The current study, on the other hand, noted that more than half of the students and lecturers believed that the information professionals had to contend with inadequate integrity among themselves. The current study concurs with Carr (2000), who argues for the promotion of integrity and ethics at the workplace to give employees a sense of worth, integrity and trust. Similarly, the ICA (2005) opines that information professionals adherence to ethical practices tends to translate into issues of authenticity, reliability, integrity and usability. It appears this is the reality that prompted Musembi (2004) to conclude that information professionals fail to adhere to ethical practices because of lack of support from senior management to recognise that information ethics is vital for fostering accountability, integrity, and efficiency in addition to promoting effective decision-making in any sector.

Importance of Integrating Information Ethics

The researcher asked both respondents (lecturers and students) to identify if there is any importance of integrating Information Ethics in University programs. The study aimed to identify the contribution of Information Ethics to the students at University. Students were given clues of the expected answers while lecturers were open ended question. Table 1 below has a summary of the responses from students.

Table 1: Importance of Information Ethics N= 50

Importance	Frequency	Percent
Promote accountability among students	45	90
Avoid plagiarism	45	90
Improve professionalism	44	88
Graduates be ethical	43	86
Inculcate transparency	42	84
Students to have personal ethics	40	80
Increase commitment among students	40	80
Promote development	38	76
To create and find information effectively	38	76
Improve decision making among students	35	70
Improve quality of education	30	60
Maintain responsibilities among students	25	50
Improves reading habit	24	48

Source; Field Data 2017

The data presented in Table 2 presents a clear picture that there are many aspects attached to the importance of information ethics among students that lead to the following observation:-

To start with, **promote accountability** among student in universities to reduction of unethical or professional practices. It is evidently shown by respondents that integrating information ethics in undergraduate programmes prospect of reducing academic dishonest. For example, cheating or copying others work pretending theirs. As a result, students are given higher marks as a result are given higher GPAs in turn are given higher post in the organizations. Introducing information ethics in undergraduate programmes will solve such practices. Griffin and Roper (1999) argued about a decade ago that students' adherence to information ethics enhances transparency and accountability to the information professionals. On the other hand, Ngulube (2000) notes that without information ethics there could be no accountability, transparency and efficiency,

a situation that creates loopholes for academic dishonest and subsequently loss of confidence to graduates.

Another observation is that **avoid plagiarism** among students at the university; it adds value to user satisfaction in government offices. Findings indicates that many 45(90%) of the students rated highly the importance avoiding plagiarism among students if information ethics is integrated in undergraduate programmes. Similarly lecturers on their part comment that it true that having information ethics courses in undergraduate programmes has helped to avoid plagiarism among students. Marshall (2006) supports the idea of integrating information ethics in university programmes to help students to work diligently. Similarly, Thomassen (2001) observes that without information ethics no effective assessments can be made to students' work and when done it was difficult to establish the set criteria of efficiency and legitimacy among students.

Inculcate transparency; the study findings indicate that many 42(84%) of the respondents rated highly transparency in integrating information ethics in undergraduate programmes. In this respect, majority of lecturers argued that they were transparent in their day to day teaching and other academic operations so as to inculcate transparency among students. Ngulube (2000) underscores the importance of transparency by arguing that without information ethics courses among university students there could be no transparency and efficiency. He further argues that lack of transparency can lead to corruption and loss of confidence among citizens.

Challenge of Integrating Information Ethics
Most of the time, introducing new system or program in an organization or university is a process that may face challenges. In this study, the researcher ask the respondents if they think introducing of Information Ethics in university will face any challenges and what challenges they may face. This section is a result of research objective aimed to identify challenges of integrating Information Ethics in undergraduate programmes. The summary of students' response on challenges summarized in Figure 2 below.
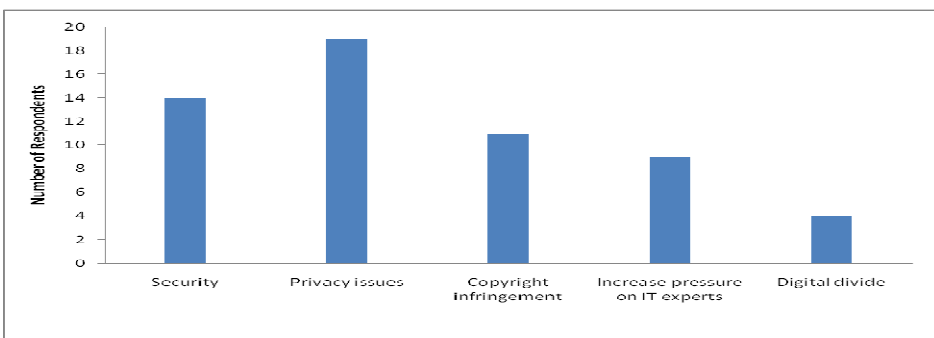
Source: Field data 2017

Figure 2: Challenges of integrating information ethics

Security

With tools like the internet, hackers have found it very easy to hack into any computer or system as long as it is connected on internet. Hackers can easily use an IP (Internet Protocol) address to access a user's computer and collect data for selfish reasons. Also the wide spread of internet cookies which collect information whenever we use the internet , has exposed IT users to high risks of fraud and conflicting interests. Capuro (2006) point out that many big companies use these cookies to determine which products or service they can advertise to us. When it comes to online banking, the transfer of money can easily be interrupted by a hacker and all the money will be transferred to their desired accounts , which affects both the bank and the customers who is using online banking technology. The security also may be affect on information ethics usage among students and lecturers. Universities need to get prepared in advance.

Privacy Issues

As much as information technology has enabled us to share and find relevant information online,. It has also exploited our freedom of privacy. Their so many ways our privacy is exploited. Use of internet webcams, experienced computer users can turn on any webcam of any computer online and they will have access to your private life, many celebrities have been victims of these online stalkers. A good example is Dharun Ravi**a** former Rutgers University student who was spying on his roommate through a webcam. Use of social networks, the main concept of these networks is to connect with new and old friends then share your life with them, however, the loop hole in this is that whenever someone access your shared life data like photos, they can like it and send it their friends who are not your friends, which might expose you to users with wrong intentions to use your data, also some companies are known for spying on their employees via these social networks. The idea of commitment was supported by Kigongo-Bukenya (2007) argues that information ethics increases transparency and commitment among information professionals.

 Copyright Infringement

Information technology has made it easy for users to access any information or artifact at any given time. With the increased development of music sharing networks and photo bookmarking sites, many original creators of these works are losing the credibility of their works, because users of IT can easily gain access and share that data with friends. Free music and file downloading sites are popping up on internet every day , lots of original work like music albums, books , are being downloaded for free. In this case one legitimate user will

purchase the book, software, web template or music album, and they will submit it to a free download site where others will simply just download that data for free. It is good news for the users because it saves them money, but it harms the original creator of these works. The government has closed some of these sites like megaupload.com, but many are popping up using funny URLs. As noted earlier on Carbo (2008) recommends universities to have genuine information systems software to monitor quality work such as software to test plagiarism.

Increased pressure on IT experts

Since information technology systems have to run all the time, pressure is mounted on IT experts to ensure the accuracy and availability of these systems. Many big organizations which need to operate 24 hours will require a standby IT team to cater for any issues which might arise during the course of operation. According to Carr (2002) comment that this pressure results into stress and work overload which sometimes results into imperfection. Integration of information ethics in undergraduate programmes requires enough availability of computers and experts in the library and computer labs.

Digital divide

Information technology has many opportunities and it has shaped many industries in developed countries; however, developing countries have difficulties of enjoying the same benefits of Information technology. To get these benefits universities have to train their labour and users should also adopt the new culture which is a bit costly in these developing countries. In some remote areas they do not even have power, so information technology tools like computers cannot be used. Tweve (2012) argues that in other sectors like education, most of these developing countries have poor old education systems, so a student will not be aware of new information technologies. This situation proves and recommends the need of integrating information ethics in undergraduate programmes to curb such shortcomings.

Conclusion and Recommendations

Conclusion

All in all, the summary of the findings in Figure 1, Table 1 and Figure 2 portray a general picture that integrating information ethics is very important to facilitate quality of education in universities. This facilitation can be only achieved if students adhere to information ethical practices. This observation call upon all academicians and other professionals, to make sure information ethics is integrated in undergraduate programmes. Having graduates with a package of information ethics will have ethical professionals. It has been proved that ethical professionals in all case facilitate development of a particular sector in turn improve national development.

Recommendations

Students should be willing to study this course since it has a lot of benefit. One among the important benefits is that students' behavior will change from academic dishonest to quality education.

University should think of integrating the course of Information Ethics to all programmes not only the programmme of Information studies. This course will be productive since it has benefit to all students and the university. It will build university reputation and help to increase number of students that are joining the university in turn will produce many competent professionals.

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