Ethical Awareness of Computer Use among Nursing Students

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Abstract — The technological development specially with the use of personal computers have become part of educational environment wherein nursing students may use it as a tool for communication. Hence, this research study ascertained the ethical awareness of Nursing students with the use of their personal computers. The study utilized the descriptive- comparative research design. Consecutive sampling technique was also used to collect the data from Nursing students who served as respondents. A 5- point Likert Scale to measure the perception of Nursing students. The statistical package for Social Sciences (SPSS) version 21 was used for the statistical analysis of data.. To establish a significant difference between the variables, an independent sample T- test and One way Analysis of Variance was used. Finally, the use of computer among Nursing students has become an important necessity in the society especially in educational environment. Higher Education Institutions (HEIs) should consider the different ethical perspectives of students for the enhancement on the level of ethical awareness for the use of computers.

Keywords — Ethical Awareness, Technological Development, Nursing Students, Computer Education, Perception

I. Introduction

Technological development, in line with Namlu and Odabasi (2007), has resulted withinside the use of personal computer which have become part of the instructional surroundings wherein college students make use of as a device in studies and communication (as noted in Almseidein, 2014). As an vital necessity, Higher Education Institutions (HEIs) are an increasing number of the use of computer systems withinside the classrooms, however, its results on college students' studying is but to be known. These many and profound results can also additionally have effect on private lives and societies (Bacillary & Yörük, 2010). They said that computer systems modified the manner we live, communicate, get schooling and make business. This phenomenon mandates educators and college students to be aware of computer ethics (Masrom, Ismail & Hussein, 2008). According to North, George and North (2006) computer ethics (CE) is a fixed of ethical concepts that alter the usage of computer systems (as noted in Almseidein, 2014). The extensive use of computer systems has diverse blessings and blessings to many human beings (Bacillary & Yörük, 2010). However, the improved computer literacy stage amongst human beings additionally has ended in an elevated misuse of computer systems for unlawful functions or

unethical sports including software program piracy, privateness issues, pornography, spamming, hacking, personal computer viruses and unauthorized get admission to and use of personal computer structures that have been rampant nowadays. Abdul Karim, Zamzuri & Nor (2009) concluded that scholars withinside the educational surroundings specifically dedicate many unlawful and unethical behaviors an awful lot less difficult because of easy reaching, storing, converting and transmitting statistics the use of computer systems and the Internet (as noted in Bacillary & Yörük, 2010). This suggests that the development of statistics sharing comes with moral issues. Consequently, Masrom et al. (2008) argued that personal computer ethics as a subject of have a look at turns into an increasing number of relevant. According to Turner & Roberts (2001), the coaching of Computer Education is a place of growing significance and hobby withinside the practise of personal computer specialists and schooling of the overall personal computer customers (as noted in Masrom et al., 2008).

Sims, Cheng, and Teegen (1996) discovered that software program piracy arise extra often in adult males than women and in older college students extra than more youthful college students, primarily based totally on self-reporting. McCarthy, Halavi, and Aronson (2005) discovered that there may be a great distinction withinside the moral ideals among male and girl college students of computer statistics system. On the opposite hand, Hay, McCourt, and Fisher (2001) argued that gender doesn't seem to seriously have an effect on moral perceptions in computer associated situations. Furthermore, Gan and Koh (2006) concluded that software program piracy amongst college personnel had been much less common than the scholars. These research had been all noted in Masrom et al. in 2008.

According to Masrom et al. (2008) personal computer customers these days have evolved an elevated recognition on moral standards. North et al. (2006; 2007) indicated the want for each main and non-main college students to be aware about personal computer ethics (as noted in Masrom et al., 2008). Masrom et al. (2008) concluded that there may be a want for pc recognition education amongst college customers once they discovered great distinction withinside the moral recognition of personal computer use amongst college students. One of the handiest approaches to decorate recognition on this context is thru schooling. Furthermore, North et al. (2006) suggested that loss of pupil recognition for personal computer ethics is the maximum weak spot withinside the college computer protection system (as noted in Almseidein, 2014). The authors' assessment of literature found out that there was no unique research that targeted on nursing college students' recognition of computer ethics. Hence, the purpose of this have a look at is to look at the moral recognition on computer ethics amongst nursing college students. This have a look at sought to reply the primary question: Do nursing college students have distinct perceptions at the ethics of personal computer use with the aid of using (a) gender; (b) age; (c) educational stage; and (d) period of computer use consistent with week.

II. Methodology

Research Design

The have a look at applied the descriptive-comparative studies layout to reply the studies question. The descriptive layout investigated the computer ethics recognition of the scholars even as the comparative layout tested the great distinction of the scholars' notion of personal computer ethics in accordance age, gender, educational stage and period of computer use.

Sample and Setting

Consecutive sampling approach turned into used to encompass all of the available populace related to the nursing college students of a non-public college in Philippines. Due to small pattern size, all of the college students from yr 2 to four who're presently enrolled withinside the Bachelor of Science in Nursing application had been invited to take part withinside the have a look at. There had been no college students in Year 1 because of the K-12 application. Students growing old beneath 18 years of age had been excluded from the have a look at because of loss of parental consent. There turned into a complete of 87 nursing college students however best eighty college students had been eligible withinside the have a look at. Those excluded had been created from 7 college students beneath 18 years of age. The statistics amassing duration occurred ultimate August 03, 2016.

Ethical Considerations

Prior to accomplishing the studies, an approval from the Dean of the College of Nursing turned into received and knowledgeable consent turned into secured from the respondents. There had been no economic or material blessings given to the contributors of the research study. The participation of the nursing college students had been voluntary and statistics had been dealt with with confidentiality and anonymity.

Instrument

To degree the notion of college students, a survey questionnaire with 2 part structure was used. Part one of the questionnaire offers with the demographic variables even as element includes 10 items that measures personal computer ethics as tailored from Rosenberg (1997). The contributors had been asked to signify the frequencies of occurrences of the gadgets on pc ethics the use of a 5-factor Likert scale (1 = strongly disagree; 2 = disagree; 3 = I don't know; four = agree; 5 = strongly agree). The questionnaires had been floated with the aid of using the college's nursing school to keep away from bias. The device had been allotted to the scholars for the duration of their normal magnificence intervals with the permission of the direction instructors.

Data Analysis

The statistical bundle for social sciences (SPSS) model 21 turned into used for the statistical analyses of statistics. The perceptions of the scholars had been analyzed the use of descriptive facts and the great distinction on college students' notion had been analyzed with the aid of using inferential facts including impartial pattern t-check and one-manner evaluation of variance (ANOVA).

III. Results and Discussion

Table 1 presents the demographic profile of the respondents. It indicates that majority of the respondents were female nursing students (82.5%) aging between 18-19 years of age (52.5%) who were currently at second year (47.5%) of the nursing program. About 22.5% of them were using computer for more than 10 hour per week.

Table 1. Demographic Profile

Variable	Frequency N = 80 (%)
Gender	
Male	12 (15.0)
Female	66 (82.5)
Missing	2 (2.5)
Age	
18-19	42 (52.5)
20-24	24 (30.0)
25-29	7 (8.8)
30-34	3 (3.8)
35-39	2 (2.5)
45-49	1 (1.3)
Others	1 (1.3)
Academic Level	
Second Year	38 (47.5)
Third Year	21 (26.3)
Fourth Year	21 (26.3)
Duration of Computer Use per Week	
None	12 (15)
Less than 1 hour	12 (15)
1-2	12 (15)
2-4	14 (17.5)
4-6	5 (6.3)
6-10	7 (8.8)
More than 10 hours	18 (22.5)

Using independent sample t-test, Table 2 indicates that significant difference of the perception of male and female respondents regarding computer ethics was observed in 3 items. The item on "Interfere with other people's computer work" (t = -2.64 and p = <0.05) shows that female nursing students with a mean value score of 1.72 tended to be more aware than male

students. It also presents that awareness on item "Use a computer to bear false witness" (t = -2.33; p = <0.05) among female (Mean = 1.59) is significantly higher than male. On the other hand, the item "Copy or use proprietary software for which you have not paid" with a value of t = 1.49 and p = <0.50 shows higher awareness among male (Mean = 2.42) over female students.

Table 2. Comparison of Ethical Awareness of Computer Use by Gender

No.	Items	Male		Female		t	Sig
		Mean	S.D.	Mean	S.D.		
1	Use a computer to harm other people.	1.33	0.65	1.39	0.69	-0.29	0.786
2	Interfere with other people's computer work.	1.25	0.45	1.72	1.01	-2.64	0.042
3	Snoop around in other people's computer files.	1.58	1.24	1.67	0.95	-0.24	0.428
4	Use a computer to steal.	1.58	1.24	1.61	1.08	-0.08	0.735
5	Use a computer to bear false witness.	1.18	0.40	1.59	1.02	-2.33	0.015
6	Copy or use proprietary software for which you have not paid.	2.41	1.56	1.71	1.09	1.49	0.030
7	Use other people's computer resources without authorization or proper compensation.	1.66	0.88	1.57	0.96	0.32	0.683
8	Appropriate other people's intellectual output.	2.08	0.90	1.84	1.15	0.79	0.525
9	Do not think about the social consequences of the program you are writing or the system you are designing.	2.08	1.16	1.90	1.30	0.46	0.452
10	Do not always use a computer in ways that insure consideration and respect for your fellow humans.	2.41	1.08	2.27	1.43	0.40	0.114

The results in Table 3 reveal no significant difference between age groups at 0.05 level of significance. The impact of age on computer ethics awareness was analyzed using one way analysis of variance (ANOVA) test.

Table 3 Comparison of Ethical Awareness of Computer Use by Age Group

No.	Item	18-19	20-24	25-29	30-34	35-39	45-49	others	F	Sig
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		
1	Use a computer to harm other people.	1.42 (0.76)	1.37 (0.57)	1.14 (0.37)	1.66 (1.15)	1 (0)	1 (0)	1 (0)	0.452	0.842
2	Interfere with other people's computer work.	1.66 (0.92)	1.75 (0.94)	1.71 (1.49)	1.33 (0.57)	1 (0)	1 (0)	1 (0)	0.395	0.880
3	Snoop around in other people's computer files.	1.61 (0.96)	1.87 (0.94)	1.16 (0.40)	1 (0)	3 (2.82)	1 (0)	1 (0)	1.498	0.191
4	Use a computer to steal.	1.73 (1.16)	1.45 (0.88)	1.57 (0.97)	1 (0)	3 (2.82)	0	1 (0)	1.091	0.372
5	Use a computer to bear false witness.	1.53 (0.86)	1.58 (1.17)	1.57 (0.97)	1 (0)	2 (1.41)	3 (0)	1 (0)	0.645	0.694
6	Copy or use proprietary software for which you have not paid.	1.72 (1.20)	2 (1.28)	2.14 (1.21)	1 (0)	1.5 (0.70)	2 (0)	1 (0)	0.510	0.799
7	Use other people's computer resources without authorization or proper compensation.	1.54 (0.80)	1.22 (1.16)	2.14 (1.21)	1 (0)	1 (0)	2 (0)	1 (0)	0.841	0.542

8	Appropriate other people's intellectual output.	1.76 (1.05)	1.91 (1.05)	2.57 (1.39)	1 (0)	2.50 (2.12)	3 (0)	1 (0)	1.261	0.286
9	Do not think about the social consequences of the program you are writing or the system you are designing.	1.92 (1.29)	2.2 (1.28)	2.14 (1.67)	1 (0)	3 (2.82)	1 (0)	1 (0)	0.776	0.591
10	Do not always use a computer in ways that insure consideration and respect for your fellow humans.	2.07 (1.40)	2.45 (1.35)	3 (1.73)	4 (0)	2 (1.41)	2 (0)	4 (0)	1.512	0.186

One way ANOVA was conducted to see whether the awareness of computer ethics varied in terms of the academic level of the respondents. Results (Table 4) illustrate that significant difference is observed in only one item "Do not always use a computer in ways that insure consideration and respect for your fellow humans" with a value of F =3.361 and p = <0.05. The respondents at fourth year with a mean value score of 3.04 in this item appear to have more awareness and the second year students (Mean = 2.05) have the least awareness.

Table 4 Comparison of Ethical Awareness of Computer Use by Academic Level

No.	Item	Second Year		Third Year		Fourth Year		F	Sig
		Mean	S.D.	Mean	S.D.	Mean	S.D.		
1	Use a computer to harm other people.	1.39	0.82	1.33	0.48	1.38	0.58	0.055	0.947
2	Interfere with other people's computer work.	1.52	0.95	1.90	1.04	1.61	0.86	1.077	0.346
3	Snoop around in other people's computer files.	1.68	1.11	1.50	0.68	1.76	0.99	0.381	0.685
4	Use a computer to steal.	1.84	1.32	1.45	0.60	1.42	0.97	1.338	0.269
5	Use a computer to bear false witness.	1.67	1.17	1.61	0.80	1.28	0.64	1.144	0.324
6	Copy or use proprietary software for which you have not paid.	1.76	1.32	1.66	0.79	2.14	1.23	0.990	0.376
7	Use other people's computer resources without authorization or proper compensation.	1.63	1.12	1.57	0.87	1.57	0.67	0.039	0.962
8	Appropriate other people's intellectual output.	1.73	1.15	1.90	1.22	2.09	0.88	0.714	0.493
9	Do not think about the social consequences of the program you are writing or the system you are designing.	2.00	1.35	1.90	1.22	2.09	1.26	0.105	0.900
10	Do not always use a computer in ways that insure consideration and respect for your fellow humans.	2.05	1.45	2.23	1.48	3.04	1.11	3.361	0.031

The effect number of hours spent on using computer has on computer ethical awareness was examined using one way analysis of variance. Results in Table 5 present that difference exist in 6 items on computer ethics. Among them are "Use a computer to steal" ($F = 5.418$; $p = 0.00$); "Use a computer to bear false witness" ($F = 2.241$; $p = <0.05$); "Copy or use proprietary software for which you have not paid" ($F = 2.974$; $p = <0.05$); "Appropriate other people's intellectual output" ($F = 3.079$; $p = <0.05$); "Do not think about the social consequences of the program you are writing or the system you are designing" ($F = 5.565$; $p = 0.00$); and "Do not always use a computer in ways that insure consideration and respect for your fellow humans" ($F = 2.844$; $p = <0.05$). It is surprising to note that respondents that spent more than 10 hours in using computers per week were recorded highest in mean scores on the six items with significant difference as mentioned above.

Table 5. Comparison of Ethical Awareness of Computer Use by Duration

No.	Item	none Mean (SD)	< 1 Mean (SD)	1-2 Mean (SD)	2-4 Mean (SD)	4-6 Mean (SD)	6-10 Mean (SD)	> 10 Mean (SD)	F	Sig
1	Use a computer to harm other people.	1.16 (0.38)	1.41 (0.66)	1.41 (0.66)	1.42 (0.51)	1.80 (0.83)	1.14 (0.37)	1.38 (0.97)	0.658	0.683
2	Interfere with other people's computer work.	1.50 (0.90)	1.50 (0.67)	1.33 (0.49)	1.92 (0.73)	1.60 (0.89)	1.28 (0.48)	2 (1.49)	1.098	0.372
3	Snoop around in other people's computer files.	1.58 (0.51)	1.41 (0.66)	1.41 (0.66)	1.57 (0.64)	1.40 (0.54)	1.28 (0.48)	2.35 (1.65)	2.056	0.069
4	Use a computer to steal.	1.33 (0.65)	1.08 (0.28)	1.16 (0.38)	1.46 (0.51)	1.40 (0.54)	1.57 (0.78)	2.72 (1.70)	5.418	0.000
5	Use a computer to bear false witness.	1.33 (0.65)	1.08 (0.28)	1.16 (0.38)	1.71 (0.82)	1.40 (0.54)	1.85 (1.57)	2.11 (1.36)	2.241	0.049
6	Copy or use proprietary software for which you have not paid.	1.50 (0.67)	1.25 (0.62)	1.33 (0.65)	2.14 (1.09)	1.40 (0.54)	2.00 (1.52)	2.61 (1.61)	2.974	0.012
7	Use other people's computer resources without authorization or proper compensation.	1.41 (0.51)	1.33 (0.65)	1.25 (0.45)	1.78 (0.69)	1.40 (0.54)	2.14 (1.46)	1.83 (1.42)	1.212	0.310
8	Appropriate other people's intellectual output.	1.58 (0.66)	1.33 (0.65)	1.50 (0.79)	2.14 (1.02)	1.60 (0.89)	1.57 (0.78)	2.66 (1.53)	3.079	0.010
9	Do not think about the social consequences of the program you are writing or the system you are designing.	1.41 (0.51)	1.16 (0.38)	1.66 (1.07)	2.00 (1.24)	1.60 (0.89)	2.00 (1.15)	3.27 (1.67)	5.565	0.000
10	Do not always use a computer in ways that insure consideration and respect for your fellow humans.	1.91 (1.31)	1.91 (1.31)	2.50 (1.38)	2.00 (0.96)	1.80 (1.30)	2.00 (1.52)	3.44 (1.50)	2.844	0.015

IV. Conclusion and Recommendation

The main purpose of this study was to examine the ethical awareness on computer ethics among nursing students and it sought to answer if there was any significant difference by gender, age, academic level and duration of computer use. Data were collected using a survey questionnaire which was administered to a sample population of eighty nursing students of a private university. The participants were asked to respond to 4 items related to demography and 10 items for computer ethics. The data were interpreted using t test for comparison of ethical awareness by gender and one way ANOVA for age, academic level and duration of computer use with three or more groups.

The study found that some significant differences existed between male and female nursing students' awareness of computer ethics. Specifically, female nursing students have a higher ethical awareness on "Interfere with other people's computer work" and "Use a computer to bear false witness" than male students. Conversely, male students were found to have higher ethical awareness on "Copy or use proprietary software for which you have not paid" than their female counterparts which was consistent with the reports of Masrom et al. (2008). Although the significant results were observed only from three items on computer ethics, we concluded that there was significant differences of ethical awareness by gender which was in line with the studies by Masrom et al. (2008) and McCarthy et al. (2005) but contrary to the findings of McNichols and Zimmerer (1985), Hay et al. (2001) and Calluzzo and Cante in 2004 (as cited in Masrom et al., 2008).

In terms of age group, statistical test found no significant differences pertaining to ethical perceptions on computer ethics. This finding was contrary to Masrom et al. (2008) who found that significant difference does exist between senior and junior undergraduate computer science students.

As regards academic level, results showed that significant difference between second, third and fourth year nursing students was observed only in the last item on computer ethics which corresponds to "Do not always use a computer in ways that insure consideration and respect for your fellow humans". This suggests that academic level has a minimal influence on awareness level of the students on computer ethics. However, it is important to note that the mean scores of the fourth year nursing students appeared to be highest in six items on computer ethics than second and third year students. This supports the study of Masrom and Ismail (2008) who reported that more educated students were more concerned about ethical issues (as cited in Abolarinwa, Tiamiyu, and Eluwa, 2015).

Furthermore, the findings gathered from the comparison of ethical awareness of computer use by duration show that differences exist in the mean scores obtained in six items on computer ethics. This supports Abolarinwa et al. (2015) whose report suggested that the number of hours spent on computer by students on a weekly basis is likely to influence their level of ethical awareness. Also, there was consistency of higher level of ethical awareness among those who spent more than 10 hours on computer weekly between the finding of this study and that of Abolarinwa et al. (2015).

Because the use of computer has become an important necessity in the society especially in educational environments, the authors recommend to integrate teaching of computer ethics in computer courses especially in nursing education curriculum to strengthen and enhance the students' level of awareness and social responsibility. Additionally, HEIs should consider the different ethical perspectives of male and female students in planning for ethical policies and designing of training and workshops to enhance the level of ethical awareness of computer users (students, teachers and other personnel). Future research should examine how HEIs conduct surveys to monitor the computer ethics awareness and how they update and communicate their computer and Internet use policies.

A limitation of the study is attributable to the relative small sample size of nursing students in the undergraduate level which may not be representative of the general population. A larger sample size and a more equal gender distribution of respondents would increase the robustness of results. Nonetheless, the findings of this study is deemed to have important contribution in addressing issues on and enhancing computer ethics awareness in nursing schools and other HEIs especially in conducting research and other school related activities.

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