

Prospective Teachers' Likelihood of Performing Unethical Behaviors in the Real and Virtual Environments

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ABSTRACT

Individuals act different in virtual environment than real life. The primary purpose of this study is to investigate the prospective teachers' likelihood of performing unethical behaviors in the real and virtual environments. Prospective teachers are surveyed online and their perceptions have been collected for various scenarios. Findings revealed that prospective teachers are more likely to perform unethical behaviors in virtual environment than real life. Results also revealed that men and more internet users regardless of their gender are more likely to perform unethical behaviors in virtual environment than women and less internet users. Future research should investigate the driving forces to perform unethical behaviors in virtual environment.

Keywords: cyberbullying; virtual environment; teacher education, ethics

INTRODUCTION

The amount of information produced by society and dependence on information in daily work is increased every day. Therefore, the society we live in have become increasingly dependent on computers and other communication technologies (Wong, 1995; Ng, 2008). The contemporary world has witnessed the development of information technologies (Ince & Akdemir, 2013). The effects of the information technologies are observed in different settings (Akdemir, 2008). Stichler and Hauptman (1998) stated that the use of new communication technologies in the life affects individuals' beliefs and actions. The new communication technologies brought new ethic problems (Moor, 2004; Mullen & Horner, 2004). Technological developments expose new attitudes towards new situations (Masrom et al., 2008). Moreover, it is not known exactly how these communication technologies influence society's beliefs and actions. Kabakçı and Odabaşı (2003) claimed that these changes in the society have led to the emergence of new beliefs and values. These means for communication have led to changes of people relationship between each other and their leisure time activities. It caused the emergence of many new negative habits and behaviors (Ahmed, 2002). Mason (1996) defined four ethical problems of information era as intellectual property, privacy, access and truth. Intellectual property, all kind of products produced by human brains, is required personal permission before using it. Individuals do not see as a problem to use any digital knowledge or product without getting permission (Uysal & Şendağ, 2006). However, individuals usually get permission to use physical materials belonging to others in their daily life. As a privacy problem, new technologies make it possible to reach the personal private information (Mason, 1986). Quinn (2005) mentioned that though these new technologies have many benefits for people, new technologies can be used for personal gain by abusing others. In this way, personal information of individual can be accessed or disclosed this information without permission of the owners. Access is a problem by providing individuals' information reached from computer or internet environment. This is related to intellectual property problem. Moreover, truth is a problem about whether the information reached is trustworthy or not (Uysal & Şendağ, 2006). Willard (2001) claimed that virtual environment provides less emotional feedback than normal environment so the virtual environment causes persons to remain insensitive to various events or conditions. In addition, the possible effects of the actions done in the virtual environment often are not considered thoroughly. Probably the primary reason is the belief that there is a lack of control that may penalize responsible ones in the virtual environment. Stewart (2000) stated the cause of various crimes committed in e-environment that a person who performs the action with technology and not performed face-to-face perceives this as a game, intellectual challenge or race.

In general, the decision-making process of physical action is affected negatively while someone does not approve it. However, if this action is being performed on the virtual environment using technology and low

probability to be observed by someone else, the views of someone on the actions affect the decision making process much less (Woodbury, 2003). The result of the study reveal that 95% of people are against stealing the software in the CD, DVD or similar tools, while one-third of these people do not oppose to be downloaded the same software from the internet illegally (Business Software Alliance, 2004). Likewise, more than half of internet users do not think to download music from the internet on their computers as a theft. Callahan (2004) stated that people usually refer to this way since the penalty of unethical economic benefits is less. According to investigation results, after Recording Industry Association in USA started to sue for illegal downloading and copying, illegal download rates have decreased over the internet (Poole, 2007). People have begun to review their actions on virtual environment again and again since the legal regulations were legislated (Madden & Rainie, 2005).

Theoretical Base

The American Heritage Dictionary defines the term “ethics” as “The rules or standards governing the conduct of a person or the conduct of the members of a profession.” Fieser (2006) mentioned that the ethics’ studies are related to a philosophical of morality involving to make a decision in regard to concepts of right and wrong behavior. There are some underlying principles of ethical actions that are; a person does not harm and deceive to others; the person should acknowledge a person’s right to life, privacy, safety and a person’s freedom of choice over his or her actions (Ng, 2008). Moral is related about how people perceive and evaluate good and evil, right and wrong, norms and values accepted by the person’s social system (Haidt, 2006; Hauser, 2006; De Waal, 1996; Turiel, 1983a, 1983b). Ethics and morals are both related to “right” and “wrong” action, and are mostly used interchangeably. However, they are different. Ethics refer to rules that are provided by an external source such as, authorities, religion principles, or codes of workplaces. On the other hand; morals refer to an individual’s own principles regarding to what is right and wrong. There are several theories related to individual’s moral values and how individual decides to do things. Academician and theorists discussed on many strategies related to how people decide to do things. These decision-making strategies vary based on work responsibilities (Bresford & Sloper, 2008). While some theories try to explain behavior of individuals within organization as members, others mentioned in this study explain the underlying causes of individuals’ behavior.

The rational model is a rational and completely informed decision-making process, consists of several steps (Turpin & Marais, 2004) which are intelligence, design, choice, and review (Simon, 1997). When someone uses this model to make a decision, the model assumes that one knows all possible alternatives, the consequences of alternatives, the set of choices for the consequences, and one has the computational ability to compare the consequences to determine which is preferred (Kreitner & Kinicki, 2001).

The primary purpose of naturalistic decision-making is to examine and understand decision-making in the natural context (Turpin & Marais, 2004). According to Klein studies (1998), decision-maker’s ability recognizes a situation from the similar situation defined in line with previous experiences. The previous similar situation gives important clues associated with such a situation and the appropriate target returns associated with expectations. In this direction the decision-makers know behavior of which will lead to succeed. The course of action is evaluated by visualizing expected behavior through a mental simulation. The decision-maker revises fictionalized behavior until feeling comfortable with it, then the course of action is implemented. All of that happens within a very short period. According to this model, the experience is the most important factor to make the right decision.

There are several theories explaining how someone makes decisions (Poole, 2007). The ethics studies collected the decision-making models under the three models which are descriptive, normative (prescriptive), and meta-ethics but some researchers added the applied ethics in this list. The easy way to explain the differences among these ethics models, the person should understand the questions used for explaining the each decision-making models: Descriptive ethics – what do people think is right? It is the study of people’s beliefs about morality; Normative or prescriptive ethics – how should people act? It investigates the set of questions that arise when considering how one should behave; Meta ethics – what does ‘right’ even mean? It seeks to understand the nature of ethical properties, statements, attitudes, and judgment; Applied ethics – how do we take moral knowledge and put it into practice? It investigates specific controversial issues such as animal rights or nuclear war (Icheku, 2011).

Previous Research

Several researches were conducted to figure out how age, gender, amount of computer use and internet use influenced behaviors in real versus virtual environments. 64% of internet users said that their daily life activities would be affected if they could no longer use the internet (Fallows, 2004). Children and young people used of new interactive media and communication technologies more frequently and actively in their social lives and

everyday practices (Mitchell, Ybarra, & Finklehor, 2007). 13 and older people believed that it was more acceptable to upload or download software than 12 and younger. 51% of young people between ages 18 and 29 with internet access have downloaded music files without download permission. Moreover, 53% of youth between the ages of 12 and 17 have also downloaded music files to hard drive (Graziano & Rainie, 2001). Another research result showed that 88 percent of Americans used the internet daily base for different purposes changing based on gender, ethnicity and age (Fallows, 2004). The gender difference is the other factor to determine how behavior changes in e-environment. While 34 percent of men believed that it was acceptable to download copyrighted material without authorization, only 27 percent women agreed on. Moreover, music downloads rate among males is higher than females (Graziano & Rainie, 2001). Van Buren (2001) found the negative relationship between students' computer knowledge and following the school's culture of trust. Another research conducted in the UK by National Children's Homes, 14% of 11 to 19-year-olds children stated that text messages and images taken with mobile phone cameras were used to threaten and harass them (Burn & Cranmer, 2007).

A similar study was conducted by Poole in 2007 on 453 participants. In the study, when the groups were compared, the technology-based scenarios were more acceptable to the participants than the non-technology-based scenarios. There was a highly significant difference by age between the technology-based scenarios and the non-technology-based scenarios responses. Males were much more accepting of both the technology and non-technology survey scenarios than females. There was no difference in the scenario responses based on the number of hours of home computer use. Poole, also, found that the perceptions of the acceptability of the survey scenarios did not differ from the likelihood of actually performing the actions. Males were more likely than females to carry out the survey scenarios related technology and non-technology. The number of hours of home computer use had neither an impact on the likelihood of performing the technology-based actions, nor an impact on the responses of non-technology scenarios. Poole study showed that there was a greater discrepancy between what the participants felt was acceptable and what they were willing to do in among the technology and non-technology scenarios. Males responded more consistently regarding acceptability and likelihood of acting upon the survey scenarios than female. The number of hours of home computer use had an impact on the responses to the technology scenarios significantly. It means that if people use computers in increasing amounts, their actions may change. Poole, finally, said that individuals always will to engage in unethical behavior, technology seems to give them opportunity to do so.

Research Questions

The new decision-making studies are conducted in the light of new models under their concepts. Advanced communication technologies have changed people's perception of ethics and so the decision-making authority. Because of these changes, people have done many unethical things in the virtual environment. The primary purpose of this study is to investigate the prospective teachers' likelihood of performing unethical behaviors in the real and virtual environments. Following research questions have been developed for the study:

- 1- Is there a difference between likelihood of student's performing unethical behaviors in different environments?
- 2- Is there a difference between student's acceptability of performing unethical behaviors in different environments?
- 3- Do gender and internet usage affect likelihood of student's performing unethical behaviors in different environments?
- 4- Do gender and internet usage affect student's acceptability of performing unethical behaviors in different environments?

METHOD

The cross-sectional survey design (Creswell, 2002) is used in the study to investigate the research questions. Cross-sectional survey design is the most preferred form of survey design since the data are collected at one-point in a time.

Sample

The subjects for the study consisted of 352 (131male-221female) prospective teachers enrolled in the four-year teaching programs of the education faculty in two different universities. Subjects were selected voluntarily from prospective teachers.

Instrument

The survey developed by Poole (2007) is used in the study to collect the data from participants. The instrument has 22 scenarios. 11 scenarios have technology related items while the other 11 scenarios have non-technology related items. Survey respondents are asked to provide two ratings for each survey items using a five-point scale. The first rating is the likelihood of engaging the activities in each scenario. The second rating is the acceptability of the scenarios. Respondents' answers to each question are converted a number from 1 to 5.

Conducting the Survey

The survey instrument was originally on paper. Online version of the survey was developed to eliminate the potential risk for entering the data for analysis. Voluntarily participation of the undergraduate students studying at the school of education faculties of both universities was asked. Participants accepting to involve the study were completed the survey items. Then the file containing participants' responses were imported to the statistical analysis package (SPSS) for later analysis. All statistical analyses were conducted with a significant level of .05.

ANALYSIS

After the data collection phase, Cronbach Alpha coefficients were calculated to observe internal consistency of all scales. A reliability estimate of the likelihood of student's performing unethical behaviors in each environment was found 0.75 (virtual environment) and 0.78 (real environment). Also, reliability estimate of acceptability of performing unethical behaviors in each environment was found 0.77 (virtual environment) and 0.79 (real environment). Afterwards, Shappiro-Wilk normality test conducted to determine variables departure from normality or not. As a result, all variables are found not-normally distributed. Therefore, non-parametric statistics were used to analyze the data. The Wilcoxon Signed Rank Test was used to compare paired comparison of likelihood of student's performing unethical behaviors and acceptability of performing these unethical behaviors in technology and non-technology environments. Furthermore, the Mann-Whitney U-test was used to compare gender effect. Also the Kruskal Wallis H-test was used to compare internet and computer usage effect on likelihood of student's performing unethical behaviors and acceptability of performing unethical behaviors in technology and non-technology environments.

FINDINGS

Descriptive statistics and normality evaluations for likelihood of student's performing unethical behaviors and acceptability of performing unethical behaviors in different environments are shown in Table1.

Table-1. Descriptive Statistics and Normality Evaluations of Variables

Scale	Environment	M	Sd	Skewness	Kurtosis	P*
Likelihood of student's performing unethical behaviors	Virtual	17.99	4.87	0.78	0.70	0.00**
	Real	15.99	3.86	1.34	3.00	0.00**
Acceptability of performing unethical behaviors	Virtual	17.52	4.95	0.91	1.17	0.00**
	Real	15.68	3.98	1.41	3.32	0.00**

* Shappiro-Wilk test

** P< 0,05

Likelihood of student's performing unethical behaviors

The first research question investigated the whether there is a difference between likelihood of student's performing unethical behaviors in different environments. Median values of likelihood of student performing unethical behaviors in technology environments and in non-technology environments were 18.0 and 15.0, respectively. It is apparent from Table-2 that the likelihood of student's performing unethical behaviors in technology environments is more than in non-technology environment, Z=-11.643, p<0.00. Further analysis indicated that likelihood of student's performing unethical behaviors in technology environment has 241 median rank score greater than in non-technology environment.

Acceptability of performing unethical behaviors

The second research question investigated the whether there is a difference between student's acceptability of performing unethical behaviors in different environments. Median values of acceptability of performing unethical behaviors in virtual and real environments were 17.0 and 15.0, separately. The acceptability of performing unethical behaviors in virtual environments is more than in real environment, Z=-10.680, p<0.00. Results indicated that acceptability of performing these unethical behaviors in virtual environments has 229 median rank score greater than in non-technology.

Table-2: The comparison of likelihood and acceptability of performing unethical behaviors

	N	Virtual	N	Real	Z	P
		Mean of Negative Ranks		Mean of Positive Ranks		
Likelihood of student's performing unethical behaviors	241	170.92	64	85.52	-11.643	0.00*
Acceptability of performing unethical behaviors	229	160.36	63	96.11	-10.680	0.00*

* p<0.05

Gender and internet usage rate effects on likelihood of student's performing unethical behaviors

The third research question investigated whether the gender and internet usage affect likelihood of student's performing unethical behaviors in different environments.

Table-3: Comparison of the likelihood of student's performing unethical behaviors for gender and internet usage rate

Independent Variables	Categories	N	Likelihood of student's performing unethical behaviors			
			Virtual		Real	
			Mean Rank	P	Mean Rank	P
Gender	Male	131	197.99	0.00*	190.01	0.054
	Female	221	163.78		168.49	
Internet Usage	<2 hour	99	149.48	0.01*	153.54	0.02*
	2-4	104	180.17		184.86	
	4-6	52	199.44		200.85	
	6-8	47	168.85		155.63	
	8-10	23	210.65		192.76	
	> 10	27	201.46		204.11	

* P<0.05

Gender effect in virtual environment

Results indicated that likelihood of student's performing unethical behaviors in virtual environments is greater for men than women, with a mean rank of man's score 197.99, for woman 163.78, $U=-3.057$, $p=.002$, $r=.50$.

Internet usage effect in virtual environment

The result indicated that likelihood of student's performing unethical behaviors in virtual environments was greater for using 8 hours or more using internet in a week than the other categories. $\chi^2(5, N=352) = 14.320$, $p=.01$.

Gender effect in real environment

Finding indicated that likelihood of student's performing unethical behaviors in real environments did not differ by gender preferences. Additionally, mean rank of man score is 190.91 and woman score is 168.49, $U=-1.927$, $p=0,054$.

Internet usage effect in real environment

Finding indicated that likelihood of student's performing unethical behaviors in real environments was greater for 4-6 hours and 10 hours and more using internet in a week, $\chi^2(5, N=352) = 13.411$, $p=.02$

Gender and internet usage rate effects on acceptability of performing unethical behaviors

The fourth research question investigated whether the gender and internet usage affect student's acceptability of performing unethical behaviors in different environments.

Table-4. Comparison of the acceptability of performing unethical behaviors for gender and internet usage rate

Independent Variables	Categories	N	Acceptability of performing unethical behaviors in different environments			
			Virtual		Real	
			Mean Rank	P	Mean Rank	P
Gender	Male	131	189.16	0.071	183.76	0.301
	Female	221	168.99		172.2	
Internet Usage	<2 hour	99	152.12	0.074	163.79	0.484

2-4	104	178.13	180.01
4-6	52	190.33	185.76
6-8	47	182.03	165.27
8-10	23	206.43	198.87
> 10	27	197.85	192.24

Gender effect in virtual environment

Results indicated that there was no significant effect on students' acceptability of performing unethical behaviors in different environments, $U=-1.803$, $p=0,07$.

Internet usage effect in virtual environment

The result indicated that students' acceptability of performing unethical behaviors in virtual environments did not differ by internet usage time in a week, $\chi^2(5, N=352) = 10.044$. $p=.07$.

Gender effect in real environment

Finding indicated that gender was not affected students' acceptability of performing unethical behaviors in real environments, $U=-1.035$, $p=0,30$.

Internet usage effect in real environment

It is apparent from findings that internet usage rate was not affected students' acceptability of performing unethical behaviors in real environments, $\chi^2(5, N=352) = 4.472$. $p=.048$.

CONCLUSION AND RECOMMENDATIONS

Individuals are more dependable on computer technologies than ever before. Consuming significant time on computers particularly for communication purposes have brought ethical issues. The changes in the society as a result of the introduction of new technologies have triggered the emergence of new beliefs and values (Kabakçı and Odabaşı, 2003; Masrom et al., 2008). The effects of communication technologies on individuals and on the society are still under investigation. This study was designed to add a contribution to body of knowledge on ethics in the new environment by illuminate the question that whether there is a difference in the prospective teachers' likelihood of performing unethical behaviors in the real and virtual environments.

Virtual environments have become part of individuals' life in the last decade. Tools available at virtual environments provide numerous options for individuals primarily for communication and entertainment. Identical to the real world individuals' can do behaviors that are unethical in virtual environments. Findings of this study revealed the fact that prospective teachers are more likely to perform unethical behaviors in virtual environments than real environment. The virtual environment frequently used for communication seems to negatively affect the prospective teachers' behaviors. Another astonishing finding of the study was that prospective teachers' acceptability of performing unethical behaviors in the virtual environment is higher than the real environment. What are the driving forces affecting individuals to perform and/or accept performing unethical behaviors in the virtual environment? Further research needs to investigate the underlying causes of this change. The finding of the study has brought a new concern on teacher education since prospective teachers will be role models for young generation. The virtual environment apparently will be the mean of communication in following decades. Therefore special cautions need to be taken to diminish the acceptability and the likelihood of performing unethical behaviors in the virtual environment primarily on prospective teachers and society at large. Another key finding of this study was that the likelihood of students' performing unethical behaviors in virtual environments is greater in men than women while no difference was found in the real environment. Why does gender difference exist in virtual environment? In-depth qualitative studies should be planned to investigate the reasons in the future.

REFERENCES

- Akdemir, O. (2008). Teaching in Online Courses: Experiences of Instructional Technology Faculty Members. *The Turkish Online Journal of Distance Education*, 9, 2. p. 97-108.
- Ahmed, E. (2002). Information technology and social change. *Minnesota Futurists*, 26(3/4), 102-104.
- Beresford, B. and Sloper, P. (2008) *Understanding the dynamics of decision-making and choice: A scoping study of key psychological theories to inform the design and analysis of the panel study*, York: Social Policy Research Unit, University of York.
- Burn, A., & Cranmer, S. (2007). A glass half full? Schools and young people's Internet use in the UK. In K. M. Ekström & B. Tufte (Eds.), *Children, media and consumption: On the front edge* (pp. 79–92). Göteborg, Sweden: International Clearinghouse on Children, Youth and Media/UNESCO.

- Business Software Alliance (2004a). New survey shows that teens are more likely to illegally download than tweens, URL (consulted June 2014): <http://www.prnewswire.com/news-releases/new-survey-shows-that-teens-are-more-likely-to-illegally-download-than-tweens-74224392.html>
- Business Software Alliance (2004b). Teaching cyber ethics to America's youth should begin @ home survey says, URL (consulted June 2014): <http://www.ipsos-na.com/news-polls/pressrelease.aspx?id=2106>
- Callahan, D. (2004). *The cheating culture: Why more Americans are doing wrong to get ahead*. Orlando, FL: Harcourt.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Research, N.J.: Merrill.
- De Waal, F. (1996). *Good natured: The origins of right and wrong in humans and other animals*. Cambridge, MA: Harvard University Press.
- Fallows, D. (2004) 'The Internet and Daily Life', Pew Internet & American Life Project, URL (consulted June 2014): http://www.pewinternet.org/files/old-media/Files/Reports/2004/PIP_Internet_and_Daily_Life.pdf
- Graziano, M. and L. Rainie (2001) 'The Music Downloading Deluge', Pew Internet & American Life Project, URL (consulted June 2014): www.pewinternet.org/files/old-media/Files/Reports/2001/PIP_More_Music_Report.pdf
- Haidt, J. (2006). *The happiness hypothesis: Finding modern truth in ancient wisdom*. New York: Basic Books.
- Hauser, M. (2006). *Moral minds: How nature designed our universal sense of right and wrong*. New York: Harper Collins.
- Icheku, V. (2011). *Understanding ethics and ethical decision-making*. Bloomington, IN: Xlibris Corporation
- Ince, M., & Akdemir, Ö. (2013). The investigations of using web 2.0 technologies on English writing skills of students with different learning styles. *Eurasian Journal of Educational Research*, 53/A, 93-106.
- Kabakçı, I. and Odabaşı, H. F. (2003). Bilgi toplumunda altı şapkalı öğretmen. *Anadolu Üniversitesi Eğitim Fakültesi Dergisi*, 13(1), 97-103.
- Klein, G. (1998). *Sources of power: How people make decisions*, MIT Press, Cambridge (MA).
- Kreitner, R. and Kinicki, A. (2001). *Organizational behavior, 5th Edition*, Irwin McGraw Hill, Burr Ridge (IL)
- Madden, M. and Rainie, L. (2005). Music and video downloading moves beyond P2P, Pew internet & American life project, URL (consulted June 2005): http://www.pewInternet.org/pdfs/PIP_Filesharing_March05.pdf
- Mason, R O. (1986). Four ethical issues of information age. *MIS Quarterly*, 10(1), 5-11.
- Masrom M., Ismail Z., & Hussein R. (2008). Computer ethics awareness among undergraduate students in Malaysian higher education institutions. *19th Australasian Conference on Information Systems*, 3-5 Dec 2008, Christchurch, 628-637.
- Mitchell, K. J., Ybarra, M., & Finkelhor, D. (2007). The relative importance of online victimization in understanding depression, delinquency, and substance use. *Child Maltreatment*, 12(4), 314-324.
- Moor, J. H. (2004). Reason, relativity and responsibility in computer ethics. In T. W. Bynum & S. Rogerson (Eds.), *Computer Ethics and Professional Responsibility*. Blackwell Publishing.
- Mullen H. & Horner, D. S. (2004). Ethical problems for e-government: An evaluative framework. *Electronic Journal of e-Government*, 2(3), 187-196.
- Ng, W. (2008). Virtual teamwork: Students studying about ethics in an online environment. *Research in Science & Technological Education*, 26(1), 13-29.
- Poole, D. (2007). A study of beliefs and behaviors regarding digital technology, *New Media & Society*, 9(5): 771-793.
- Quinn, M.J. (2005). *Ethics for the Information Age*. Boston, MA: Pearson Education.
- Sadowski, S. T., & Thomas, J. R. (2013). An Overview of Global Ethics for Educators and Practitioners in the Professional Field of Accountancy. *Applied Finance*, 416-428.
- Simon, H. A. (1997). *An empirically based microeconomics*, Cambridge, UK: Cambridge University Press.
- Stewart, M. (2000). The classroom, board room, chat room and court room: School computers at the crossroads, *School Business Affairs*, 66(9), 23.
- Stichler, R. and Hauptman, R. (1998). *Ethics, information and technology: Readings*. Jefferson, NC: McFarland & Company.
- Turiel, E. (1983a). Domains and categories in social cognitive development. In W. Overton (Ed.), *The relationship between social and cognitive development* (pp. 53-90). Hillsdale, NJ: Erlbaum.
- Turiel, E. (1983b). *The development of social knowledge. Morality and convention*. Cambridge, MA: Cambridge University Press.
- Turpin, S. M., & Marais, M. A. (2004). Decision-making: Theory and practice, *The Operations Research Society of South Africa* 20(2), 143-160.
- Uysal, Ö. & Şendağ, S. (2006) *Öğretmen adaylarının bilgisayar etiğine ilişkin görüşleri*. Yayımlanmamış Yüksek Lisans Tezi. Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü, Eskişehir.

- Van Buren, C. (2001). Teaching hackers: School computing culture and the future of cyber-rights, *Journal of Information Ethics* 10(1): 51–72.
- Willard, N. (2001) *Computer ethics, etiquette and safety for the 21st-century student*. Eugene, OR: International Society for Technology in Education.
- Wong, E. (1995). How should we teach computer ethics? A short study done in Hong Kong, *Computers in Education* 25(4): 179–91.
- Woodbury, M. (2003) *Computer and information ethics*. Champaign, IL: Stipes Publishing.