# Awareness of Cyberethics Among Teacher Educators

*Kanwalpreet Kaur**

## Abstract

*The advancement in computer and information technology demands awareness among academia about cyberethics to use cyber resources responsibly. This study aimed to assess the level of awareness among teacher educators working in Colleges of Education of state of Punjab about various aspects of cyberethics. The descriptive survey method was used to collect data. Results revealed that no significant difference is found in accessibility of cyberspace with respect togender, level of education and academic discipline of teacher educators. A significant difference is found in awareness level of teacher educators regarding maintaining privacy in cyberspace and usage of intellectual property in cyberspace with respect to gender, level of education and academic discipline. The female teacher educators were found to be more aware than their male counterparts to maintain privacy in cyberspace; while male teacher educators having doctorate level of education and teacher educators from discipline of science were more aware to follow rules and regulations regarding usage of intellectual property in cyberspace. The results highlighted the need of training about the cyberethics awareness to strengthen cyberethics awareness level among teacher educators.*

***Keywords:*** *Cyberethics; Accessibility of cyberspace; Privacy in cyberspace; Usage of intellectual property in cyberspace; Teacher Educators.*

***About Author :*** **Assistant Professor, Institute of Educational Technology and Vocational Education, Panjab University, Chandigarh.*

## Introduction

Technology brought radical changes at each level of education. Traditional concept of education, 'learning by doing' has extended by 'doing and making to learn with technology'. Pedagogically, technology facilitated in terms of management, communication, administration, coordination, development, collaboration and distribution of learning activities at all levels of education.

Teachers are preparing lectures and notes by downloading materials from internet, constructing question papers online, emailing assignments, online marking of assignments and answer sheets, declaring students results online, using email to send and receive feedback from students and also providing web links related to course content to students in the classrooms (Jamil &Shah, 2011).

Advancement in information and communication technologies and their frequent access and utilization increased the chance of unethical use of these resources. These unethical uses may harm individuals or even societies. These activities may include hacking, spam, denial of service attacks, identity theft, unauthorized duplication of software, digital plagiarism and improper uses of digital resources (Rolstad, 2003; Brey, 2007; Lee & Chan, 2008).

Advances in computer technology are influenced by human conduct (McCarthy, Halawi, Aronson, 2005); therefore, some code of conduct in the virtual world is required. it is required to expand the definition of ethics to meet the constantly changing technology-driven landscape of human conduct. So, the term computer ethics regarding the use of the computer and information technology (IT)has emerged. Now the terms 'Cyberethics', 'Cyber Laws', 'IT Ethics', and 'Internet ethics' are being used as synonym or alternatives when associated with Internet (Bynum, 2008; Lee and Chan, 2008).

Ethics are not similar to etiquettes or manners neither skills nor knowledge that might be necessary to undertake an occupation but in fact, in simple words, ethics is the question of right and wrong in human conduct (Kizza, 2003). Computer ethics is a cyber-philosophical term. Moor and Bynum (2002) stated that cyber philosophy is the intersection of philosophy and computing. Various authors imply that the ethical question of "what is the nature of right and wrong?" or people's desire to do good and their wish / need to avoid doing harmful behaviour is one of the field questions of that cyber philosophy (Bynum, 1997; Floridi, 2002, 2004).

In the technology driven world, there is need to expand the definition of ethics to meet the constantly changing technology managed human life. In this regard, Zeid (2009) highlighted that computer ethics deals with how to make moral decisions while using technology whether in workplace or in society in general. The social and ethical implications of technology demand special attention and have resulted in the creation of 'ethics'.

Cyberethics is basically the study of the ethics that are relevant to computer networks which is supposed to cover the user's behaviour and its impact on individuals and society. Ramadhan, Sensuse and Arymurthy(2011) described cyberethics as a system of standards that prescribe morality and immorality in cyberspace, signifying the preservation of freedom of expression, intellectual property and privacy. Rama (2014) defined cyberethics as the rules set out for responsible behaviour in cyberspace and it explores the guideline for online conduct that influences the social, political, legal and business affairs. Further, Igwe and Ibegwam (2014) explained cyberethics as the social responsibility in cyberspace, while it is seen as a discipline of using appropriate and ethical behaviours and acknowledging moral duties and obligations pertaining to online environments and digital media.

According to Ki and Ahn (2006), unethical use of information and communication technology (ICT) in education is a serious problem in all educational settings. Educators who deal with technology need to understand the legal and illegal uses of computer to provide ethical models for students. Some of the researchers have argued that whether students and teachers are ethically linked to the world through the use of technology or computers (Prosser & Ward, 2000). Baum (2005) confirmed that the ethical issues that accompany educational technology have become more apparent as more educators have integrated technology into the classroom.

Igwe and Ibegwam (2014) affirmed that cyberethics education is necessary and should be taken with much importance as it will facilitate the integration of moral and responsible behaviour in the citizens (children, youth and adults) in the use of the Internet and surfing the cyberspace. Cyberethics education is defined as an instructional programme that is aimed at inculcating in individual's 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.

Akbulut, Uysal, Odabasi, and Kuzu (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. Beycioglu (2009) highlighted that teachers have not been taught the basic principles of using computers ethically which are vital while using technology in terms of computer ethics.

Giaever, Mifsud & Gjolstad (2016) stated that the legal aspects of cyberethics such as copyrightand privacy are complex and less visible among teachers' approaches to work with cyberethics in class. Its pointed out that teachers had little knowledge of copyright and could not communicate this aspect of cyberethics in teaching. Ozer, Ugurlu& Beycioglu (2011) investigated computer teachers' attitude towards ethical use of computers in elementary schools in Turkey and stressed on computer ethics education during teachers' pre-service and in-service years to improve their ethical sensibilities about computer usage.

Cyberethics is a branch of applied ethics that examines moral, legal, and social issues at the intersection of computer/information and communication technologies. Cyberethics concerns to the code of responsible behaviour on the Internet, just as we are taught to act responsibly in everyday life.

**Objectives of the study:**

- To study awareness among teacher educators about the various aspects of cyberethics.
- To compare the awareness of teacher educators about various aspects of cyberethics with respect to their gender, level of education and academic discipline.

**Research questions:**

- Do teacher educators have awareness about the various aspects of cyberethics i.e. accessibility, privacy and usage of intellectual property in cyberspace?
- Is there any significant difference in the awareness of teacher educators about various aspects of cyberethics with respect to their gender, level of education and academic discipline?

**Method and Procedure:**

- Method of Study: A descriptive survey method was used to study the awareness about various aspects of cyberethicsamong teacher educators working in Colleges of Education in Punjab State affiliated to Panjab University, Chandigarh, Punjabi University, Patiala and Guru Nanak Dev University, Amritsar.

- Sample of Study: The study was conducted in the Colleges of Education of state of Punjab only. In total 165 teacher educators from Colleges of Education of Punjab were selected randomly. The details of sample are given as follows:

| Gender | | Level of Education | | Academic Discipline | |
|---|---|---|---|---|---|
| Male | Female | Doctorate | Post-Graduate | Social Science | Science |
| 67 | 98 | 64 | 101 | 117 | 48 |
| Total = 165 | | | | | |

- Tools used for data collection: A closed- ended Cyberethics AwarenessAssessment Scaleconsisting of forty-four items was developed and validated for collection of responses. The scale had two parts, i.e. part – I was designed to collect demographic information regarding gender, level of education and academic discipline; and part – II was comprised of 44 statements related to various aspects of cyberethics. The scale was developed on three aspects of cyberethics i.e. accessibility, privacy and usage of intellectual property in cyberspace.Cyber accessibility refers to the right or privilege of an individual to obtain data or information from another source by following defined computer security policies and strategies under the legal framework of an organization/ institution. Cyber privacy is the ability of an individual to decide what information to keep secret, what to share and it is the social responsibility of each user to maintain the privacy of a group and institution in cyberspace. The cyberethics related to intellectual property in cyberspace refers to usage of intellectual property available in cyberspace by following the laws concerning the rights of the owners of intangible products of invention or creativity.

  All the items were in the statement form. Positive and negative statements were included in the scale to add variety and reduce the tendency to respond perfunctorily. The items were rated on a five point Likert scale ranging from strongly agree to strongly disagree. The scale was validated with the inputs of experts. During the data-collection process, all respondents were informed about the purpose, time demands, confidentiality and voluntary nature of the study.

**Results and Findings:**

- Analysis of responses of teacher educators on various aspects of Cyberethics AwarenessAssessment Scale: The collected data were assessed descriptively using mean scores. For each statement, a respondent has to respond on a five point Likert scale ranging from strongly agree (5) to strongly disagree (1). The statements having mean values of 3.0 or above would indicate high level of awareness and a mean value below 3.0 would indicate a low level of awareness about the various aspects of cyberethics. Items were grouped according to three aspects of cyberethics and an average of all the means of the items on each aspect of cyberethics (global mean) was used to make inferences and discuss the awareness of teacher educators about the various aspects of cyberethics.
- Research question -1: Do teacher educators have awareness about the various aspects of cyberethics i.e. accessibility, privacy and usage of intellectual property in cyberspace?

  The global mean score on cyberethics awarenessassessment scale is 3.06 of teacher educators, which indicated that teacher educators have good awareness about cyberethics. The mean scores of teacher educators on three aspects of cyberethics awareness are summarised as follows:

**Table1: Results by Mean Scores of Teacher Educators responses on various aspects of Cyberethics AwarenessAssessment Scale**

| Aspects of Cyberethics AwarenessAssessment Scale | Mean Scores |
|---|---|
| Accessibility | 3.42 |
| Privacy | 3.29 |
| Usage of intellectual property in cyberspace | 2.61 |
| **Global mean scores on Cyberethics Awareness Scale** | **3.06** |

The mean scores of teacher educators on the three aspects of cyberethics awareness assessment scale i.e. accessibility, privacy and usage of intellectual property in cyberspace is 3.42; 3.29; and 2.61 respectively which indicated that teacher educators have good awareness about the issues related to cyber accessibility and concerns related to cyber privacy. But on the aspect of usage of intellectual property in cyberspace, a low mean score indicated that they did not have proper knowledge about usage of intellectual property in cyberspace.

- **Research question-2: Is there any significant difference in the awareness ofteacher educators about various aspects of cyberethics with respect to their gender, level of education and academic discipline?**

  To analyse awareness among teacher educators about various aspects of cyberethics with respect to gender, level of education and academic discipline,the independent sample t- test was used for testing the differences between the means of independent groups.
- **Analysis of awareness among Teacher Educators about various aspects of Cyberethics with respect to their Gender:** To compare awareness level of female and male teacher educatorsabout various aspects of cyberethics, the independent sample t- test was used and results are presented in table 2.

**Table 2: Results of Independent Sample t- test**

| Aspects of Cyberethics Awareness | Gender | N | Mean | SD | t-value |
|---|---|---|---|---|---|
| Accessibility of cyberspace | Female | 98 | 9.26 | 2.08 | 0.375 |
| | Male | 67 | 9.39 | 2.33 | |
| Privacy in cyberspace | Female | 98 | 27.63 | 3.99 | 2.45* |
| | Male | 67 | 26.11 | 3.78 | |
| Usage of Intellectual property in cyberspace | Female | 98 | 32.03 | 4.28 | 3.39** |
| | Male | 67 | 34.27 | 3.97 | |

** Significant at 0.05 level of significance ** Significant at 0.01 level of significance*

From table 2, it is evident that t- ratio value for the awareness of female and male teacher educators with various aspects of cyberethics i.e. accessibility of cyberspace; privacy in cyberspace; and usage of intellectual property in cyberspace is found to be 0.375; 2.45; and 3.39 respectively. The results indicated that no significant difference is found among female and male teacher educators regarding accessibility of cyberspace. However, a significant difference is found in awareness level of female and male teacher educators regardingand privacy in cyberspace and usage of intellectual property in cyberspace.

- Analysis of awareness among Teacher Educators about various aspects of Cyberethics with respect to their level of education: To compare awareness level of teacher educators having different level of education about various aspects of cyberethics, the independent sample t- test was used and results are presented in table 3.

**Table 2: Results of Independent Sample t- test**

| Aspects of Cyberethics Awareness | Level of Education | N | Mean | SD | t-value |
|---|---|---|---|---|---|
| Accessibility of cyberspace | Doctorate | 64 | 10.03 | 2.98 | 0.909 |
| | Postgraduate | 101 | 9.58 | 3.17 | |
| Privacy in cyberspace | Doctorate | 64 | 27.92 | 3.45 | 3.22** |
| | Postgraduate | 101 | 26.08 | 3.64 | |
| Usage of intellectual property in cyberspace | Doctorate | 64 | 37.02 | 4.08 | 4.03** |
| | Postgraduate | 101 | 34.21 | 4.53 | |

*** Significant at 0.01 level of significance*

From table 3, it is clear that t- ratio value for awareness among teacher educatorshaving doctorate level of education and postgraduate level of education with various aspects of cyberethics i.e. accessibility of cyberspace; privacy in cyberspace; and usage of intellectual property in cyberspace is found to be 0.909; 3.22 and 4.03 respectively. A significant difference is found in awareness level of teacher educators having doctorate level of education and postgraduate level of education regarding maintainingprivacy in cyberspace and usage of intellectual property in cyberspace.

- Analysis of awareness among Teacher Educators about various aspects of Cyberethics with respect to their Academic Discipline:To compare awareness level ofteacher educators from the academic disciplines of science and social science about various aspects of cyberethics, the independent sample t- test was used and results are presented in table 4.

**Table 4: Results of Independent Sample t- test**

| Aspects of Cyberethics Awareness | Academic Discipline | N | Mean | SD | t-value |
|---|---|---|---|---|---|
| Accessibility of cyberspace | Science | 48 | 10.67 | 1.18 | 1.44 |
| | Social Science | 117 | 10.23 | 1.96 | |
| Privacy in cyberspace | Science | 48 | 28.57 | 3.28 | 4.62** |
| | Social Science | 117 | 26.15 | 2.96 | |
| Usage of Intellectual property in cyberspace | Science | 48 | 37.92 | 2.81 | 5.11** |
| | Social Science | 117 | 35.23 | 3.17 | |

*** Significant at 0.01 level of significance*

From table 4, it is evident that value of t- ratio for the awareness level of teacher educators from the academic disciplines of science and social science with various aspects of cyberethics i.e. accessibility of cyberspace; privacy in cyberspace; and usage of intellectual property in cyberspace is found to be 1.44; 4.62 and 5.11 respectively. The results indicated that no significant difference is found among teacher educatorsof disciplines of science and social science regarding accessibility of cyberspace. However, a significant difference is found in awareness level of teacher educatorsfrom disciplines of science and social science regarding privacy in cyberspace and usage of intellectual property in cyberspace.

## Discussion of Results:

The main objective of the study was to study the awareness among teacher educators working in colleges of education in state of Punjababout cyberethics. The global mean score on cyberethics awarenessassessment scale of teacher educators was 3.02 which showed that teacher educators were aware about cyberethics. As teachers are using internet based sources for preparing lessons, notes, assignments, question papers and other routine works which may probably make them acquainted about cyberethics.

A high mean score of teacher educators on the aspects of cyberethics awareness i.e. cyber accessibility and privacy in cyberspace highlighted that teacher educators had ample awareness about accessibility of Internet and those were aware with the rules and regulations of maintaining privacy in the cyber space. They did not share personal information on unknown websites; not violate other people's privacy; adhere to strict confidentiality rules regarding privacy and proprietary matters; and follow laws, code of conduct, ethical and moral principles in the cyber space.

For the third aspect of cyberethics awareness scale i.e. usage of intellectual property in cyberspace, a low mean score pointed out that teacher educators were not fully aware about the issues of plagiarism, copyright rules and intellectual property rights for using e-sources available in cyber space.

The results of the present study corroborate the findings of Swain and Gilmore (2001)who clarified that all teachers could literally recognize and able to differentiate between the ethical andunethical use of computer and IT resources. But, they required to upgrade their knowledge and information as teachers were not confidently clear in their own concepts in the relevant situations about ethical use of computer and IT. In this regard, Jamil, Tariq & Shah (2013) suggested that universities must provide opportunities for both teachers and students to understand and learn about computer and IT ethics by organizing seminars, conferences, publishing pamphlets, and include it as a major subject in their curriculum in order to save our present and future.

Statistically, no significant difference is found among female and male teacher educators on the aspect of cyberethics awareness i.e. accessibility of cyberspace.On the aspects of cyberethics awareness i.e.

privacy in cyberspace and usage of intellectual property in cyberspace, a significant difference is found among female and male teacher educators.The mean score of female teacher educators was higher on the aspect of privacy in cyberspace of cyberethics awareness scale. It signified that female are more sensitive to maintain privacy. Results of the study are in confirmation with the findings of Adam & Ofori-Amanfo, (2000); Leonard & Cronan, (2005); Namlu & Odabasi, (2007) who found that women act more ethically in maintaining privacy than men. As women are more exposed to immoral/bothersome behaviours than men both in real life and in virtual environment. That is why they are sensitive to ethical and/or moral behaviours. That can be the reason for higher ethical judgment level of women to maintain privacy in the cyberspace.

The mean scores of male teacher educators were higher than their female counterparts on the usage of intellectual property in cyberspace. It indicated that male teacher educators were more conscious about the usage of intellectual property in cyberspace.

The results of the present study indicated that no significant difference was found in accessibility of cyberspace amongteacher educators having doctorate level of education and postgraduate level of education. The mean scores of teacher educators having doctorate level of education were significantly higher than the teacher educators having postgraduate level of educationon the aspects of maintaining privacy in cyberspace and usage of intellectual property in cyberspace.

The findings of the study highlighted that awareness about cyberethics among teacher educators was significantly affected by their level of education. As teacher educators having doctorate level of education got more aware about various aspects of cyberethics and those follow the defined rules and regulations while using cyber space. The results corroborate the findings of Brey (2007) who affirmed that properly acquainted knowledge about computer and computer ethics was also effective to the positive applications of computer and IT ethics by the teachers.

No significant difference is found amongteacher educators from disciplines of sciences and social sciences on the aspect of accessibility of cyberspace. On the aspects of cyberethics awareness i.e. privacy in cyberspace and usage of intellectual property in cyberspace, a significant difference is found among teachers from disciplines of sciences and social sciences.

The mean scores on the aspects of privacy in cyberspace and usage of intellectual property in cyberspace of teacher educators from discipline of science were higher than teacher educators from discipline of social science. It indicated that teacher educators from discipline of sciencewere more aware than teacher educators of discipline of social sciences on the issues of maintaining privacy in cyberspace and about the usage of intellectual property in cyberspace. The results of the present study substantiate the findings of Jamil, Shah and Tariq (2013) who concluded that female students from the disciplines of pure sciences were more positive regarding the ethical use of IT resources.

**Conclusions:**

This study aimed to contribute to the knowledge base of computer ethics in education. Computer ethics is a cyber-philosophical issue and it is a relatively young discipline; hence, it needs time both for reflection and for exploring alternative ethical standpoints in building up its own theoretical framework (Adam and Ofori-Amanfo, 2000). Based on the findings, it is clear that the level of awareness about cyberethics among teacher educators working in colleges of education of Punjab is found to be reasonably good. As majority of the respondents were aware about the existence of code of cyberethics. But those need to be made aware about the computer and IT ethics for using e-resources in a fair manner without violating the norms of plagiarism, copyright and intellectual property right.

Kari (2011) suggested that the universities and governments as well, need to offer a variety of resources to teachers', so they are able to adopt and teach cyber technology ethics, which may contribute to a safer, more secure and more responsible use of cyber technology among students and the population in general. Masrom, Mahmood and Zainon (2013) further advocated that teachers are to be trained about cyber responsibilities in order to provide cyberethics foundation training to students at an early age.

**References:**


Adam, A., & Ofori-Amanfo, J. (2000). Does gender matter in computer ethics? Ethics and Information Technology, 2(2), 37–47. Retrieved July 21, 2017 fromhttps://www.researchgate.net/publication/226950720

Akbulut, Y., Uysal, Ö., Odabasi, H. F., & Kuzu, A. (2008). Influence of gender, program of study and PC experience on unethical computer using behaviours of Turkish undergraduate students. Computers & Education, 51(2), 485–492. doi:10.1016/j.compedu.2007.06.004

Baum, J. J. (2005). CyberEthics: The new frontier. TechTrends, 49(6), 54–55. doi:10.1007/BF02763731

Beycioglu, K. (2009). A cyberphilosophical issue in education: Unethical computer using behavior-the case of prospective teachers. Computers & Education, 53(2), 201–208. doi: 10.1016/j.compedu.2009.01.009

Brey, P. (2007). Computer Ethics in (Higher) Education. Retrieved May 21, 2017 from http://www.utwente.nl/gw/wijsb/organization/brey/Publicaties_Brey/Brey_2007_HigherEducation.pdf

Bynum, T. (2006). Flourishing ethics. Ethics and information technology, 8(4), 157–173. In The Stanford Encyclopaedia of Philosophy. Retrieved November 08, 2016 from https://plato.stanford.edu/entries/ethics-computer/#Bib

Bynum, T. W. (1997). Guest editor's note: Symposium on computer ethics. Metaphilosophy, 28(3), 233–233. doi:10.1111/1467-9973.00052

Floridi, L. (2002). What is the philosophy of information? Metaphilosophy, 35(1-2), 123–145. doi:10.1111/1467-9973.00221

Floridi, L. (2004). Open problems the philosophy of information? Metaphilosophy, 33(4), 554–582. doi:10.1111/j.1467-9973.2004. 00336.x

Giaever, T.H., Mifsud, L., & Gjolstad, E. (2016). Teachers' understanding and practice of cyber ethics in the classroom. Proceedings 9th Annual International Conference of Education, Research and Innovation.doi: 10.21125/iceri.2016.0421

Igwe, K.N.,& Ibegwam, A. (2014). Imperative of Cyber Ethics Education to Cyber Crimes Prevention and Cyber Security in Nigeria. International Journal of ICT and Management, 2(2): 102-113. Retrieved November 11, 2017 fromhttp://www.ijictm.org/admin/html/mail/attach/2014-11-27-06-13-33.pdf

Jamil, M., & Shah, J. H. (2011). Technology: Its Potential Effects on Teaching in Higher Education. New Horizons in Education, 59(1):38–51.RetrievedMay 11, 2017 fromhttps://www.researchgate.net/publication/236150628

Jamil, M., Shah, J.H,& Tariq, R.H. (2013). IT Ethics: Undergraduates' perception based on their awareness. Journal of Education and Practice, 4 (12), 110-122. Retrieved May 20, 2016 from https://www.researchgate.net/publication/260000832_IT_Ethics_Undergraduates%27_Perception_Based_on_their_Awareness

Jamil, M., Tariq, R.H., & Shah, J.H. (2013). Ethical attitudes towards the use of computer and information technology. International Research Journal of Arts and Social Sciences, 2(4), 72-78.Retrieved July 10, 2017 fromhttps://www.interesjournals.org/articles/ethical-attitudes-towards-the-use-of-computer-and-information-technology.pdf

Johnson, D., & Simpson, C. (2005). Are you the ©opy cop? Learning and Leading with Technology, 323(7), 14–20.

Kari, J. K. (2011). Cyber technology ethics of university students in Lebanon: Assessing university students' activities and perceptions of cyber technology ethics in Lebanon. ProQuest LLC, Ed.D. Dissertation, Saint Louis University. (ED534212). Retrieved November 10, 2015 fromhttps://eric.ed.gov/?id=ED534212

Ki, H., & Ahn, S. (2006). A study on the methodology of information ethics education in youth. International Journal of Computer Science and Network Security, 6(6), 91–100. Retrieved August 16, 2017 from http://paper.ijcsns.org/07_book/200606/200606A15.pdf

Kizza, J. M. (2003). Ethical and Social Issues in the Information Age (2nd Edition). New York: Springer. pp 38 – 48.

Lee, W. W.,& Chan, K. C. C. (2008). Computer Ethics: A Potent Weapon for Information Security Management. RetrievedJune 05, 2017 from http://www.isaca.org/Journal/PastIssues/2008/Volume-6/Documents/jpdf0806-computer-ethics.pdf

Leonard, L. N. K., & Cronan, T. P. (2005). Attitude toward ethical behavior in computer use: A shifting model. Industrial Management & Data System, 105(9), 1150–1171. doi=10.1.1.657.5854&rep=rep1&type=pdf

Masrom,M., Mahmood, N.H.N.,& Zainon, O. (2013). Cyberethics and Internet behaviour of Malaysian primary education students. Journal of Emerging Trends in Educational Research and Policy Studies, 4(1), 105-111. RetrievedOctober 21, 2015 fromhttps://pdfs.semanticscholar.org/ad69/0d2375428fa6f56e461fd8ee3e0da2624a5e.pdf

McCarthy, R. V., Halawi, L., & Aronson, J. E. (2005). Information technology ethics: A research framework. Issues in Information Systems, VI (2). 64 – 69. Retrieved November 12, 2015 fromhttps://commons.erau.edu/cgi/viewcontent.cgi?referer=https://www.google.co.in/&httpsredir=1&article=1361&context=publication

Moor, J., & Bynum, T. (2002). Introduction to Cyberphilosophy. Metaphilosophy, 33(1/2), 4-10. Retrieved November 21, 2017 from http://www.jstor.org/stable/24439312

Namlu, A. G., & Odabasi, F. H. (2007). Unethical computer using behavior scale: A study of reliability and validity on Turkish university students. Computers & Education, 48(2), 205–215. doi:10.1016/j.compedu.2004.12.006

Ozer, N., Ugurlu, C.T., & Beycioglu, K. (2011). Computer Teachers' Attitudes toward Ethical Use of Computers in Elementary Schools. International Journal of Cyber Ethics in Education 1(2),15-24. Retrieved July 12, 2017 from https://www.researchgate.net/publication/220244503

Prosser, B. T., & Ward, A. (2000). Kierkegaard and the Internet: Existential reflections on education and community. Ethics and Information Technology, 2(3), 167–180. doi:10.1023/A:1010005605872

Rama, S. (2014). Panoramic view of cyber ethics. IITM Journal of Management and IT, 5(1), 56- 62. Retrieved November 21, 2015 fromhttp://iitmjanakpuri.com/journalspics/Volume%205%20Issue%201(A)%20Jaunary-June,%202014.pdf

Ramadhan, A., Sensuse, D.I., and Arymurthy, A.M. (2011). E-government ethics: A synergy of computer ethics, information ethics, and cyber ethics. International Journal of Advanced Computer Science and Applications, 2(8): 82–86. Retrieved January 12, 2016 fromhttps://pdfs.semanticscholar.org/983c/e7efa811af1798d897dcd611f444c5f9603

1.pdf

Rolstad, C. (2003). A Course in Computer Ethics for Engineering Students. Proceeding of International Conference on Engineering Education, Valencia, Spain. Retrieved May 11, 2017from http://www.ineer.org/events/icee2003/proceeding s/pdf/3583.pdf

Swain, C., & Gilmore, E. (2001). Repacking for the 21st Century: Teaching Copyright and Computer Ethics in Teacher Education Courses. Contemporary Issues in Technology and Teacher Education, 1(4), 535 – 545. Retrieved November 20, 2016 fromhttps://citejournal.org/volume-1/issue-4-01/current-practice/article1-htm-33/

Zeid, A. (2009). Using creative methods for teaching professional ethics for computer science students.Paper presented at the First Kuwait Conference on E-Services and E-Systems on November 17-19, 2009. RetrievedApril 22, 2016 fromhttp://portal.acm.org/citation.cfm?id=1836047.