

The ethics of instructional technology: issues and coping strategies experienced by professional technologists in design and training situations in higher education

Hong Lin

Published online: 9 February 2007

© Association for Educational Communications and Technology 2007

Abstract To correspond to the Association for Educational Communication Technology (AECT) Code of Professional Ethics and the professional journal TechTrends' ethics columns, this paper provides empirical data regarding ethical issues associated with the use of instructional technology in design and training situations. In-depth interviews of 20 professional technologists were conducted. The three most prominent ethical concerns reported were copyright, learner privacy, and accessibility. The results of this study also identified three ethical issues that have not been discussed extensively in the literature: diversity, conflicts of interest, and professionalism/confidence. In addition to identifying ethical issues, the findings of the study also contribute to the current literature through identifying coping strategies of ethical issues adopted by professional technologists. Finally, implications to researchers, managers, and practitioners were discussed.

Keywords Ethical issues · Instructional technology · Professional technologists · Design · Training

Introduction

In recent years, technological forces and such new styles of learning as online learning have motivated educational institutions to increasingly incorporate instructional technology into online course design and Web-based training. Such a change, in turn, has enabled learning and training to become increasingly digital, mobile, and virtual. Meanwhile, the instructional technology that has

H. Lin (✉)

Institute for Teaching and Learning Excellence, Oklahoma State University, 308 S. Keats Drive, Stillwater, OK 74074, USA
e-mail: hong.lin@okstate.edu

profoundly impacted course design and training practices has also given rise to the proliferation of ethical issues relating to the applications of the technology. Such ethical issues include, but are not limited to, digital copyright infringement (Mabry & O'Driscoll, 2003), the violation of private online information (Mason, 1995), and other inappropriate use of instructional technology.

To address the emerging ethical issues in the field of educational communications and technology, the Association for Educational Communication Technology (AECT) has established a Code of Professional Ethics for its members with complex and comprehensive guiding principles that aim at a wide range of professional behaviors. Correspondingly, the AECT professional journal *TechTrends* has published a series of ethics columns to interpret the Code established by AECT. The AECT Code of Professional Ethics and the *TechTrends* series have undoubtedly heightened the field's awareness of the importance of ethical behaviors.

Similar efforts to facilitate the ethical use of technology also occur in the IT field (see Pourciau, 1999; Smith, 2001; Taylor & Moynihan, 2002), in adult education (see Brookfield, 1988; Gordon & Sork, 2001; McDonald & Wood, 1993), and in the training arena (see Aragon & Hatcher, 2001; Piskurich & Sanders, 1998; Swanson, 1999). However, according to Mabry and O'Driscoll (2003), these largely speculative discussions of ethical challenges and ways to navigate the challenges in these related fields are not "grounded in empirical research," and "by far the least researched perspective is an empirical one that examines ethics and ethical dilemmas actually encountered in practice" (p. 82). Yeaman (2004) echoed this view by claiming that professional ethics and the misuse of technology by professional technologists "may be a rather neglected topic for research" (p. 16).

Given the fact that more and more professional technologists are employing instructional technology on a daily basis (Piskurich & Sanders, 1998), the lack of empirical studies in the area of ethics and instructional technology has obviously become a concern (Mabry & O'Driscoll, 2003; Schwier, 2005; Visscher-Voerman & Gustafson, 2004). The purpose of this study, therefore, was to identify ethical issues and coping strategies experienced by professional technologists in design and training situations. It was hoped that the results would contribute to the current literature about ethical obligations in the field of educational communications and technology.

Actually, practitioners and researchers in the field have had a long history of examining ethical obligations and developing expectations for professional behavior as well as a code of ethics. In the following section, I review such efforts while developing a rationale for using a qualitative methodology to identify the kinds of ethical issues exposed to professional technologists and ethical obligations expected in the field.

Professional code and ethical obligations

Since its emergence as a field, the field of educational communications and technology has a long tradition of recognizing the importance of having a code

of ethics as a profession. In the 1950s, the Development of Audio-Visual Instruction (DAVI) was established as a division of the National Education Association (NEA) (Saettler, 1990). To study the general problem of professionalism in the field, DAVI set up a Committee on Professional Education. James Finn (1952), who chaired the committee, noted six essential characteristics of a profession:

1. An intellectual technique
2. A practical application of the technique
3. A long period of training
4. An association of and communication between members
5. A code of ethics and standards
6. An intellectual theory and research

Among these essential characteristics, Finn (1952) stressed that ethics, standards, and their enforcement create a strong professional association for its members. He added that the field should reach the stage “where it has a well-defined code of ethics, a series of standards based upon fundamental research” (p. 237), and, fundamentally, “its members are hired or licensed with an obligation on the part of each professional to the ethics and standards of his profession” (p. 237). At the time when Finn wrote the article, the educational communications and technology field did not reach such a stage. In 1971, DAVI changed its name to AECT and the NEA’s Code of Ethics of the Education Profession was later unanimously accepted as the code of ethics for AECT (AECT Web site).

Across time, AECT has persistently aimed to heighten the awareness of the importance of ethical behavior. The AECT code is carefully reviewed by an active committee on professional ethics on a yearly basis. Concurrently, there have been lively discussions about ethical conduct related to instructional design and technology. Campbell, Schwier, and Kenny (2005), for example, proposed that instructional designers become “an agent of social change at the personal, relational, and instructional levels” (p. 242). Inouye, Merrill, and Swan (2005) indicated that instructional design and technology should go beyond its three traditional centers (the scientific paradigm, the design paradigm, and the technology paradigm) and extend to the center of ethics (the ethics-centered paradigm focuses on what professional technologists are, do, and know as professionals. Similarly, Nichols (2002), in one of *TechTrends*’ “Ethics Today” series, summarized the importance of ethical obligations for professionals in the field:

...having an ethical obligation does not mean I favor a single or strictly codified system by which we can seek out, try, convict, and punish technologists who are guilty of ethics violations. But I can suggest ways to proceed with carrying out our obligation to be ethical. ..simply attempting to find ways to understand and meet ethical obligations is good...In our attempts, at least we are thoughtfully engaged with ethics (p. 53).

Emerging ethical issues of instructional technology

In this section I review some ethical issues that have been frequently discussed in the literature. A review of the literature focused on ethical issues in the applications of instructional technology will provide a framework that will help us compare what we already know to areas identified in this study that need further exploration.

Copyright

In the literature, discussions of digital copyright mainly focus on its legal perspectives. Two legislations are relevant to the use of digital copyright in educational institutions. The Digital Millennium Copyright Act of 1998 limits the liability of nonprofit institutions of higher education—when they serve as online service providers and under certain circumstances—for copyright infringement by faculty members or graduate students (UCLA Online Institute, 2006). The TEACH Act, an acronym for the Technology, Education, and Copyright Harmonization Act, gives more freedom to accredited, nonprofit educational institutions to use copyright protected materials in distance education—including on Web sites and by other digital means (The American Library Association).

On the other hand, the literature also covers discussions of copyright from its ethical perspectives. Mabry and O'Driscoll (2003) pointed out that to lower the cost of designing, developing, and delivering learning content, some organizations reuse and reorganize learning content that is already available. In this sense, professional technologists are susceptible to such ethical breaches as taking others' credit consciously or inadequately and even becoming involved in high-tech intellectual property crime (Mabry & O'Driscoll, 2003). Similarly, Kebbati (2001) identified some unethical computer behaviors in a high school classroom such as the confusion of fair use guidelines and copyright clearance for teaching. In university settings, Lan and Dagley (1999) cautioned that as university professors busily create online courses and distribute instructional materials online, educational technologists, legal counsel, and university administrators need to advise faculty of the dangers of trying to do things the old way in a new format, that is, putting hardcopy materials online without copyright clearance.

Confidentiality

With its swift expansion and growing popularity, information technology provides broad access to confidential resources (Pourciau, 1999). Violation of individual privacy and the abuse of confidential information have steadily proliferated. In 2000 alone, more than 200 bills on privacy were introduced in the 106th Congress of the United States (Hatcher, 2002). These measures aim at protecting individual rights and controls of personal data.

In design and training situations, instructional technology exacerbates the recognized confidentiality issues, some of which pertain to professional ethical conduct. For example, adult learners in training situations may feel pressured that their performance or level of competences would be divulged to their managers. The pressure is not imaginary as new types of technological software, such as expertise locators, can track every step of the use of online resources, assume a learner's interests and potential expertise based on his/her online activities, and categorize the individual within the organization (Mabry & O'Driscoll, 2003). Frequently, all this occurs without the acknowledgement of the learners.

Web accessibility

A 1997 US Census Bureau report indicated that 19.6% of the US population has some sort of disability such as visual or hearing impairments (French & Valdes, 2002). It is clear that providing equal learning opportunities to people with disabilities is imperative. In 1996 the Justice Department stressed that the entities under the ADA are required to provide effective communication through print media, audio media, or such electronic media as the Internet (French & Valdes, 2002). In 2001 the accessibility requirements for US electronic and information technology took effect under Section 508 of the Federal Rehabilitation Act, which is considered to be the ADA of cyberspace (Waddell & Thomason, 1998).

Other than laws that require Web accessibility, many agencies, from an ethical standpoint, have been contributing to the growth of Web accessibility to people with disabilities. For example, the World Wide Web Consortium (W3C) has earned international recognition for establishing guidelines and providing resources to the universal design of the World Wide Web. Web Accessibility in Mind (WebAIM) aims at improving accessibility to online learning opportunities for all people and, especially, helping people with disabilities who experience difficulty in getting access to post-secondary online learning opportunities.

These joint efforts have been appraised by researchers. Foley and Regan (2002) stressed that "accessibility is the right thing to do" (p. 66) because it gives people with disabilities a broader range of employment and educational opportunities via innovative technology. French and Valdes (2002) echoed that "the sooner we create and implement sustainable solutions, the sooner ALL students can participate in their right to experience the power of the Internet for lifelong learning" (p. 13). However, as Carnevale (1999) indicated, often those Web site creators of distance-education programs in higher education do not ignore the Web accessibility issue on purpose; rather, they don't always realize the importance of Web accessibility.

Diversity and inequality

One challenge to our increasingly diverse society is the balance between those who have power and resources and those who have not. As Han (1994)

contents, power gaps and inequality in society are “partly attributed to general apathy concerning ethics and disparity in sharing knowledge discovery between ordinary people and those holding power” (p. 1). Instructional technology, as a powerful tool to enhance knowledge acquisition and transform the global information infrastructure, can be used to achieve the goals of closing the power gaps as well as widening the gaps. Ideally, if technology-based learning is accessible to everyone, the resulting knowledge discovery is helpful in removing societal inequities. On the contrary, if technology-based learning is manipulated by someone who uses the power inappropriately, power gaps can be widened (Han, 1994).

Unfortunately, technology-based learning has seen limited use in “teaching diversity or developing societies based on equality” (Hatcher, 2002, p. 146). In other words, while technology empowers some to advance and reach potentials, it also reinforces traditional barriers to others. Professional technologists, as Hatcher (2002) suggests, should “be diligent in providing equal access to training and other technology-based, career-enhancing activities” (p. 145).

Technology-based learning

Technology-based learning seeks to “improve learning through the metaphor of ‘instructional technologies’” (Hatcher, 2002, p. 146). However, certain ethical issues arise when technology-based learning is conducted. The first ethical issue is that available technology often overshadows learning needs or each new technology is used as a replacement for all existing learning methodologies (Piskurich & Sanders, 1998). In this sense, knowingly recommending or adopting unnecessary technologies is known as “technolust” (Bassi, Buchanan, & Cheney, 1997). Arguably, researchers suggest that an appropriate performance analysis, which emphasizes the analysis of performance gaps, learning needs, goals, and identification of the underlying causes of the problems, should be conducted to justify which technologies are the best fit and can supplement the intervention (Rossett, 1992; Rossett & Arwady, 1987).

The second ethical challenge for professional technologists relates to the awareness of the impact of their work on other people. The decisions to use or dispose of instructional technologies do not stand alone with the decision makers. Rather, as Mason (1995) points out, any changes in “hardware, software, information content, information flow, knowledge-based jobs, and the rules and regulations affecting information are among the many things agents do that affect others” (p. 55). For this reason, professional technologists should take into consideration their actions and take responsibility for the impact of their actions on other people.

Research questions

The purpose of this study was to investigate *what* ethical issues associated with instructional technology are experienced by professional technologists in their

work activities, and *how* these issues are handled by these practitioners in the context of implementing instructional technology. I selected a qualitative methodology for two key reasons. First, according to Yin (1994), qualitative analysis is a well-suited method to investigate social phenomena that are descriptive, interpretive, or analytical. As the purpose of this study was to intensively describe and uncover the very ethical issues surrounding professional technologists, a qualitative methodology can facilitate discovery of the nature of ethical issues in the design and training situations. Second, this study was exploratory in nature. Rich descriptions and inductive analysis can help people in the field of educational communications and technology appropriately understand a phenomenon that has a paucity of empirical studies in the literature.

With this understanding, I designed two guiding research questions:

1. What ethical issues associated with instructional technology do professional technologists report as having experienced in design and training situations?
2. How did professional technologists handle the identified ethical issues?

Methods

Instrument

I used in-depth, face-to-face interviews to collect data. The advantage of in-depth interviews, as Van Manen (1990) points out, is that a researcher, by conducting the interview and reading the interview transcripts, can discover, literally hear, the meaning of the lived experience from the participant's perspectives. Seidman (1998) and Spradley (1979) also indicated that in-depth interviews allow the interviewees interweave personal background, work experience, and organizational culture into the interview questions.

To develop the interview guide, I first searched prior studies to generate a variety of potential ethical issues in design and training situations and in adult education. Although I found few empirical studies that particularly investigate ethical issues associated with the applications of instructional technology, the results of three particular studies identified some ethical issues that shed light on the development of my interview guide. These include Gordon and Sork's (2001) and McDonald and Wood's (1993) study regarding the adult educator and Rothwell and Kazanas' (2004) study regarding instructional designers. The interview guide for this study consisted of seven open-ended questions with suggested probes adaptable to each participant. The open-ended questions asked professional technologists a series of questions on recalling not only ethical issues experienced by the participants but also experienced by their colleagues in their daily work, and how they handled these issues. For example, one research question asked the participants to recall a specific example of an ethical situation that was the most salient to them, describe the

situation in detail, the way they handled the issue, and the result of their action (see Appendix A for a copy of the interview outline).

To enhance the clarity and validity of the interview guide and to generate recommendations for the interview process, I asked two instructional designers to review it and made suggested revisions. Afterwards, I conducted a pilot interview with a senior instructional designer and made further revisions.

Participants

In order to select and recruit research participants who would become the main informants of the research questions, I adopted purposive or criterion-based sampling procedures, that choose participants with certain desired characteristics in a typical site so that "...it is not in any major way atypical, extreme, deviant, or intensely unusual" (Patton, 1990, p. 89). Using this strategy, I identified the three largest departments in a major Mid-Atlantic research university with the most professional technologists as well as the largest number of online courses and Web-based training sessions offered to faculty. I carefully compared the following departments' Websites and met with their directors to ensure that their strategic goals and functions were consistent.

I therefore targeted professional technologists working for the departments to participate in the study: (a) a university-wide "Teaching and Learning with Technology" department; (b) a university-wide online education department; and (c) a college-level e-Education Institute. The participants were recruited in the following ways. First, I discussed with the directors of the three departments regarding what responsibilities a professional technologist had in their respective departments. Based on their feedback as well as feedback I received from several meetings with a faculty committee, I established several criteria to ensure that the research participants had an appropriate level of experience in utilizing instructional technology in their daily operations from which to draw upon to discuss experiences in ethical situations. Specifically, it was required that participants have had at least a minimum of 2 years of experience working with instructional technology in the following areas:

- Working with faculty members or other clients to create online courses and materials;
- Providing instructional technology support for an online environment; and
- Incorporating instructional technology into training programs.

Second, during the discussions with the directors, it was determined that practitioners under three job categories met the selection criteria: Instructional Design, Instructional Technology Support, and Training Services. After the meetings, the directors sent out an e-mail announcement respectively to their departments' list serves to encourage their staff to contact me on a voluntary basis. My invitation letter, which included the title, purpose, and the

selection criteria of the study, was attached to the announcements. After I heard from the potential participants, I called or e-mailed them to review their job responsibilities. In this way, I recruited a total of 20 voluntary participants whose job responsibilities met the selection criteria.

Although these participants had different job titles, such as Instructional Designer, Instructional Technologist, E-Learning Specialist, and Training Specialist, their job responsibilities met the described selection criteria. Out of 20 participants, 10 were men and 10 were women; 16 were between the ages of 25 and 45 years and had spent a variety of years working in instructional technology; 12 had an adult education/instructional systems/training background whereas others had such educational backgrounds as computer sciences, business management, and linguistics (See Table 1).

Procedures

At the beginning of each interview, I asked the participant to sign a Consent Form and fill out a demographic profile as part of the interview process.

The length of the interviews in this study varied, with an average session lasting about 40 min. The interviews were conducted over a 4-month period. During the interviews, I followed the interview guide but remained flexible to pursue probes and clarification questions. Since recalling ethical situations and being tape recorded may be a concern to some participants, I tried to encourage participants to relax by changing the topic for a moment or ensuring the participants of the confidentiality of their responses and the anonymity of their identity. After the interview, a synthesis of each interview was prepared and sent to the participant for content verification (member checking). All the participants replied and indicated that the syntheses had captured the essence of their interviews.

Data analysis

Data analysis involved three phases. The initial phase involved the free and open-coding technique. Open-coding is a strategy that involves “the naming

Table 1 Demographic information for study participants ($n = 20$)

Age	Educational major/specialty	Official title	Years of experience in the field
25–35 years ($n = 7$)	Adult education /Instructional systems/Training ($n = 12$)	Instructional designer ($n = 9$)	1–5 years ($n = 8$)
36–45 years ($n = 9$)	Others ($n = 8$)	Instructional technologist ($n = 4$)	6–10 years ($n = 4$)
45–55 ($n = 3$)		Training specialist ($n = 6$)	11–15 years ($n = 4$)
Other ($n = 1$)		Other ($n = 1$)	Over 15 years ($n = 4$)

and categorizing of phenomena through close examination of data” (Strauss & Corbin, 1990, p. 62) and constantly comparing the categories (Glaser & Strauss, 1967). I began the data analysis process by immersing myself in the data and trying to generate many key words and notes. These key words, phrases, and notes are the units of analysis, which provide the groundwork for further analysis. Afterwards, I began to compare the similarities and differences between and among the units of analysis to see whether these units were *conceptually congruent* (Glaser & Strauss, 1967) and could be grouped together. For example, if a unit of analysis from Participant 1 was labeled as “copyright clearance,” another unit from Participant 2 was labeled as “getting permissions for using others’ work,” and a third unit from Participant 3 was labeled as “helping faculty members to understand copyright issues,” then, these three units were perceived as conceptually congruent in that they dealt with copyright issues from different perspectives. For further analysis, sentences and paragraphs that contained these three units were cut and pasted to form a new grouping. Eventually, I made a condensed list of groupings, in which each grouping contains similar ethical issues and coping strategies.

The second phase of the data analysis process engaged axial coding. This method uses a series of procedures that make connections within and between groupings and allows for new combinations of data (Strauss & Corbin, 1990). With the help of the condensed list that was developed in Phase 1, I sought common and related concepts from a collection of instances documented in each grouping from the list. Through a close examination of what the participants described, I found that the units of “copyright clearance,” and “getting permissions for using others’ work” dealt with the same situation where the participants had to use copyrighted materials in their own work. Therefore, these two units of analysis were combined and relabeled as “copyright for practitioners’ own work.” Whereas, the third unit of analysis, which is “helping faculty members with copyright,” was identified as a different situation, it, therefore, was labeled as “copyright for faculty work.” At this point, patterns and composed themes that connect the professional technologists’ experiences began to emerge.

The last phase was to generate an overall theoretical understanding of the main themes within the data (Strauss & Corbin, 1990). In doing so, I examined and summarized core variables as themes. Then, I identified different situations and put them under each theme, if there were any. In summary, the last phase involved generating main themes from the coded data and presenting them for each research question.

Validity, reliability and objectivity

To ensure the reliability and accuracy of my findings, I followed Lincoln and Guba’s (1985) framework of trustworthiness. Trustworthiness as Lincoln and Guba (1985) indicate, answers the question “how can an inquirer persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to, worth taking account of?” (p. 290). To answer this question,

internal validity, external validity, reliability, and objectivity of a study need to be addressed. The following table summarized the multiple strategies that I employed to enhance the trustworthiness in this study. (Table 2)

Results

In this section, I first summarize the major ethical issues and coping strategies experienced by professional technologists in design and training situations. I then analyze each issue in greater detail.

Findings related to research question 1

Research Question 1 was: “What are the major ethical issues associated with instructional technology that professionals have experienced in design and training situations?” Table 3 reports the major ethical issues identified by the study participants.

Table 2 Techniques to enhance trustworthiness (adapted from Lincoln & Guba, 1985)

Criterion	Explanations	Strategies I used to meet the criterion
Internal validity	Congruence between the findings and the reality	<i>Member checks</i> : a synthesis of each interview was prepared and sent to the participant for content verification <i>Peer examination</i> : two researchers independently coded the transcripts and reached inter-rater agreement at 92%. For disagreement, the researchers discussed and resolved differences. In addition, two faculty members not involved in the initial coding reviewed the analysis
External validity	Transferability of research findings to other situations	<i>Thick (detailed) description</i> of structures and processes revealed by the data articulated for adaptation (audit trials) <i>Multisites</i> : three departments with a university were selected to collect the data
Reliability	Replication of research findings	<i>The investigator's position</i> : Stated assumptions and theory behind the study. Purposive sampling <i>Audit trial</i> Detailed field notes, memos, and notes were maintained throughout the process
Objectivity	Conformability	<i>Data management and recording</i> Verbatim transcription of interviews Write-ups of process notes and interview summaries Accurate records of contacts, interviews, and other logistics

Table 3 Ethical issues experienced by professional technologists

Issues	Situations
Copyright	Interacting with faculty; seeking permission to use copyrighted materials; struggling to maintain the balance between copyright and fair use
Learner privacy	Being able to track the learner's online activities; facing the possibility of disclosing learner information, such as data and training scores, to an unauthorized population
Accessibility	Making online materials available to not only a majority of the end users, but, more importantly, also to a small number of users who have special needs, such as people with disabilities
Diversity	Respecting people from diverse cultures and backgrounds; designing content that is not offensive or exclusive
Conflicts of interest	Employing skills or using materials developed during work time to earn a second income
Professionalism/ Confidence	Striking a balance between an understanding of the educational process and the ability to properly apply technology for the purpose of enhancing instruction

Issue 1: Copyright

Out of 20 participants, 15 (75%) considered that digital copyright was the most frequently encountered ethical issue they had experienced. According to them, digital copyright became an ethical issue in three situations. The first situation involved having to communicate extensively with faculty about copyright clearance to design online materials, as can be seen in the observation by one study participant:

(Excerpt 1) Copyright is a big issue in our day-to-day working. We also have requests from faculty members to use things without getting copyright clearance. They might give us an image or they may want to be able to use a piece of text from the textbook. Explaining that we are restricted in what we can do is often a big topic of conversation. (Participant 5)

Apart from having to explain to faculty members who are sometimes ignorant of the importance of copyright clearance, professional technologists sometimes also find themselves having to actually obtain copyright clearance for materials to use in the work they are developing; this constitutes the second ethical situation involving digital copyright. As can be seen in Excerpt 2 below, sometimes when it was really difficult to obtain copyright clearance, the technologists found themselves having to design some of the materials themselves just to avoid infringing on other people's copyright.

(Excerpt 2) Our unit is heavily involved with making sure that anything we work with, a project has copyright clearance, and that we have the right to use [it]. If we can't get [a] copyright for something, we create things for ourselves to make sure that there are no copyright issues. We have that in all areas. (Participant 4)

The third copyright situation, as identified by the majority of the participants, was struggling to maintain a balance between copyright and fair use for educational purposes. A trainer who usually prepared seminar handouts and distributed them in free technology seminars at the university explained this situation in Excerpt 3:

(Excerpt 3) With training, I think the biggest ethical dilemma is whether information is copyrighted or not. For example, if you are teaching an intro class for Microsoft, and a lot of times because of time, instructors including myself, we end up just copying and pasting the how-to-step-by-step from the HELP menus or from other materials [...]. Is it OK to do this? I don't know. (Participant 8)

Given that the TEACH Act and the Digital Millennium Copyright Act of 1998 make copyright a law, a logical follow-up question becomes whether copyright is an ethical issue or a legal issue. The participants unanimously agreed that copyright was both a legal and an ethical issue. Comments from several participants highlighted the ethical dimensions of the copyright issue. One participant argued:

(Excerpt 4) Certainly it has legal ramifications, but I think that anything that has legal ramifications also has moral and ethical ramifications as well. (Participant 7)

Another participant noted:

(Excerpt 5) Copyright issue is an ethical issue...Obviously, somebody owns that information, and if you don't have permission to use it, I think you'll feel guilty for using it. So you are supposed to use it to the best of your knowledge. (Participant 8)

In general, the participants' comments indicate that the copyright issue has moral and ethical ramifications that reach beyond the legal dimension of it when it comes to the use of instructional technology. This finding enriched Mabry and O'Driscoll's (2003) and Kebbati's (2001) discussions on viewing copyright issues from its ethical perspectives.

Issue 2: Learner privacy

Thirteen participants (65%) cited the protection of learner privacy as an ethical concern. One participant described how a learner's private information can be easily misused in the application of instructional technology:

(Excerpt 6) There might be an online grade book that you could cut and paste into an Excel [spreadsheet] and publish it into a report and show it online. With Message board, you can take a snapshot of it and paste it to a PowerPoint presentation and take it to a conference, and never consider the fact that in that snapshot you also have student names and student data. (Participant 5)

This participant continued to explain:

(Excerpt 7) Technology gives people a lot of capabilities that they might never have had before. And also along with that, it might open up possible opportunities for unethical behaviors that they may not even consider being ethical. (Participant 5)

The participants also seemed to be keenly aware of the impact of technology on individual privacy. One participant discussed the ethical dilemma involved in tracking students' online activities, a dilemma that did not exist before the advent of instructional technology:

(Excerpt 8) I think that's an ethical dilemma that we did not have to talk about or discuss 10, 12 years ago because we did not have the technology. But now we have the technology and we can track students. So the question is, should we? Or if we do track students, how should we responsibly and ethically use that information? (Participant 7)

Apart from tracking students' online activities, disclosing trainees' private information to an unauthorized audience could also be an ethical issue. One trainer explained this dilemma:

(Excerpt 9) The ethical kind of dilemma that we had is: when should we allow a staff member's supervisor to actually see their scores? So that I think it is probably kind of an ethical dilemma that we face: When was it OK to do it? Did we need to give their permission? How far over the line were we stepping with the privacy? (Participant 10)

As indicated by the above comments, the possible violation of learner privacy seems to be a constant ethical concern faced by professional technologists in design and training situations. In previous literature, Mabry and O'Driscoll (2003) stated that some organizations can use new types of technological software to track a learner's online activities.

Issue 3: Accessibility

Of the 20 participants interviewed, 11 (55%) underscored the accessibility of online materials to people with special needs as a potential ethical concern. One participant explained the conflict between accessibility and innovation in designing instructional materials:

(Excerpt 10) Accessibility is very important. We try to make things accessible if it is presented online [...]. This is where we can get into a discussion on ethics. How far do we go down those lines? Does it really have to be accessible? Is that technology versus accessibility? We can really do something cool if we don't care about accessibility, but we have to make sure it is 100% accessible. (Participant 4)

Another participant noted that accessibility took on a greater ethical dimension with the increased cost of making products accessible:

(Excerpt 11) This is an ethical issue. We are trying to make sure that our Web site and Web-based tutorials are accessible, something that certainly cost us more work. It is kind of a non-discrimination thing for the people with disabilities. (Participant 9)

In addition, some participants stressed the importance of making materials accessible to a wider array of learners over the importance of using “cool” or fancy instructional design techniques. They underscored the ethical obligation of addressing the special needs of people with disabilities and emphasized that professional technologists working in institutions of higher education should take the lead in doing that. This finding echoed with the joint efforts of some researchers who advocate the importance of giving people with disabilities a broader range of employment and educational opportunities via innovative technology (Carnevale, 1999; Foley & Regan, 2002).

Issue 4: Diversity

Seven participants (35%) cited diversity as a major ethical issue in design and training. In design situations, the participants indicated that they made sure that the content that they designed and produced with instructional technology are not only understandable and relatable, but also respectable to a diverse audience. As noted by one participant:

(Excerpt 11) We also try to keep in mind the diversity issue, making sure that we are not ON PURPOSE [the participant’s emphasis] trying to alienate any other kind of group based on any kind of gender, sex, anything like that. Those types of things sometimes can cause some ethical issues because we have people that automatically just think this way. (Participant 4)

In training situations, a trainer realized that the ethical ramifications of the diversity issue involved not only sensitivity to people’s diverse backgrounds, but also the avoidance of discriminating against or stereotyping people in the use of technology:

(Excerpt 12) I think no matter what you are doing, you need to be tolerant with other people, especially with technology, not even with race or culture. A lot of people, I think, are discriminating against older people in the seminars and workshops. They might assume that if somebody is older, they don’t have as much experience. Or the opposite is if they are younger, there is a perception that they are very good with the computer [...] I think it is very easy for trainers to make an assumption about the people that are participating [...] because of their appearance. (Participant 8)

From Excerpts 11 and 12 above, we can see that diversity can easily become an ethical issue in both design and training situations in that online materials can be offensive and exclusive to people from different back-

grounds, and that trainers can stereotype learners based on such characteristics as race (Excerpt 11), age, and appearance (Excerpt 12).

While the participants in Excerpts 11 and 12 emphasized the importance of presenting a balanced representation of different kind of people, a couple of other participants addressed the issue of diversity as issues of freedom of speech and customer services involved in other people's materials. For example, one participant described the experience of an instructional designer working with a faculty member who purposely provided inflammatory online materials about race in order to shock his students:

(Excerpt 13) So the ethical issue that arose [for instructional designers] was: do you allow these materials to go out as they are or do you tell the faculty that they must change them? [...] There is freedom of speech. The university faculty have very strong opinions about that. But we have strong opinions about customer service... (Participant 1)

Interestingly, the previous literature addressed the diversity issue from an angle different from my finding. The literature indicated that technology-based materials can be inappropriately misused; thus, power gaps and inequality in society can be widened between those who have power and resources and those who have not (Han, 1994; Hatcher, 2002).

Issue 5: Conflicts of interest

Four participants (20%) in the study reported having experienced conflicts of interest in their jobs as well as the ethical decision making related to the conflicts. They indicated that, given the prevalence of online course design and technology training in many organizations, the services of people with technological expertise and access to computing resources are often sought by external organizations. For this reason, when utilizing either skills or training materials developed on their work time to earn a second income, professional technologists potentially helped others to compete with their employer for business; conflicts of interests, therefore, occur. One participant described one incident when training materials were used outside of the scope of the technology trainers' job:

(Excerpt 14) One time one of our trainers who developed the work for us was hired at another job. And I am pretty sure that she, eh, I don't have the fact because I didn't see it in action, but I am pretty sure that she took some of the materials that she had developed on $\times \times$ time and used it at another place. (Participant 8)

Another participant described the conflicts arising from the use of public resources for personal gain:

(Excerpt 15) The case that I've heard of is people using computing resources for things they are not supposed to do. Like somebody was... they gave a special account to someone so they can run a business or

something, using $\times \times$ resource. So they got fired for that. So that's a kind of violation of policies, but you really do have to behave ethically. That's kind of the expectation. (Participant 1).

Obviously, ethical implications arise when professional technologists take advantage of their work for personal gains. A review of the literature did not find an organizing theme regarding how professional technologists address conflicts of interest at their work.

Issue 6: Professionalism/confidence

The last major ethical issue identified by the participants of this study was related to possessing sufficient credentials to perform confidently and professionally in design and training situations. Three (15%) participants indicated that as technology skills become desirable in the workplace, people from various disciplines and backgrounds suddenly become designers and trainers and engage in designing online materials or delivering technology training. While these people certainly contribute to the dynamics and communication of the design and training experience, concerns arise as to whether they have the appropriate credentials to ensure the quality of the design and training for a specific target audience.

One participant stated that this lack of an appropriate educational background can affect the designer's professionalism:

(Excerpt 16) I think professionalism and confidence is a big ethical issue that we face in $\times \times$. A lot of times, a lot of the trainers were just specialists in a particular topic of area. They might know the subject area very well, but they might not know how to teach [...] So they wouldn't be as professional in front of the classroom because they don't have that teaching experience. (Participant 8)

This participant continued to point out that a lack of technological background, not just an educational background, can also affect professionalism.

I don't get as much time to use the software package as people who do the thing day to day. So, for example, I am new to teaching Photoshop, I use that on a personal basis...I know the topic, but I don't know it like a graphic designer who does that everyday. So sometimes I think I will be put in the spot where we are not as competent as we could be. (Participant 8)

Another participant further explained why being professional is an ethical issue:

(Excerpt 17) I think it is an ethical issue because you have a choice. You know what is appropriate, and you know you have those values. I think ethics and values go in hand in hand. And I think you have that choice to be professional or not. (Participant 9)

From what the participants described above, professional technologists believe that one usually performs best when one has a combination of technological skills and an adult learning background and/or experience. Without such a combination, professional technologists cannot perform confidently and professionally in their work activities. Again, the ethical ramifications of professionalism and confidence are under-presented in the literature in the field.

Findings related to research question 2

Research Question 2 was: “How did professional technologists handle the identified ethical issues in Research Question 1?” Such an area is particularly under-presented in the literature. Table 4 reports the overall coping strategies adopted by the study participants based on the frequency of adoption.

Strategy 1: Team communication

As can be seen in Table 4, communicating with team members was considered by the participants to be the most frequently used coping strategy to address ethical situations. The participants indicated that professional technologists usually work in a team environment where they can collaborate, share information, and solve various issues in a timely manner. As one participant put it:

(Excerpt 18) It is almost entirely a team environment in the way that our work environment is set up. I work in a cubicle space with four other people—instructional technologists—so we can all collaborate on problems... In fact, on our own, we have hardly any work individually.
(Participant 1)

Table 4 Coping strategies adopted by professional technologists

Strategies	Description
Team communication	Setting up a team environment to facilitate collaboration, information sharing, and the discussion of ethical issues
Laws and Policies	Referencing laws and policies to ensure that rules and guidelines are followed; identifying the TEACH Act as the most frequently referred guideline
Management Consultation	Involving effective communication between managers and practitioners, the expertise of the managers, and the chain of command in design and training
Professional Integrity	Having a sense of right or wrong helps to handle issues with ethical implications appropriately
Technical Solutions	Using technical methods to avoid violating ethical issues, such as limiting file sharing space to avoid checking a learner’s private files, making materials password protected, and creating a second message board for irrelevant discussion

One participant described how such communication was taking place in a Web-based training team:

(Excerpt 19) Where there is anything that I feel, not necessarily unsure, but if I think that something could be ethical, anything political, anything that might fly back to the head and face, I always bring in the Web-based training team. (Participant 10)

As indicated in these comments, the set up of the work environment facilitated the participants' communications flow of ethical situations.

Strategy 2: Laws and policies

The second most frequently adopted coping strategy was the reliance on laws and policies. When asked what laws and policies are related to the use of learning technology, a total of 17 participants (85%) mentioned that the TEACH Act was the most important regulation in guiding their ethical decisions in educational settings. Two participants explained the situations as follows:

(Excerpt 20) I have a folder that I can look up. So this is a TEACH Act checklist. I would usually go to this first. For example, here is a case that all instructors might want to use a certain piece of technology or a certain piece of text. (Participant 5)

(Excerpt 21) What I usually do is: I tell the faculty that they are not following the letter of the law. And I tell them what the TEACH Act is, and what they are doing is breaking the TEACH Act. (Participant 18)

However, although the TEACH Act has become known and useful, the participants pointed out that it was not an all-inclusive guideline that could solve all ethical problems:

(Excerpt 22) At times, I think it is a little vague. The TEACH Act doesn't say too much about video...There are no rules about how much video I can use without getting permission. So I would like more specific information, but a lot of instances are just gray. It is kind of what [sic] specific situation and you kind of go with that way. (Participant 4)

As indicated in the comments, although the TEACH ACT was used as the guideline, the participants still had to take into account the specific decisions based on the specific situations.

Strategy 3: Management consultation

When the participants were not sure of the laws and policies, as indicated in Excerpt 22 above, one possibility was for them to consult a higher authority. Management consultation, therefore, was the third coping strategy that practitioners often used. According to the participants, there exist several reasons why management consultation becomes an important coping strategy

to handle ethical issues. One participant explained her manager's involvement with specific design projects as the reason for seeking management's guidance in ethically problematic situations:

(Excerpt 23) I think our management is able to do it because they are very involved in what we do. They know about the courses we are working on...so it is very easy for them to see something that might be an issue. (Participant 5)

Another participant cited the manager's in-depth training and research as the reason for management consultation as a strategy in addressing ethical concerns:

(Excerpt 24) We have a couple of people that are very well-versed in different areas, for example, the TEACH Act and the Digital Millennium Copyright Act. They have done extensive research about it. They've gone to conferences. They contact experts to see what we are legally allowed to do or not to do. So you often go to those people and you say, here is a situation, what's your recommendation? (Participant 5)

Another participant cited his lack of power in decision making due to his position in the chain of command as the reason for seeking management consultation in ethical dilemmas.

(Excerpt 25) ...because often people like me, instructional technologists and instructional designers, are in the middle. We sit between the faculty members' content and the student. So in cases where these two areas can run together, that's where those conflicts of interests and ethical dilemmas can arise. So often we take ourselves out of it, and we go to a higher authority. (Participant 1)

From the comments above, management consultation becomes an important strategy for reasons ranging from the effective communication between managers and practitioners, the expertise of the managers, and the chain of command in design and training.

Strategy 4: Professional integrity

As revealed in the findings related to Research Question One, professional technologists were often exposed to various situations that had ethical connotations because of the nature of their job. Because of the sensitive situations that professional technologists faced, a strong sense of professional integrity usually came into place when they handled ethical issues. One participant explained:

(Excerpt 26) There are many times where technology means that you have to let someone into the class that otherwise wouldn't be there. For example, when a faculty member is teaching a class using course management system (CMS) ××, they very often add me to their class so

that I can see and help them if they have problems...That certainly is an area where professional integrity needs to come into play. Because even though I have the ability to bring up students' grades and students' records, I need to have the integrity to know whether that is appropriate. (Participant 7)

Given the fact that the professional technologists often are exposed to many possible ethical situations due to the nature of their jobs, one participant described that a code of ethics may be able to restrict the misuse of access given to them:

(Excerpt 27) There just has to be a code of ethics. Or people like me, the more access you give us to the instructional systems, the technology behind the academics, you know, the instructional environment, the more ethically we have to behave. (Participant 1)

However, when further asked whether they had a code of ethics in the field, all of the participants unanimously said that they were unaware of any.

Strategy 5: Technical solutions

Interestingly, a few participants in this study also indicated that they sometimes used technical solutions to solve ethical situations. One participant described a unique situation where a CMS was used by students to distribute copyrighted movies. The solution, according to the participant, was technical:

(Excerpt 28) We decided to limit how much space they are allowed to use...We can find some technological solutions to limit their file space, so they can't upload too much...That also takes out of the business of invading the privacy of students. (Participant 1)

Similarly, one participant pointed out that the most obvious technological solution to protect privacy and confidential information is to have password protection. One participant who had access to student records and financial data for training purposes said:

(Excerpt 29) You have to make sure that you have passwords on the system to protect your computer, and that you change the password in such a way that nobody can hack into the system and pull out your information. (Participant 20)

In general, the participants indicated that they sometimes had to go around possible ethical ramifications by using technological solutions. A review of the existing literature did not find similar findings.

Conclusion

“Ethics prevails in all of our activities,” as one of the participants declared with regard to the importance of addressing ethical issues of instructional

technology in design and training situations. In summary, six major ethical issues, in order of their frequency, were identified in this study: copyright, learner privacy, accessibility, diversity, conflicts of interest, and professionalism/confidence.

Among these ethical issues, copyright, learner privacy, and accessibility have often been discussed in the literature with a focus on their legal connotations. In this study, however, I found that in design and training settings, these issues develop ethical ramifications beyond their usual legal consequences. I also identified from the results three ethical issues that have not been discussed extensively in the literature: diversity, conflicts of interest, and professionalism/confidence. First, the identification of diversity as an ethical issue enriches the current literature. Previously, researchers proposed that the introduction of instructional technology can widen or close the inequality gap among different people and groups (Han, 1994; Hatcher, 2002). The results of this study suggest that diversity is an ethical issue in that professional technologists, who have a wide range of technical skills, can create learning materials that exclude people from diverse backgrounds and stereotype learners. Conflict of interest is another ethical issue that has not received adequate attention in the literature. The present results enrich Marby and O'Driscoll's (2003) discussions of how professional technologists use their knowledge and output outside of the scope of their jobs as well as identifying a few sources of conflicts of interest: taking learning materials developed on work time outside of the scope of work, taking advantage of the current position to earn a second income in other organizations, and using public resources for personal gain. The last ethical issue that is underrepresented in the literature is professional technologists' professionalism and confidence in performing their work. The results of this study suggested that it is unethical if professional technologists produce work of poor quality due to the lack of a balanced knowledge and skill sets that cover both the educational process and the application of technology.

This present results did not support several ethical issues that have been addressed in the literature. One issue is related to power and inequality. For example, some researchers (Han, 1994; Hatcher, 2002) have noted that technology-based, career-enhancing activities can be accessed only by those who have power and resources. The issue of unequal access to technology-based, career-enhancing activities was not identified by the participants in this study as a significant one, possibly due to the strategic goals of and the efforts by the three departments to enhance the connections between education and the public goods. Another issue that was not supported is the misuse of instructional technology. For example, other researchers (Bassi et al., 1997; Piskurich & Sanders, 1998) have claimed that, if professional technologists overuse available technologies, they tend to ignore customers' learning needs and replace existing learning methodologies. This finding was not supported by the present study probably because, as indicated by the comments of the three department directors, each online course usually had a designated instructional designer who led a group of professional technologists to work

closely with the faculty. Such a process had ensured that students' learning needs, the instructor's needs, and technology needs were analyzed on a continuous basis, and the misuse of instructional technology was thus minimized.

In addition to identifying ethical issues, the results in this study also extend the current literature through identifying some coping strategies adopted by professional technologists. Currently, how professional technologists deal with ethical issues in their work activities is still underspecified in the literature. One of the reasons may be that the field of creating learning products involving instructional technology is still relatively new and has not become a well-defined area of research (Mabry & O'Driscoll, 2003). In this study, I found that the majority of the research participants relied on team communication, laws and policies, management consultation, professional integrity, and technical solutions.

As professional technologists face both possibilities and problems in the use of instructional technology, the identification of ethical issues is important to help establish effective guidelines for practice. Although the creation of an ethical code has its intrinsic limitations and cannot solve all the problems, the existence of an ethical code and the professionals who use such a code will insert an ethical voice into the discourse of organizations (Finn, 1952; Lee, 2003).

Ultimately, the true value of an ethical voice is to be mindful of one's responsibility to society beyond those of legal and economic responsibility (Clark, 1993; Hatcher, 2002). In the field of communications and technology, Campbell et al. (2005) argue that "instructional designers are not journeymen workers directed by management but act in purposeful, value-based ways with ethical knowledge in social relationships and contexts that have *consequences in and for action*" (p. 242). Schwier (2005) echoed that instructional designers should focus clearly on *why* they practice instead of *how* they practice. To this end, instructional designers act "as change agents who challenge and shape the institutional and societal discourse about the purposes and forms of learning" (p. 2). With this understanding, our research and practice should be sensitive to not only who we are, but what we do, and why we do as professionals (Schwier, 2005).

Implications

Enhancing research on the ethics of instructional technology

The results of this study lay the groundwork for future study. Future research can continue to identify the ethical issues and coping strategies that help yield a clearer picture of ethical issues that professional technologists have experienced. Such information will not only enhance our understanding of the ethical issues in the use of instructional technology in design and training situations, but also help management provide possible strategies to handle these issues. Future studies can also be extended to investigate the nature of

instructional technology, its maturity, and the assumptions that drive the technology by comparing our work with that of related professions (Schwier, 2005; Waters & Gibbons, 2004). Moreover, future studies can use different methodologies to investigate ethical issues and coping strategies such as quantitative methods or responses to hypothetical cases. Finally, future studies can explore the role of organizations and management in addressing ethical challenges posed to professional technologists.

Strengthening the role of management in constructing an ethical environment

As the results revealed, the majority of the participants stated that they found it difficult to differentiate between copyright and fair use guidelines in educational settings. As a result, it is advisable that management not only covers copyright laws or guidelines, but also includes materials that apply these laws and guidelines to a collection of previous ethical situations. Another recommendation for management is to develop and implement a system for the reporting of ethical issues that have been encountered by professional technologists. Information from the reporting system can provide excellent cases that could be used to develop in-depth and skills-oriented seminars. Such information could also be used in employee orientations to socialize new professional technologists into the organization. Finally, as the findings in this study indicated, professional technologists turned to their team members and managers frequently for checks and balances when they were faced with ethical issues. Consequently, management should foster the two-way free flow of communication, which not only facilitates a smooth workflow, but also encourages informal sharing of the best practices of handling ethical situations.

Heightening technologists' awareness of the role of ethics in performance improvement

The present results also support several recommendations for professional technologists. In relation to ethical issues, one of the first steps that a professional technologist can take is to locate relevant seminars, resources, and experts in their organizations. They can also network with other practitioners in the field to share experiences so that their managers are not their sole source of reference. Ultimately, the professional technologists' job should not only be limited to incorporating technology and instructional models into their complex array of responsibilities, but should also be extended to the awareness of the values they hold and the ability to use these values to inform practice. After all, similar to other professions, applications of instructional technology is not about a technical act; it is a process that includes moral and political consequences as a result of our choices for action (Schwier, 2005). Understanding the ethical implications of our choices will give us a grounding as we practice our craft.

Acknowledgements Author would like to thank Dr. Steven Ross and the three anonymous reviewers for their insightful feedback.

Appendix

Appendix A: Interview guide

1. Please tell me something about your work activities in learning technologies. For example (the following questions are for probing purposes):
 - (a) What are your current major responsibilities associated with learning technologies? Who are your clients?
 - (b) Do you or have you had any additional responsibilities in working in learning technologies?
2. Do you usually work in a team environment? Do you usually work independently? Or in both situations?
3. Without naming names, could you give me a specific example of an ethical issue or an ethical dilemma that is the most salient to you or one that you encounter the most in your job?
 - (a) What was the situation?
 - (b) What did you do to handle the issue or dilemma? Why?
 - (c) What was the result of your action (or lack of action)? Do you believe the result is positive? Negative? Why? Were there any policy changes or job redesigns that resulted from this ethical issue or dilemma? Why or why not?
 - (d) How did you feel about the incident? Why did you feel that way?
4. Are there other ethical issues that you have encountered in your work activity of implementing learning technologies?
5. Without naming names, can you think of any situation involving your work in learning technologies in which you and a colleague disagreed on how to handle the situation ethically?
 - (a) What was the situation?
 - (b) How did he/she handle the issue or the dilemma? Do you think he/she handled it properly? Why or why not?
 - (c) How did you arrive at the problem, and how did you resolve it?
6. In the context of learning technology, how do you decide whether an issue has ethical implications? Why?
7. How do you decide what to do when faced with an issue that has ethical implications? What do you rely on to try to solve ethical issues?

(Questions serve as probes or clarification)

- (a) Do you mostly rely on personal values? Law and regulations? Policies set by the university? Professional ethical standards? Or anything else? Why?
- (b) Are there any policies regarding ethical issues that you know of for practitioners working in learning technology to rely on? Could you explain?

References

- AECT Code of Professional Ethics. Retrieved March 2, 2006, from <http://www.aect.org/About/Ethics.htm>.
- Aragon, S. R., & Hatcher, T. (2001). Ethics and integrity in HRD: Case studies in research and practice [Special issue]. *Advances in Developing Human Resources*, 3(1), 1–1–2.
- Bassi, L., Buchanan, L., & Cheney, S. (1997). *Trends that affect learning and performance improvement: A report on the members of the ASTD benchmarking forum*. Alexandria, VA: The American Society for Training and Development.
- Brookfield, S. (1988). Ethical dilemmas in evaluating Adult education programs. In R. G. Brockett (Ed.), *Ethical issues in adult education* (pp. 88–102). New York, NY: Teachers College Press.
- Campbell, K., Schwier, R. A., & Kenny, R. F. (2005). Agency of the instructional designer: Moral coherence and transformative social practice. *Australasian Journal of Educational Technology*, 21(2), 242–262.
- Carnevale, D. (1999). Colleges strive to give disabled students access to online courses. *The Chronicle of Higher Education*. Retrieved February 25, 2006 from <http://chronicle.com/free/v46/10a06901.htm>.
- Clark, C. R. (1993). Social responsibility ethics: Doing right, doing good, doing well. *Ethics & Behavior*, 3, 303–327.
- Finn, J. D. (1952). Professionalizing the audio-visual field. *Audio-visual Communication Review* 1(1), 6–18.
- Foley, A., & Regan, B. (2002). Web design for accessibility: Policies and practice. *AACE Journal*, 10(1), 62–80.
- French, D., & Valdes, L. (2002). Electronic accessibility: United States and international perspectives. *Educational Technology Review*, 10(1), 1–13. Retrieved February 24, 2006 from <http://www.aace.org/pubs/etr/issue2/French-a.cfm>.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine De Gruyter.
- Gordon, W., & Sork, T. J. (2001). Ethical issues and codes of ethics: Views of adult education practitioners in Canada and the United States. *Adult Education Quarterly*, 11(2), 179–185.
- Han, I. (1994). Caught between inescapable ethics and unavoidable distance learning technology: The grammar of discovering knowledge. Unpublished doctoral dissertation, The Union Institute.
- Hatcher, T. (2002). *Ethics and HRD: A new approach to leading responsible organizations*. Cambridge, MA: Perseus.
- Inouye, D. K., Merrill, P. F., & Swan, R. H. (2005). Help: Toward a new ethics-centered paradigm for instructional design and technology. *IDT Record*. Retrieved February 2, 2006 from <http://www.indiana.edu/~idt/articles/documents/ethics.htm>.
- Kebbati, K. (2001). Dealing with ethical issues in technology use in a high school classroom. Unpublished doctoral dissertation, Kansas State University.
- Lan, J., & Dagley, D. (1999). Teaching via the Internet: A brief review of copyright law and legal issues. *AACE Journal*, 1(11), 25–30.
- Lee, M. (2003). On codes of ethics, the individual and performance. *Performance Improvement Quarterly*, 16(2), 72–89.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

- Mabry, C. K., & O'Driscoll, T. (2003). Lessons from adult education: Identifying and exploring emerging ethical issues in technologically enhanced performance. *Performance Improvement Quarterly*, 16(4), 78–93.
- Mason, R. O. (1995). Ethics to information technology issues. *Association for Computing Machinery: Communications of the ACM*, 38, 55–57.
- McDonald, K. S., & Wood, G. S. (1993). Surveying adult education practitioners about ethical issues. *Adult Education Quarterly*, 43, 243–257.
- Nichols, R. G. (2002). Meeting our ethical obligations in educational technology. *TechTrends*, 46(1), 52–53.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Piskurich, G. M., & Sanders, E. S. (1998). *ASTD models for learning technologies: Roles, competencies, and outputs*. Alexandria, VA: ASTD.
- Pourciau, L. J. (1999). *Ethics and electronic information in the twenty-first century*. West Lafayette, Indiana: Purdue University.
- Rossett, A. (1992). Analysis of human performance problems. In H. D. Stolovitch, & E. J. Keeps (Eds.), *Handbook of human performance technology* (pp. 97–113). San Francisco: Jossey-Bass Publishers.
- Rossett, A., & Arwady, J. W. (1987). *Training needs assessment*. Englewood Cliffs, New Jersey: Educational Technology Publications.
- Rothwell, W., & Kazanas, H. (2004). *Mastering the instructional design process: A systematic approach* (3rd ed.). San Francisco: Jossey-Bass/Pfeiffer.
- Saettler, P. (1990). *The evaluation of American education technology*. Englewood, CO: Libraries Unlimited.
- Schwier, R. A. (2005). A grand purpose for ID? *IDT Record* (AECT 2004 IDT Futures Group Presentations). Retrieved January 19, 2006 from http://www.indiana.edu/~idt/shortpapers/documents/IDTF_Schwier.pdf.
- Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York: Teachers College Press.
- Smith, M. (2001). *Managing the Internet controversy*. New York: Neal-Schuman Publishers.
- Spradley, J. P. (1979). *The ethnographic interview*. Fort Worth: Harcourt Brace Jovanovich College.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Newbury Park, CA: Sage.
- Swanson, R. A. (1999). Foundations of performance improvement and implications for practice. *Advances in Developing Human Resources*, 1, 1–25.
- Taylor, M. J., & Moynihan, E. (2002). Analyzing IT ethics. *Systems Research and Behavioral Science*, 19, 49–60.
- The American Library Association (ALA). Retrieved April 28, 2006, from http://www.ala.org/Template.cfm?Section=Distance_Education_and_the_TEACH_Act&Template=/Content-Management/ContentDisplay.cfm&ContentID=25939.
- UCLA Online Institute. Retrieved June 20, 2006, from <http://www.gseis.ucla.edu/iclp/dmca1.htm>.
- Van Manen, M. (1990). *Researching lived experience*. Albany: State University of New York Press.
- Visscher-Voerman, I., & Gustafson, K. L. (2004). Paradigms in the theory and practice of education and training design. *Educational Technology Research and Development*, 52(2), 69–89.
- Waddell, C., Thomason, K. (1998). Is your site ADA-compliant...or a lawsuit-in-waiting? Retrieved from the World Wide Web March 15, 2006.
- Waters, S. H., & Gibbons, A. S. (2004). Design languages, notation systems, and instructional technology: A case study. *Educational Technology Research and Development*, 52(2), 57–68.
- Yeaman, A. R. (2004). Professional ethics: The misuse of technology. *TechTrends*, 48(5), 16–18.
- Yin, R. K. (1994). *Case study research: Design and methods (applied social research methods)* (vol. 5). Beverly Hills, CA: Sage.

Hong Lin, Ph.D., is Manager of Faculty Development in the Institute for Teaching and Learning Excellence at Oklahoma State University.