To many people, technology is simply a fact of life - it affects virtually every aspect of
our daily living. Thus, the increasing use of technology in counseling is viewed as unavoidable and even desirable. To others, technology has little place in counseling beyond the traditional uses of computers for assessment and career counseling, as described by Walz (1997). The increasing availability of inexpensive computer applications and networks is a major force promoting the infusion of technology in our field (Sampson, Kolodinsky, & Greeno, 1997), yet the extent to which counselors and counselor educators use these resources is largely unknown.

If counselors find uses for technology in their work, may it be assumed that they will learn technology skills in pre-service preparation? To what extent do counselor educators use technology in their classrooms? In a recent survey of members of the Association for Assessment in Counseling, participants indicated that they used the Internet for assessment and for the purpose of searching for data (Lundberg & Cobitz, 1999). Little research is available concerning how counselor educators use technology and how prepared they feel for the technological revolution; however, it appears that technology competence is not a universal priority. For example, Hackney (1990), in Changing Contexts for Counselor Preparation in the 1990s, devotes no attention to the impact of technological change. At the same time, educators have realized that students have different learning modalities and can benefit from a variety of teaching approaches that utilize technological advances (Hayes, 1999).

The benefits of technology are numerous for both students and educators (Hayes, 1999; Morrell, 1992), and it is educators who provide the impetus as well as the medium for much technological literacy, through course assignments and instructional methods. It is timely to ask the question, how competent are counselor educators in the use of technology? The answer to this question may establish training needs of counselor educators and promote research on how best to meet these needs. We expect our students to be technologically literate, but how competent are counselor educators in the technology skills they require their students to possess?

**METHODOLOGY**

To answer the question posed above, we created a survey, based on the 12 technology competencies for students identified by the Technology Interest Network of the Association for Counselor Education and Supervision (ACES; http://www.auburn.edu/ccp/acestin). The survey was published in the Spring, 1999, issue of the ACES Spectrum, and asked ACES members to self-assess their technology competence. The availability of the survey was also announced to members of the CESNET listserv, which is used by counselors, students, counselor educators, and supervisors. Each competency was stated and readers were asked to respond using a Likert-type scale with the following points: 1-no competence in this area; 2-a little competence; 3-about average competence; 4- above average competence; and 5-very competent. Surveys could be completed using a web-based form on-line, sent through e-mail, or the hard copy filled out and returned by "snail-mail." An opportunity
was provided at the end of the survey for open-ended comments concerning technology competence in counselor education and supervision.

RESPONDENTS

Ninety-two individuals responded to the survey, including 62 counselor educators, 22 students, 13 professional counselors, and 7 supervisors. Among the counselor educators, 14 checked that they were assistant professors, 13 associate professors, and 23 full professors. These individuals had a combined total of 850 years of experience, with an average of 13.9 years (s.d. = 9.6). The average years of experience by rank were as follows: assistant professors, 3.86 years (s.d. = 1.41), associate professors, 9.85 years (s.d. = 4.76), full professors, 22.5 years (s.d. = 7.07). Six of the students were entry-level and 19 doctoral-level. The overall response rate to the survey, based on 2,492 ACES members, was 4%.

RESULTS

The means and standard deviations for all respondents for each of the 12 competencies are included in Table 1. For each item except competency number two, responses ranged from 1 to 5. For competency two, responses ranged from 2 to 5. The mean competency ratings ranged from 2.95 to 4.55. The variability, as indicated by the standard deviations, ranged from .82 to 1.29. The table also shows the rank order of each competency based on the mean scores. The highest ranks, indicating the highest level of competency, were for using e-mail (1), accessing listservs (2), and using audio-visual equipment (3). These were also the three competencies for which the least amount of variability in responses occurred, as noted by a review of the standard deviations for each competency. The lowest competencies were reported for using computerized testing (10), knowledge of webcounseling (11), and using computerized statistical packages (12). There was a large amount of variability in responses to these items compared to the top rated competencies, as noted in the table.

MANOVAs for each competency computed between educators and students revealed three significant differences. Counselor educators self-rated as more competent than students for competencies 9 and 10 (F = 7.09, df=35, p = .01 and F = 8.21, df=35, P = .01, respectively), knowledge of ethical codes relating to counseling on the internet and knowledge of the strengths and weaknesses of counseling on the internet. Students rated themselves as higher on ability to use audiovisual equipment (F = 4.84, df=35, p = .035). Eighty-eight of the 92 respondents indicated that they "actively seek opportunities to develop my technology skills" while two indicated that they "avoid opportunities to develop my technology skills."

Thirty respondents provided comments related to the survey or counselor education technology competencies. Only three individuals reported that technology competence was infused into the curriculum in their counselor education training program, and that a
high level of competence was expected of students throughout their enrollment in the program. Concern for lack of access to computers, especially by adult, commuter students, was noted as a barrier to instructor use of the web for dissemination of syllabi and other course materials. Several individuals noted that they were unaware of the competency levels of other persons, thus rating themselves in relation to other counselor educators was a difficult and possibly inaccurate process.

**RECOMMENDED COURSE OF ACTION**

Strategies for increasing technology competence among counselor educators, students, and counseling professionals seem to be a necessity as we enter the 21st century. The results of our survey, though limited in scope, provide baseline data to help determine the present state of the field and suggest current and future directions for training and research. More research on counselor educator technology competence is needed to provide a basis for designing continuing education programs to increase technology skills. In addition, specific technology competencies for counselor educators that may be over and above those needed by counseling students have not yet been identified, and competencies for practicing professional counselors remain undetermined. Continued research as well as dialog concerning technology competencies in counseling is needed, as well as discussion concerning ways to infuse technology competence into counseling and counselor training. As part of this discussion, the relative importance of various competencies needs to be considered, as well as the desirability, feasibility, or necessity of being "very competent" in all areas.

**SUMMARY AND CONCLUSION**

As the impetus for advanced technology continues, counselor training programs are increasingly required to adapt. Results of the ACES survey on technology competencies for counselor educators and students indicate that counselor educators and counseling students lack a uniformly high level of technology competence. Given the likely possibility that primarily "technology-interested" individuals completed the survey, the results probably overestimate, by an unknown amount, the actual levels of technology competence among counselor educators and students. Further research is needed to determine the relative importance of each of the technology competencies in the various settings in which counselors work. With this information, it will also be necessary to determine the extent to which the competencies are currently infused into counselor preparation programs as well as strategies for promoting technology training. It will be important to address both pre- and in-service preparation that will enhance needed technology competence in our field.

**REFERENCES**

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<tr>
<th>Technology Competence of Counselor Educators</th>
<th>ACES Technology Competencies</th>
<th>mean</th>
<th>s.d.</th>
<th>rank</th>
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</thead>
<tbody>
<tr>
<td>1. Be able to use productivity software to develop web pages, presentations, letters, reports, etc.</td>
<td>1. Be able to use productivity software to develop web pages, presentations, letters, reports, etc.</td>
<td>3.32</td>
<td>1.18</td>
<td>9</td>
</tr>
<tr>
<td>2. Be able to use such audiovisual equipment as video recorders, audio recorders, projection equipment, and playback units.</td>
<td>2. Be able to use such audiovisual equipment as video recorders, audio recorders, projection equipment, and playback units.</td>
<td>4.12</td>
<td>0.91</td>
<td>3</td>
</tr>
<tr>
<td>3. Be able to subscribe, participate in, and sign off</td>
<td>3. Be able to subscribe, participate in, and sign off</td>
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</table>
4.16 0.96 2  
counseling-related listservs.
4. Be able to access and use  
counseling-related CD-ROM databases.
3.45 1.29 7
5. Be able to use e-mail.
4.55 0.82 1  
6. Be able to use computerized statistical packages.
2.95 1.19 12
7. Be able to use computerized testing,  
diagnostic, and career
3.31 1.29 10

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