

Incorporating Technology: A Comparison of Preparation Program Training and Student Affairs Practitioners' Expectations

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This study examines the degree to which technology is being incorporated into graduate level student affairs preparation programs and how this mirrors the use of technology by student affairs practitioners. All student affairs preparation programs in the U.S. were invited to participate, along with a similar number of senior student affairs officers. Areas of convergence and divergence are reported and implications for training programs are discussed.

Computers and other technological advances have permeated most facets of American society. In 1991, Sanders noted that electronic mail (e-mail), and information technology in general, had begun to change the way people conduct both their professional and personal business. Lewis (1994) observed that e-mail had, for the most part, supplanted the telephone, and that on-line services such as America On-line, Comuserve, and others were quickly changing the way people access information. America's colleges are no exception to this phenomenon.

As early as 1989, the significant positive impact electronic communications were having upon the educational culture of the Curry School at the University of Virginia was gaining notice (Bull, 1989). Similarly, the president of Duke University, in an interview with Computerworld magazine, noted the benefits being reaped from Duke's implementation of a campus-wide electronic messaging system (Anthes, 1994).

On today's college campuses, professionals in the student affairs field,

including residence life, student activities, student unions, admissions, and registrars, "are becoming increasingly proficient with technology" through the use of word processors, spreadsheets, databases, planning and decision-making packages, and other technological tools (Mills, 1990, p. 156). Additionally, student affairs professionals are making increased use of internet-based resources such as e-mail, the world wide web, gopher servers, and the like. Community development, as one of the aims of student development, can also be aided through the use of technology. Williams (1996) demonstrated that an electronic discussion list could be used to effect community development among the general undergraduate population. The current literature offers little information to guide the application of technology to student affairs work, although the trend seems to be toward an increasingly larger role as reflected by the increases in information/ technology staff, budget expenditures on technology hardware and software, and changes in communication systems.

The current literature also offers little information about the incorporation of technology in student affairs preparation programs. The majority of published works on technology within higher education are either specific to educational technology degree programs or to the delivery of traditional coursework through distance education formats. Publications dealing with the inclusion of technology in traditional classrooms are few. Some studies have explored, in anecdotal fashion, how to incorporate e-mail into a single course (Mabrito, 1995; Nantz & Drexel 1995; Poling, 1994; Robinson, 1994; Sumrall & Sumrall, 1995; Wasson, 1990), but no study to date has identified how to infuse technology within an academic program as a whole, either within or outside student affairs.

The college classroom has been traditionally limited to the chalkboard and overhead, and most programs struggle to deliver the traditional knowledge base of the field within their allotted credit hours. Only one section of the Council for the Advancement of Standards (CAS, 1997) specifically addresses technology within masters level student affairs administration preparation programs. There are no statements from the professional organizations in the field or from the premier training programs regarding what technological competencies are basic to the field, how technology might best be incorporated into a training program, or how technology is affecting the knowledge base. It is unclear how professional preparation program faculty are responding to the CAS guideline that calls "for the inclusion of a computer literacy and computer application component in all student affairs graduate preparation programs" (Baier, 1994, p. 24).

Specific Objectives

The purpose of this study was threefold. First, the authors examined the way in which technology is being incorporated into the instruction offered in graduate level student affairs preparation programs across the country, both as pedagogical techniques and as part of the knowledge base of the curriculum. Second, the study queried senior student affairs officers as to their expectations for entry-level professionals graduating from student affairs preparation programs and their own personal use of technology. Third, by comparing the

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responses to both of these inquiries, the differences between the knowledge being imparted by preparation programs and the expectations of upper-level student affairs officers are identified and explored.

Method

Sample

Master's level student affairs preparation programs were identified using the Hollis and Wantz Directory of Counselor Preparation Programs (1993) and the ACPA Commission XII Directory of Graduate Preparation Programs in Student Affairs (1994). Proprietary schools or medical schools that emerged as part of the random selection were excluded from the sampling process, since the nature of the student services at such institutions can be significantly different in structure and purpose than at more traditional institutions, and because these schools are much less frequently the sources of employment for student affairs preparation program graduates. The participant sample consisted of a randomly selected group of 150 senior student affairs officers drawn from the 14th edition of the Higher Education Directory (Rodenhouse, 1996). In total, 128 student affairs preparation programs and 149 senior student affairs officers were included in the study.

Instrumentation and Analysis

Two survey instruments were constructed by the authors. The Graduate Preparation Programs Use of Technology Survey (Program Survey) was designed to collect data from preparation programs including: Demographic data (credit hours, accreditation, number of graduates per year), information related to the types of computers used, whether students are required to learn various types of computer technologies and resources, how the program teaches about technology, and whether technology is used in the teaching process itself. Additionally, respondents were asked to indicate whether a specific goal statement exists regarding the incorporation of technology into the curriculum and to give a brief description of how the program teaches about technology-based resources (e-mail, gopher sites, world wide web, listservs, etc.).

The Student Affairs Practitioners Use of Technology Survey (Practitioner Survey) was designed to collect data from senior student affairs officers including: Demographic data (position held by respondent, years of experience, and institutional characteristics), information as to what types of computer resources are available, how often and in what ways computer resources are used by the professional staff, and whether internet-based resources are being utilized. Lastly, respondents were asked to rate the importance of 16 computer skills for entry-level professionals.

Both surveys were-pilot tested on a representative group of student affairs practitioners and preparation program faculty. Comments and feedback were used to refine the instrument for greater clarity. Since the data collected in this survey were nominal, the analysis consisted of frequency distributions for each item.

Procedures

Cover letters and the Program Surveys were mailed to 128 chairpersons of

student affairs preparation programs. Cover letters and the Practitioner Surveys were mailed to 149 senior student affairs officers at the selected institutions. The letter requested that the survey be completed by the individual most familiar with the various uses of technology across the entire student affairs division. A second mailing was made approximately two weeks after the initial mailing to the chairpersons and officers who had not responded. In total, usable surveys were received from 417o (n = 52) of the preparation programs and 497o (n = 73) of the student affairs officers.

Results

Student Affairs Preparation Programs Survey

Fifty-one of the 52 programs (98.1%) surveyed offered master's degrees, 15 (28.8%) offered Ph.D. degrees, and 9 (17.3%) offered the Ed.D. The average annual graduation rate was 14.7 master's degrees and 3.2 Ph.D./ Ed.D. degrees. Sixteen programs (30.87o) indicated that they held accreditation from CACREP; another seven (13.5,7o) were seeking CACREP accreditation. Twenty-nine programs (55.87o) reported that they follow the CAS Standards (master's programs), and three (5.87o) reported NCATE accreditation.

Twenty-three programs (44.27o) indicated that the institution provided IBM (or PC compatible) systems exclusively, 14 (26.97o) indicated Apple exclusively, and 15 (28.87o) reported availability of both types of desktop systems. The reported systems included both faculty computers and those accessible to students. Ninety-six percent of faculty reported having a desktop computer.

Students were required to have an account on the university mainframe computer in 12 (23.1%) of the programs, and it was actively encouraged, although not required, in 25 (48.1%) of the programs. Only 3 (5.8%) of the programs required students to own a personal computer, but students were encouraged to own one by 25 (48.1%) of the programs. The remaining 24 (46.1%) programs took no position on students owning computers.

Respondents were questioned about the use of various computer technologies in their programs. Use of e-mail was a requirement in at least one course in 20 (38.5%) programs. Across institutions, the mean percentage of students reported as able to access and use e-mail was 78.3%. Accessing and participating in listservs was required in 20 programs (38.5%). Across all programs, the average percentage of students able to access and use listservs was 67.9%. Of the remaining technologies listed, programs reported ERIC searches as having the highest percentage of student use at 81.9%. In descending order of student use were world wide web (67.0%), accessing gopher sites (62.9%), and use of telnet (55.7%)

Respondents were then asked to indicate which of the internet resources they discuss or require students to use. The six resources reported by two or more respondents were: The University of Connecticut list of listservs (n = 8, 15.4%), the Southern Illinois University list of listservs (n = 6, 11.5%) (The University of Connecticut and Southern Illinois University resources have since merged to become Student Affairs Virtual Compass), SUNY-Plattsburgh's Counselor Net (n

= 4, 7.7%), the ACPA home page (n = 3, 5.8%), the Indiana State University Student Affairs Research Tool Archive (n = 3, 5.8%), and CESNET listserv (n = 2, 3.8%). Other resources used included the web pages of the Association of Student Judicial Affairs, the National Association of Student Personnel Administrators, CACREP, the Chronicle of Higher Education, and the home pages of their own universities or state agencies.

Preparation programs were also asked to indicate which, if any, computer software applications were required and taught in a course, or required but not covered in a course. Four programs (7.7%) indicated that word processing might be covered in class, and another 15 (28.8%) indicated use of a word processor was a requirement but was not covered in any particular course.

Word processor software packages used most often were: Wordperfect (n = 10, 19.2%), Microsoft Word (n = 5, 9.6%), Microsoft Works (n = 2, 3.8%), with the remainder indicating no specific software.

Eight programs (15.4%) indicated that database software was covered in a course, and one additional program, indicated that database software was a requirement but was not covered in a course. Lotus (n = 2, 3.8%), dbase (n = 2, 3.8%), Quattro Pro (n = 1, 1.9%), and Student Information System (n = 1, 1.9%) were the specific databases mentioned. Seven programs (13.5%) required competency in the use of spreadsheets (six in class). Lotus (n = 2, 3.8%), Quattro Pro, MS Works, SPSS, and Excel (each n = 1, 1.9%) were listed.

Training for use of functional area software such as billing and room assignment software was required by only one program; the specific software was not named. Desktop publishing software was covered in class by one program and expected as an out-of-class requirement in another; Pagemaker and Print Shop were cited.

Statistical packages were the most common software packages required for student use. Seventeen (32.7%) programs covered statistical packages in class, and one required that students learn about the program outside of class. SPSS was cited by 13 (25.0%) of these programs. SAS was mentioned by two (3.8%) programs and other statistical packages such as MYSTAT, SYSTAT, and Statistics with Finesse were each mentioned once (1.9%).

In describing how technology was incorporated into the teaching process, 39 programs (75.0%) reported that the majority of professor's lecture notes or overhead graphics were maintained on computer. Twenty-seven (51.9%) reported that class assignments were either given or received via e-mail. Twenty-three programs (44.2%) indicated that their faculty used 'Multimedia classrooms- in teaching their classes. Nineteen (36.5%) reported that students interacted with each other via "electronic discussion groups." Sixteen programs (30.8%) made use of "distance education" technology that involved teaching a course via television or internet. Programs listed overhead projectors and televisions with videotape players as their primary technology.

Forty-six programs (88.5%) did not have a written goal statement or philosophy regarding the incorporation of technology into the curriculum. Five programs (9.6%) reported that their program's goal statement on technology was

one promulgated by the college or department in which the program was housed, and was not specific to student affairs preparation. The one remaining goal statement read, "We believe all students should be knowledgeable and faculty should incorporate technology into their teaching."

In an open-ended question, respondents were asked to describe the status of their program regarding teaching students about technology. The ten responses to this question were varied. Five programs indicated that they did not incorporate technology at all, one indicated that the necessary computer hardware was not available, and two programs indicated that they were just beginning to incorporate technology into their curriculum. One program indicated that use of technology was learned at the student's initiative, and another responded that it was assumed that students would know how to use technology prior to attending college.

Several programs indicated that training in technology was carried out by college personnel outside the preparation program. Two programs reported that library staff conducted orientation sessions for use of library technology resources. Two programs allow for elective coursework to be taken in educational technology. Three programs reported that non-credit workshops were offered through the computer center or other staff.

Of those programs that handled technology training "in-house," one offered a one credit hour module in an independent study format. Two programs taught primarily research-oriented computer tools within a required research course. One program required students to take a technology course, and another required students to take a course if they were not computer literate upon enrollment. Four programs offered instruction on technology within the introduction to student affairs course, a practicum, or internship. One program was considering a requirement for students to design and maintain world wide web pages.

Student Affairs Practitioners Survey

A total of 73 surveys were completed by the senior student affairs officer or by someone selected by the officer. Twenty-four (32.9%) institutions were urban, 16 (21.9%) were suburban, and 33 (45.2%) were rural. Private institutions comprised 30% (n = 22) of the sample; 53% (n = 39) were public, and 17% (n = 12) did not indicate whether they were public or private. Twenty-three (31.5%) of the schools had an enrollment of fewer than 2,000 students, 29 (39.7%) enrolled between 2,001 and 7,000 students, 14 (19.2%) enrolled between 7,001 and 12,000, and seven (9.6%) institutions enrolled more than 12,000 students. The average number of full-time student affairs staff at these institutions was 99.8 (range = 1 to 150).

Respondents reported that professionals on their campus used both desktop systems (69% of computer work time) and mainframe systems (31% of computer work time). IBM and compatible systems were used at 53 institutions (72.6%) and Apple computers at 9 (12.3%). Three respondents (4.1%) indicated that both Apple and IBM systems were used at their institutions. Eight respondents (11.0%) did not indicate desktop computer type. Mainframe systems were

reported as VAX (n = 17,23.3%), UNIX (n = 13,17.8%), both UNIX and VAX (n = 2,2.7%), other (n = 5,6.8%), or unknown (n = 36,49.3%).

Computers were provided by the college at 68 (93.2) of the institutions, with only seven (9.6%) indicating that computers were shared. Forty-seven respondents (64.4%) indicated that computer knowledge was an integral part of a position in student affairs.

Senior student affairs officers were also asked to indicate the computer software packages most commonly used and with what frequency (never, occasionally, daily) they were used. Word processors were reportedly used daily by 67 (91.8%), occasionally by 2 (2.7%), and never by 4 (5.5%) respondents. Word processing programs most utilized were Wordperfect (n = 33,45.2%), MicroSoft Word (n = 16, 21.9%), and MicroSoft Works (n = 3, 4.1%). No other word processor package was indicated by more than one institution.

Databases were used daily by 14 (19.2%) officers, occasionally by 34 (46.6%), and never by 25 (34.2%). MicroSoft Access was used by five (6.8%) officers, five (6.8%) used dbase, three (4.1%) used Microsoft Works, three (4.1%) used File Maker, and two (2.7%) used Lotus Approach. No other software was mentioned by more than one institution.

Spreadsheets were reported in daily use by eight (11.0%) respondents, occasionally by 39 (53.4%), and never by 26 (35.6%). Spreadsheet programs of choice were Lotus (n = 13, 17.8%), MicroSoft Excel (n = 12, 16.4%), Quattro Pro (n = 5, 6.8%), and MicroSoft Works (n = 2, 2.7%). No other program was mentioned by more than one respondent.

Functional area software was used daily by 18 (24.7%) respondents, occasionally by 11 (15.1%), and never by 44 (60.3%) officers. Twenty different computer packages were cited by respondents, as well as several "homegrown" packages. The three packages named by more than one institution were the Student Information System, BANNER, and Datatel Colleague.

Desktop publishing was reportedly used daily by professional staff at six (8.2%) institutions, occasionally at 25 (34.2%), and never at 42 (57.5%). Popular software included Page Maker (n = 10, 13.7%), Print Shop (n = 6, 8.2%), Print Artist (n = 3, 4.1%) and Wordperfect (n = 2, 2.7%). Statistical packages were employed daily at two (2.7%) institutions, occasionally at 15 (20.5%), and never at 56 (76.7%). Only SPSS (any version) was mentioned by more than one school (n = 7, 9.6%).

Other computer software packages mentioned under the miscellaneous category included instruments such as Discover, SIGI Plus, Peterson's Guide to Colleges, the Strong Interest Inventory, Kiersey Temperament Sorter, and COMPASS. Numerous universities reported software packages that had been written specifically for their offices or campus or that had been adapted to their uses from other sources.

Respondents also indicated what computer technology, other than prepackaged software, was being used and with what frequency it was being used (daily, occasionally, never). Electronic mail (e-mail) was used daily by professional staff at 42 (57.5%) institutions, occasionally at 9 (12.3%) institutions,

and never at 22 (30.1%) institutions. Electronic mailing lists were being used daily at 15 respondent schools (20.5%), occasionally by 20 (27.4%), and never by 38 (52.1%). The world wide web was reportedly accessed daily at 12 institutions (16.4%), occasionally at 27 (37.0%), and never at 34 (46.6%). Usenet newsgroups were not widely used; six respondents (8.2%) indicated daily use by staff, occasional use was reported by 15 (20.5%), and no use of newsgroups was reported by 52 (71.2%) schools.

Gopher sites were accessed daily by five respondents (6.8%), occasionally by 26 (35.6%), and never by 42 (57.5%). Only four (5.5%) used telnet daily with 15 (20.5%) using it occasionally. Fifty-four (74.0%) respondents reported never using telnet. As to their use of ERIC or other electronic library searches, one (1.4%) reported daily use, 32 (43.8%) reported occasional use, and 40 (54.8%) reported never using them.

A variety (n = 36) of gopher sites, newsgroups, telnet sites, and web pages were mentioned. Only one of these, the Chronicle of Higher Education, was mentioned by more than one institution. Additionally, 32 different listservs were being used, including STU-DEV, REGISTR-L, COMMCOLL, EDLAW, ENROLL-L, and COMXV-L.

Respondents were asked to indicate, on a Likert-type scale ranging from 1 (not important) to 7 (essential), the relative importance of each of 16 different computer competencies for an entry-level professional at their institution (see Table 1). Competencies seen as important (M of five or greater) included familiarity with word processing (M = 6.30), IBM/ compatible systems (M=5.77), electronic mail (M = 5.18), and databases (M = 5.00). Competencies rated of moderate importance (M greater than or equal to four and less than five) included ability to access gopher sites (M = 4.89), use of spreadsheets (M = 4.65), accessing the world wide web (M = 4.49), use of electronic mailing lists (M = 4.48), utilizing desktop publishing (M = 4.45), accessing and use of mainframe systems and functional area software (M = 4.29 each), conducting electronic library searches (M = 4.25), and using Apple systems (M = 4.25). Items rated to be of low importance (M < 4.0) were ability to use statistical packages (M = 3.78), accessing Usenet new groups (M = 3.41), and accessing Telnet (M = 3.34).

Discussion

It appears that technology is being incorporated into the curricula of graduate level student affairs preparation programs across the country, albeit at different levels of commitment. While only six of the 52 preparation programs have a written goal statement regarding the inclusion of technology in the curriculum, most of the programs seem to require some skill development regarding computers or technology. Not surprisingly, the greatest uses of technology by students in preparation programs focus on procedures related to scholarship. Preparation program respondents indicated that more of their students (82%) would be able to use an electronic library or ERIC than any other internet-based technology, including e-mail (78%), listservs (68%), or the world wide web (67%). A similar finding relates to computer applications used by students in preparation programs; statistical packages were used (n = 18) almost as often as

the use of word processing programs ($n = 19$), and more than twice as often as any other application such as database or spreadsheet use. While students are expected to know how to use computer programs to process the results of their research efforts, the importance of this skill may need to be measured against its relative importance in the practitioner realm for which they are being prepared. For example, in the survey of practitioners, use of statistical packages received the greatest number of responses for "never" being used. While it is important to ensure that students can manipulate statistical packages for research purposes, it seems that they will rarely use this skill in their jobs. Perhaps preparation faculty might attempt to make these students aware of transferable applications of the skills involved in statistical processing, skills such as accurate data entry, budget preparation, maintenance record keeping, or assessment research.

The fact that five programs do not incorporate technology or do not have available hardware raises some concerns. The necessity of minimal technological ability and the increasing technological advancement of student affairs demands some attention to this competency. One respondent indicated that use of technology was left to the students' initiative and another simply assumed that the students would now already have these skills. These responses represent over 13% of the schools included in this study. The practitioners' responses point out that some basic utilization of technology is expected at most student affairs worksites, therefore, the preparation of competent professionals needs to include the development of these skills.

The practitioners' responses to this survey reflect Strong's (1994) observation that student affairs has embraced the widespread use of computer technology for routine administrative functions. The responses reveal that the use of computer technology in the workplace is generally expected of student affairs professionals, at least at some minimal level. Not surprisingly, word processing and electronic mail (along with a familiarity with IBM-type systems) top the list of expected competencies. Use of databases, spreadsheets, and the world wide web received a significant number of "used daily" or "used occasionally" responses. Thus, it may be inferred that the well-prepared new student affairs professional should enter the profession with at least a basic understanding of these five skills.

The need for technological ability does not end there. As indicated in Table 1, 13 of the 16 computer competency areas in the survey received a rating higher than 4 (indicating important to very important). This indicates that student affairs professionals need to come to the job with enough basic ability and computer comfort to be able to learn whatever applications and operations might be pertinent to the particular position or functional area.

The results of this study suggest a number of recommendations to student affairs administrators:

Conduct early assessment of new professionals' technical abilities to determine what training, if any, is needed to ensure that they have the basic skills expected of them.

Table 1
Senior practitioners' ratings of importance of 16 computer competencies for entry-level staff

Computer competency	Mean Rating
Familiarity with word processing	6.30
Familiarity with IBM-type systems	5.77
Ability to use electronic mail	5.18
Ability to use databases	5.00
Ability to access gopher servers	4.89
Ability to use spreadsheets	4.65
Ability to access the world wide web	4.49
Ability to use electronic mailing lists	4.48
Ability to use desktop publishing	4.45
Familiarity with mainframe systems	4.29
Familiarity with functional area software	4.29
Ability to conduct electronic library searches	4.25
Familiarity with Apple systems	4.25
Ability to use statistical packages	3.78
Ability to access usenet news groups	3.41
Ability to use telnet	3.34

Note: "Mean ratings" represent the mathematical average of practitioners' responses on a scale of 1 (not essential) to 7 (essential).

Offer basic technical training in word processing, electronic communications, data bases, and spreadsheets, as part of job orientation for all new hires. Even for those new professionals who possess these skills, it can provide a quick refresher as well as an introduction to any applications unique to their programs.

Hold regular, periodic professional development sessions for all professionals to acquaint them with new developments in software, hardware, and applications.

Similarly, a number of recommendations to preparation program faculty and professional organizations in the field are also warranted:

Faculty cannot teach what they do not know, so periodic professional development sessions on software, hardware, and appropriate applications would be beneficial.

Technological training should be developed within all preparation programs

either in coursework, workshops, or some other consistent format rather than the sporadic approach now used.

Professional organizations such as the Council for the Advancement of Standards and Commission XII of the American College Personnel Association should take leadership in developing and disseminating standards to encourage consistent technological training in all preparation programs.

Summary

Some student affairs preparation programs are addressing the need to acquaint their students with the various uses of technology as part of both the pedagogical process and the content of the curriculum. Unfortunately, a large percentage of programs have not yet made this a part of their curricula.

Graduate training programs should provide basic competencies on computer technology applications and use. This study provides graduate program faculty a basis to argue for the appropriate resources to train students, and for technology to be made a general expectation of the curriculum in order to prepare new professionals with the competencies needed to be successful in student affairs.

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