8-5-2011

Examining Ethical Decision Making Behavior in e-Learning Systems

Richelle L. Oakley
University of North Carolina at Greensboro, rloakle3@uncg.edu

Rahul Singh
The University of North Carolina at Greensboro, USA, rahul@uncg.edu

Examining Ethical Decision Making Behavior in e-Learning Systems

Richelle L. Oakley
University of North Carolina at Greensboro
rloakle3@uncg.edu

Rahul Singh
University of North Carolina at Greensboro
rahul@uncg.edu

ABSTRACT

E-learning is emerging as a way of using technology to re-create a one-on-one learning environment for numerous participants at a time and has become prevalent in the higher education arena. In addition to traditional forms of cheating, many universities currently deal with issues of students in traditional classrooms who engage in technology-facilitated cheating. The propensity for behaving unethically may be significantly greater in an e-learning system due to the lack of authority figures. Research states that when placed in a moral situation, individual behavior can be influenced by factors that are specific to the individual and factors that vary by situation. The focus of this paper is to understand the complex combination of individual and situational factors that can affect an individual's behavioral inclinations and provide deeper insight into how ethical decision-making behaviors differ in a technology-based environment as compared to an in-person environment.

Keywords

Ethical decision-making, e-learning, cheating

Introduction

The propensity for cheating or behaving unethically may be significantly greater in an e-learning system due to the elimination of physical confirmation of the student's identity. Individual users of the e-learning system do not have the physical presence of an authority figure to deter unethical behavior. Other than the university honor code and academic policies, the determination of whether a user will behave appropriately when interacting with an e-learning system relies mostly upon the individual user. Research states that when placed in a moral situation, individuals can be influenced by factors that are specific to the individual and factors that vary by situation, thus affecting the individual's behavior (Ford and Richardson, 1994). Currently, there is a gap in research on e-learning systems with regards to the user's tendency to behave unethically by engaging in various methods of cheating. Understanding the complex combination of individual and situational factors that can affect an individual's behavioral inclinations will provide deeper insight into how ethical decision-making behaviors differ in a technology-based environment as compared to an in-person environment. The purpose of this research is to examine these factors and their effect on an individual's ethical decision-making behavior in an e-learning system.

E-learning has become prevalent in the higher education arena, as evidenced by the estimated overall growth rate of 20% in enrollment for online courses at accredited degree-granting higher education institutions in the U.S. (Simonson, 2003). The prevalence of e-learning as a viable alternative to traditional means of education has become commonplace within many universities in the United States and across the world. It is also not limited to any one academic discipline in particular. For example, e-learning has emerged as a critical part of coursework in universities that specialize in educating doctors, nurses, lawyers, and educators themselves (Ruiz, Mintzer, Leipzig, 2006). However, as the use of virtual learning options grow within American degree-granting universities (Simonson, 2003), one cannot ignore the possibility of and current instances of unethical behavior in e-learning systems. For instance, in addition to traditional forms of cheating, many universities are currently dealing with students in traditional classrooms engaging in technology-facilitated cheating, with the aid of cell phones, PDAs and internet-connected laptops (Read, 2004). In light of the expected increase in enrollment in online courses and the prevalence of technology-aided cheating in education environments (Read, 2004; Simonson, 2003), it is essential that researchers examine user ethical decision-making behavior.

Universities award degrees to students who complete online education programs, vouching that the student possesses a high level of skills, knowledge, and abilities, similar to their face-to-face student counterparts. There is no demarcation or asterisk on the diploma that states the student received an "online" degree. Prior research on e-learning has mostly centered on the effectiveness of e-learning as a teaching or training tool (Johnson, Gueutal, Falbe, 2009; Sulcic, Lesjak, 2009; Suzuki, Tada,

2009). Research has also verified that the performance of e-learning systems are just as good as an in-person class, as determined by the knowledge learned by an individual (Sulcic, Lesjak, 2009; Zhang, Zhao, Zhou, Nunamaker, Jr., 2010). However, specifically with online degree programs, due to the increase in technology-facilitated cheating (Read, 2004) and the elimination of physical confirmation of the student's identity, there may be increased opportunities for individuals to behave unethically. This calls into question the real-world transferability of the results of extant research that validates the efficacy of e-learning systems. E-learning options are quickly replacing traditional classroom learning and it is essential to understand how user behavior is affected by this transition. As there is an increase in the use of information communication technologies (ICT) in academic institutions, there is also a simultaneous increase in questions on the ethical usage of those systems (Loch, Conger, 1996). Educators are operating under the guise that students normally behave in an ethical manner; that "cheating and other forms of unethical behavior are not the norm" (Sternberg, 2011). The very nature of education is built upon the trusting relationship between the student and the teacher. In a virtual education environment, the boundary of this trusting relationship is tested.

An individual makes an ethical decision in light of their situation or circumstance. E-learning system users are placed in a unique situation every time they log into the system. Examining user's behaviors through an ethical decision-making lens will provide a particularly useful approach to understanding the factors that can affect an individual's behavior. Due to the sensitive nature of unethical behavior, adopting an ethical decision-making perspective allows us to research the phenomenon more closely within its natural environment. This research provides an in-depth understanding of the individual and situational factors that affect a user's behavior. By controlling for either set of factors and for the technology that is used, we can further investigate the impact individual and situational factors have on ethical decision-making behaviors. Individual factors are inherent in each individual and cannot be changed. However, situational factors can have a significant impact on how those individual factors manifest themselves. Extant literature has examined the relationship between individual factors, situational factors, and ethical decision-making behavior (Ford, Richardson, 1994), however, to date there are no studies that examine it within the context of an e-learning system. Through this study, we were able to more fully understand how ethical decisions are formed and executed in e-learning systems. This provided a basis for developing a research model that can be experimentally verified in our ongoing and future research. Our research reduces a gap in IS literature by explaining user behaviors in e-learning systems from an ethical decision-making theoretical foundation.

The remainder of the paper is organized as follows. First, we define how unethical behaviors are enacted in e-learning systems, specifically how cheating behaviors are manifested in the virtual education environment. Next, we discuss how we apply an ethical decision-making lens to examine cheating in e-learning systems. We will then discuss our research methodological approach and provide an analysis of how individual and situational factors can affect an individual's ethical decision-making behavior in an e-learning system. Lastly, after a discussion of the results of a preliminary qualitative pilot field study to validate our model, we ultimately provide the future applications for our research conclusions.

Literature Review

Cheating in E-learning Systems

Recent research has explored the concept of the "technological detachment phenomenon" where, from an individual's point-of-view, the mere presence of technology between the individual and their unethical action absolves them of culpability (Harding, Finelli, and Carpenter, 2006; Young, 2010). This implies that a student's ethical decision-making behavior would be altered in virtual environments, including e-learning. However, there is paucity in extant research of research models that explain individual's modified decision-making behaviors in the increasingly prevalent e-learning system. This motivates our examination of ethical decision-making behavior, especially cheating behaviors, in e-learning systems.

Forms of cheating behaviors represent an ethical decision that students make in both traditional and online learning environments. In order to further evaluate issues concerning cheating behaviors in an e-learning system, we must first identify their manifestation in online classrooms. This will provide the basis to further examine the difference between traditional, or "face-to-face," classrooms and online classrooms used in e-learning. A primary difference between cheating in a traditional classroom and an online classroom stems from the absence of the physical presence of an authority figure. For example, a test conducted in a traditional class setting would involve the physical presence of an authority figure, the teacher, as well as other students in the room. Conversely, in an online classroom, there would be little to no teacher/student interaction outside of teacher assigned activities and student submitted assignments. Stephens et al. (2007) examined cheating behaviors using traditional and digital forms of cheating. They found that the "Internet and other digital tools are *conduits* and not *causes* of academic dishonesty," however, they state that the "*freedom* of [the] Internet, in particular, seems to further obfuscate already-abstract concepts" of what constitutes cheating. Greater understanding is needed on the new manifestations of cheating behaviors and the opportunities that technology provides in detecting these behaviors. Table 1, adapted from Stephens et al.'s (2007) research, provides the manifestations of traditional and online forms of cheating

behavior in a classroom environment. Students in an online classroom routinely make ethical decisions as to whether or not they will engage in these types of cheating behaviors.

	Classroom Environment	
Forms of Cheating Behavior	***Traditional***	***Online***
Impersonation on an assignment/ test	Copying (by hand or in person) another student's homework.	Having another person complete class work for you.
Unpermitted collaboration	Working on an assignment with others (in person) when the instructor asked for individual work.	Working with another student (physically present) when the instructor asked for individual work.
Plagiarized a few sentences or an entire paper	Submitting a paper that was developed by someone else or a paper that paraphrases without proper citation.	Submitting a paper that was developed by someone else or a paper that paraphrases without proper citation.
Used unpermitted notes during a test	Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	Accesses outside websites or reference materials during an online test or exam.

Table1. Forms of Cheating Behavior in Traditional vs. Online Classroom Environment (Adapted from Stephens et al., 2007)

Theoretical Model Development

We adopt an ethical decision-making theoretical approach to better understand cheating behaviors in e-learning systems. Ethical decision-making theory has successfully been used in research that examines user behavior with ICT (Conger, Loch, and Helft, 1995; Johnson, 1989; Loch and Conger, 1996; Thong and Yap, 1998). Thus, it provides a foundation for understanding user cheating behaviors in an e-learning environment. Ethical decision-making theory identifies individual factors and situational factors that affect an individual's ethical decision-making behavior (Ford and Richardson, 1994; Loe, Ferrell, and Mansfield, 2000).

Individual Factors

The individual factors, which have been extensively and empirically researched, include factors "that are a result of birth (e.g. nationality, sex, age, etc.) as well as those that are a result of the human development and socialization process (e.g. personality, attitudes, values, education, religion, employment, etc.)" (Ford, Richardson, 1994). More specifically, the importance of these individual factors may change in an online environment, thus, we raise the following research question:

RQ1: How do individual factors impact an individual's ethical decision-making behavior in an e-learning system?

Situational Factors

The less researched situational factors that affect an individual's ethical decision-making include any factors that are not individually specific, but are perceived as important by the individual in the ethical decision-making process. Examples of situational factors in an e-learning environment include deterrents imposed, perceived pressures, peer and authority influences, and perceived moral intensity. As such, it raises the question of whether previously studied antecedents of ethical decision-making hold true in an online learning environment.

RQ2: How do situational factors impact an individual's ethical decision-making behavior in an e-learning system?

Figure 1 is a visual representation of the relationships between individual factors, situational factors, and ethical decision-making. This research provides valuable insight into the individual and situational factors that may affect an individual's ethical decision-making behavior in an e-learning environment. Prior research has shown a correlation between "cheating in college and subsequent unethical behavior in the workplace" (Smith, Davy, Rosenberg, Haight, 2002). This unethical behavior can resurface in a professional environment, thus, organizations have a vested interest in understanding how these types of factors affect an individual's ethical behaviors. Also, IS literature on e-learning has previously focused on the effectiveness of it as a teaching tool, but has not addressed the ethical issues that are brought about by its usage. This research fills that void and provides a better understanding of the impact that individual and situational factors have on a user's ethical decision-making behavior in e-learning systems.

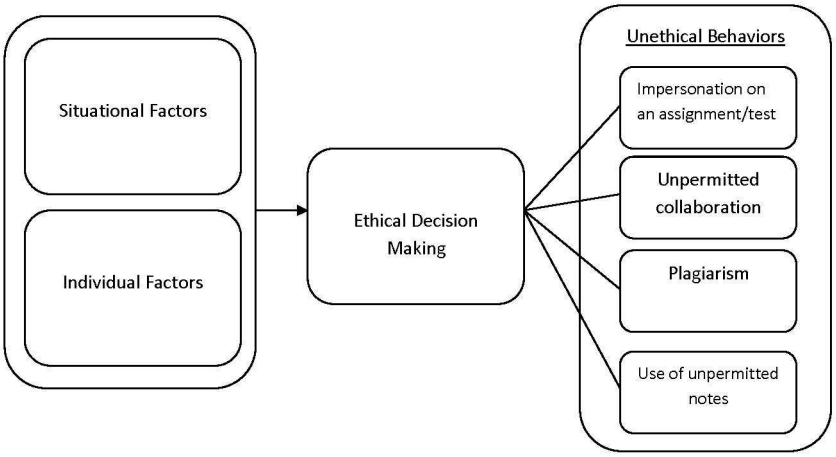

Figure 1. Proposed Theoretical Model of Ethical Decision-Making in E-Learning Systems

Research Methodology

In order to explore the relationship between individual factors, situational factors, and ethical decision-making behavior of students in e-learning systems, we conducted a pilot field study using structured interviews with students currently enrolled in e-learning classes. The purpose of this qualitative approach was to help inform the development of a research model on ethical decision-making behavior in e-learning systems. By discussing the phenomenon with individuals that are directly involved, we were able to explore the boundaries and intricacies of ethical decision-making behavior in e-learning systems. Qualitative methods are conducive for understanding people and the environment within which they live (Kaplan and Maxwell, 1994; Palvia, Leary, Mao, Midha, Pinjani, and Salam, 2004). These methods are feasible for developing an in-depth understanding of human behavior and the reasons that govern behavior. Qualitative data sources include direct observation, participant observation, in-depth interviews, and documents and texts (Myers, 1997). According to Kaplan and Maxwell (1994), the objective of understanding a phenomenon from the perspective of a subject and his environment is most feasible with a qualitative approach. Thus, for this exploratory research, we take a qualitative approach to gather data to develop and understand the ethical decision-making behaviors of students in online classes.

We conducted face-to-face interviews with students from a large regional university in a group setting. Students were assured the responses would be anonymous, even though the conversation was recorded for future reference purposes. Additionally, to remove student concerns of self-implication, the questions surrounding the cheating and unethical behavior were asked using 3rd-person scenarios. We used structured question stems which were centered on the literature-informed conceptualization of cheating in e-learning systems as described above. We believe this format allowed the student to envision some of the issues that surround unethical behavior in e-learning systems. It also provided them with the opportunity to discuss examples of how a student might maneuver the ethical decision-making process in a different manner than they would in an in-person class.

Individual Factors in an E-Learning System

The individual factors that are particularly relevant in an e-learning system are an individual's motivation (intrinsic and extrinsic), their sense of alienation, their process of neutralization and the rewards & sanctions they may incur as a result of their behavior. Davy et al. (2007) concisely describes an individual's intrinsic and extrinsic motivations towards cheating, a form of deviant behavior. The intrinsic motivations drive a person to make ethical decisions "simply for the pleasure or satisfaction derived from it," whereas the extrinsic motivations are specifically geared towards producing "a positive outcome or avoiding a negative outcome" (Davy et al., 2007, p. 283). Combined, these types of motivations may be affected by the virtual nature of the online learning environment. For example, an individual may be motivated to engage in unethical behaviors because they know the professor cannot detect this type of behavior (intrinsic) or because they want to produce a positive outcome of a passing grade (extrinsic). An interview participant stated that cheating may become an option, or the "easy way out" of completing an assignment or test for an online class of a particularly complex topic, especially if they do not feel comfortable with the topic and feel like they cannot get help from the instructor.

Alienation is an often cited influence on academic dishonesty (Smith, Davy, Easterling 2004; Smith et al., 2002) and can be described as a psychological view of being removed from culture, exhibited by feelings of "social isolation, powerlessness and the absence of norms" (Smith et al., 2004). This is especially relevant in an e-learning system where the user is not in a physical classroom, surrounded by social norms of ethical behavior. One interview participant described a scenario where a student is in their room with the door closed, completing work for an online class. This description correlates with a student's mental state of operating in isolation, detached from peers and authority figures.

Individuals that engage in dishonest behavior use rationalizations to remove any sense of internal guilt of their actions or external guilt from outside parties (Smith et al., 2004; Nonis and Swift, 1998). This action of neutralization is another often cited influence on academic dishonesty and can be prevalent in an e-learning system. As an individual engages in unethical behavior in an e-learning system, they do not have the physical presence of outside parties to mitigate their dishonest behavior. The burden of guilt would lie mostly upon the individual and might have a different result in a highly virtual environment. Interview participants stated that in an online class it was easier for the student to believe that "anything goes" because they are not interacting with the professor to receive clear instructions. Further, in the unlikely case that unethical behavior is detected, the students felt that it would be easy for the student to "blame it on the technology" or state "that they did not understand the instructions."

Rewards and sanctions are closely related to ethical decision-making (Loe et al., 2000; Ford and Richardson, 1994) as they are the main parts of evaluating an opportunity. As counterintuitive to a value-based ethical view, research has shown that rewarding unethical behavior will ensure its continued occurrence (Loe et al., 2000; Ford and Richardson, 1994). Typically, rewarding behavior will create a repetitive nature to that behavior, whereas sanctions typically reduce the occurrence of the initiating behavior. In an e-learning system, rewards can be understood through receiving high performance scores. On the other hand, sanctions may be perceived as less severe in an online environment due to a decreased belief of the possibility of detection. Interview participants stated that because they are not aware of a way for the professor to monitor their behavior, they believe it is unlikely that the professor will sanction their unethical behavior. They further stated that in an in-person class they are more likely to get caught, thus, they are less likely to try to cheat. However, the temptation to cheat would be higher in an online class since sanctions for cheating can only be applied if the cheating behavior can be detected.

Situational Factors in an E-Learning System

Examples of situational factors in an e-learning environment include deterrents imposed, perceived pressures, peer and authority influences, and perceived moral intensity. The role of in-class deterrents in reducing cheating behaviors has been extensively researched (Davy et al., 2007; Smith et al., 2002; Nonis & Swift, 1998), including "announcing penalties, … , monitoring students vigilantly during exams, and giving alternate forms of the exam to adjacent students" (Davy et al., 2007, p. 286; Smith et al., 2002, p. 50). These deterrents can be considerably less effective in an online learning environment. The physical absence of authority, the varying intensity of a penalty that is read on a screen versus expressed by a person, and the impression of sternness by visually experiencing the alternate test selection method are all removed in an e-learning system. All of the student interview participants felt that the university academic policies would have minimal to no effect on an individual's behavior in an online class. A participant stated that the presence of a proctor or an authority figure would ensure ethical behavior. Further, this understanding shows that currently in e-learning systems, there is a loss of the most effective deterrent – the instructor.

Pressure to engage in unethical behavior in an e-learning environment can arise from multiple avenues. There are academic pressures to perform such as "pressure for grades, peer competition, academic stress, and the perception that there is an inconsistent application of academic standards and rules" (Smith et al., 2002, 2004). In order to remain competitive with

their peers, individuals may encounter greater pressure to engage in unethical behavior (Ford, Richardson, 1994). The pressures that an individual feels can increase the occurrence of unethical behavior and the online learning environment can add to that increase due to its lack of authoritarian oversight. One student described her dislike for taking on-line classes, yet having to take a mandatory class that was only offered in an on-line format. This type of pressure, where the student has limited control over the learning format that they will operate within, can affect the student's ethical-decision making behavior.

Ford and Richardson (1994) state that peer influence on ethical decision-making can be affected by "both the intensity and frequency of contact with that person's peers" (p. 212). In an e-learning system, peer influence can be relatively low since there is no physical contact with class peers. However, it can also be relatively high with regards to peer collaboration on assignments intended for individual assessment. Authority influences play a role in ethical decision-making (Jones, 1991; Kelman, Hamilton, 1989). The physical presence of the authority figure and the fear of embarrassment are factors that affect the intensity of the authority influence (Kelman, Hamilton, 1989). The relevance of these factors may dissipate in an online learning environment. On the other hand, an interview participant described a situation where there were groups of students in the same online class that worked together on individual assessments, such as assignments and tests. This type of behavior could result in a reconceptualization of what the "norms" are for ethical behavior in an on-line class.

Moral intensity is a relatively new situational factor that focuses on the "nature of the ethical issue" (Loe et al., 2000, p. 186), more specifically the "extent of issue-related moral imperative in a situation" (Jones, 1991, p. 372). Jones (1991) details six characteristics of moral intensity – "magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity, and concentration of effect" (p. 372). These characteristics are of particular importance in an e-learning system because the degree to which they are perceived by the individual may be significantly altered by the physical presence of peers and authority figures. For example, the virtual nature of online learning may affect the individual's perception of their proximity to sanctions of unethical behavior. An interview participant summarized that since there is "no one watching" the student, taking an online class is pretty much "open to anything." All of the interview participants believed that there is no way for the instructor to detect unethical behavior in e-learning systems. However, another participant did highlight that an effective deterrent to cheating in online classes are plagiarism-detection technologies, specifically when instructors set a limit on the percentage of word duplication that is acceptable. The temporal immediacy of this sanction seemed to significantly affect the students' perception of the severity of the offense and the likelihood of detection.

Using the findings from the pilot field study, we refined our research model, shown in Figure 2, to reflect the further delineation of concepts within each of individual factors and situational factors constructs.

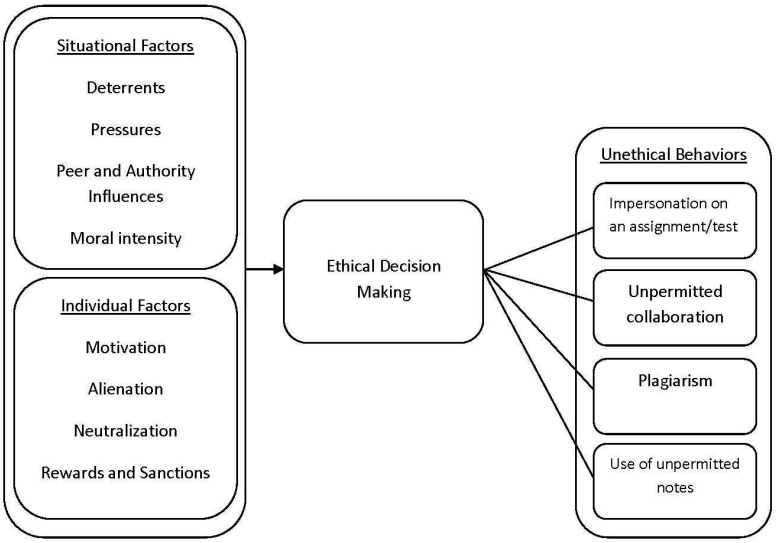

Figure 2. Proposed Research Model of Ethical Decision-Making in E-Learning Systems

Conclusion

The conceptualization of what is considered unethical and ethical behavior in an in-person classroom may be considerably different than the conceptualization in an online class. Students may feel like they have the freedom to behave in any manner

they feel appropriate because there is no established method of detecting their unethical behavior in e-learning systems. The proposed research model, which was supported by the responses from the pilot field study, appropriately demonstrates that there is a relationship between individual and situational factors on ethical decision-making behavior in e-learning systems. This refined insight into user behavior can provide suggested improvements to the current mechanisms for mitigating this phenomenon. Our future research will focus on using quantitative and qualitative methods to further validate the model, as well as to develop hypothesis about the relationships between the components of individual factors and situational factors as they relate to ethical decision-making in e-learning systems.

References

1. Conger, S., Loch, K., and Helft, B. (1995) Ethics and information technology use: A factor analysis of attitudes to computer use. *Information Systems Journal*, 5, 161-184.
2. Davy, J., Kincaid, J. Smith, K., Trawick, M. (2007) An Examination of the Role of Attitudinal Characteristics and Motivation on the Cheating Behavior of Business Students. *Ethics & Behavior,* 17, 3, 281-302.
3. Ford, R., Richardson,W. (1994) Ethical Decision Making: A Review of the Empirical Literature, *Journal of Business Ethics,*13, 3, 205–221.
4. Harding, T., Finelli, C., and Carpenter, D. (2006) Examining the underlying motivations of engineering undergraduates to behave unethically, *Proceedings of the 2006 ASEE National Conference and Exposition, Chicago*, *IL*.
5. Johnson, D. (1989) A framework for thinking about computer ethics, In J. Robinett and R. Barqhin (Eds.), *Computer and Ethics: A Sourcebook for Discussions,* Polytechnic Press, NY, 26-31.
6. Johnson, R., Gueutal, H., Falbe, C. (2009) Technology, trainees, metacognitive activity *and e-learning effectiveness, Journal of Managerial Psychology, 24, 6, 545-566.*
7. Jones, T. (1991) Ethical Decision Making by Individuals in Organizations: An Issue-Contingent Model, *The Academy of Management Review*, 16, 2, 366-395.
8. Kaplan, B., and Maxwell, J. A. (1994) Qualitative Research Methods for Evaluating Computer Information Systems, in E*valuating Health Care Information Systems: Methods and Applications,* J. G. Anderson, C. E. Aydin, and S. J. Jay (eds.), Sage, Thousand Oaks, CA, 45–68.
9. Loch, K., Conger, S. (1996) Evaluating Ethical Decision Making and Computer Use, *Communications of the ACM*, 39, 7, 74-83.
10. Loe, T., Ferrell, L. Mansfield, P. (2000) A Review of Empirical Studies Assessing Ethical Decision Making in Business, *Journal of Business Ethics,* 25, 3, 185-204.
11. Myers, M. (1997) Qualitative Research in Information Systems, *MIS Quarterly*, 21, 2, 241-242.
12. Nonis, S., Swift, C. (1998) Cheating Behavior in the Marketing Classroom: An Analysis of the Effects of Demographics, Attitudes, and In-Class Deterrent Strategies. *Journal of Marketing Education,* 20, 3, 188–199.
13. Palvia, P., Leary, D., Mao, E., Midha, V., Pinjani, P., and Salam, A. (2004) Research Methodologies in MIS: An Update, *Communications of the Association for Information Systems,* 14, 526-542.
14. Read, B. (2004) Wired for Cheating, *Chronicle of Higher Education*, 50, 45.
15. Ruiz, J., Mintzer, M. and Leipzig, R. (2006) The Impact of E-learning in Medical Education, *Academic Medicine*, 81, 3, 207-212.
16. Simonson, M. (2003) Distance Education: Sizing the Opportunity, *The Quarterly Review of Distance Education,* 4, 4, 370-371.
17. Smith, K., Davy, J., Rosenberg,D., Haight, G. (2002) A structural modeling investigation of the influence of demographic and attitudinal factors and in-class deterrents on cheating behavior among accounting majors, *Journal of Accounting Education,* 20, 1, 45-65.
18. Smith, J., Davy, J., Easterling, D. (2004) An Examination of Cheating and Its Antecedents among Marketing and Management Majors, *Journal of Business Ethics,* 50, 1, 63-80.

19. Sulcic, V. and Lesjak, D. (2009) Elearning and study effectiveness. *Journal of Computer Information Systems,* 49, 3, 40-47.
20. Stephens, J., Young, M., & Calabrese, T. (2007) Does Moral Judgment Go Offline When Students Are Online? A Comparative Analysis of Undergraduates' Beliefs and Behaviors Related to Conventional and Digital Cheating, *Ethics & Behavior*, 17, 3, 233-254.
21. Sternberg, R. (2011) Slip-Sliding Away, Down the Ethical Slope, *Chronicle of Higher Education*, 57, 19, A23.
22. Suzuki, K. and Tada, N. (2009) A Layers-of-Quality Model in Online Course Design: The Five-E Model, *International Journal for Educational Media and Technology,* 3, 1, 92-103.
23. Thong, J., Yap, C. (1998) Testing an ethical decision-making theory: the case of softlifting, *Journal of Management Information Systems,*15, 1, 213-237.
24. Welsh, E., Wanberg, C., Brown, K., and Simmering, M. (2003) E-learning: emerging uses, empirical results and future directions, *International Journal of Training and Development,*7, 4, 245-258.
25. Young, J. (2010). High-Tech Cheating Abounds, and Professors Bear Some Blame, *Chronicle of Higher Education*, 56, 29, A1-A14.
26. Zhang, D., Zhao, J., Zhou, L., and Nunamaker, Jr., J. (2010) Can e-learning replace classroom learning?, *Communications of the ACM,* 47, 5, 75-79.