

Applications of Technology in Accounting Education and Analysis of Its Use Among Faculty

Nas Ahadiat

California State Polytechnic University, Pomona

A number of professional organizations have called on accounting faculty to use technology in their courses. Given the range of technologies available, the purpose of this study is to determine what technologies have widespread applications among accounting educators. In addition, the study investigates whether differences exist among educators in their choices of technology and the extent to which they use it. The information presented in this article also can be used by administrators to develop an effective policy designed to ensure broad participation of faculty in the integration of technology into the university curriculum.

The Association to Advance Collegiate Schools of Business requires that appropriate instructional technology be available and utilized by the faculty (AACSB, 1993). Also, the American Institute of Certified Public Accountants suggests, "individuals entering the accounting profession must acquire the necessary skills to use *technology* tools effectively and efficiently" (AICPA, 1998).

While the AACSB and AICPA refer to the term technology in a fairly general sense, other authoritative bodies are more specific in their recommendations. For example, the American Accounting Association's Bedford Committee, in its report to the university faculty, suggests that the accounting educator's kit of teaching tools should include computer-assisted instruction (AAA, 1986). The Accounting Education Change Commission in its Position Statement No. One points out, "because organizations are affected by rapidly increasing dependency on technology, accounting professionals must understand the current and future roles of *information technology* in organizations" (AECC, 1990). Similarly, the Institute of Management Accountants in its practice analysis project identifies familiarity with computer software as one of the top 10 highest-ranked knowledge, skills, and abilities for both importance to work and entry-level competence (IMA, 1996).

The terms instructional technology and technology with relevance to instruction include a wide range of media and protocols such as audio and video equipment, graphics, images, animation, and other applications of computer hardware and software, and data transmission equipment used in the delivery of concepts and applications of knowledge to students in and out of the classroom. Exactly what technology is appropriate and whether differences exist among faculty in their choices are issues that are yet to be resolved.

Given the range of technologies with possible applications in education, this study is designed primarily to determine what technologies have widespread appeals among accounting educators across the country. Such information can provide a basis by which faculty will determine what media are most appropriate for accounting education.

Study Design

To investigate the extent to which different technology and their applications are used in accounting education, survey research is found most appropriate.

Data Collection

The data required for this study were collected via a questionnaire containing two general sections. The first section included a brief definition of technologies used for instructions. It also contained questions concerning the extent to which each technology or its applications are being used in teaching. Participants were asked to indicate the level of use by choosing one of three possible responses, "never", "sometime", or "frequently". The second section contained questions designed to solicit demographic information for classification purposes.¹

Sampling

The sampling frame contained the university faculty listed on the 2000-2001 *Accounting Faculty Directory*. Using systematic random design, a sample of eight hundred subjects was drawn. The sample included subjects from all fifty states and districts of the United States of America. The questionnaire was sent to each participant through the U.S. mail service. A self-stamped return envelope was enclosed with each questionnaire to encourage greater participation. In addition, to increase the response rate, a second mailing was conducted a few weeks later.²

Results

Background Information

The two mailings resulted in a total of 288 useable responses producing a response rate of 36 percent.³ The majority of the respondents indicated that their primary teaching area is financial accounting (38%), 20 percent pointed out that they teach cost/managerial, 13 percent tax, 12 percent auditing, 7 percent not-for-profit, and 7 percent accounting information systems.

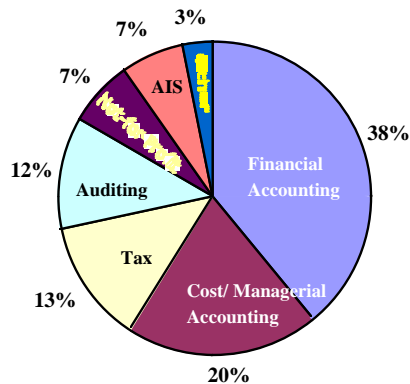


Figure 1
Respondents Areas of Teaching

¹ To ensure validity and reliability of the questions, the instrument was pre-tested by using a small group of accounting faculty in Southern California. As the result of this pre-testing, several questions were added or modified prior to mass mailing.

² In order to measure the probability of none-response bias, statistical tests were conducted on the early and late responses. The results showed no significant differences between the two groups, leading to the conclusion that the chance of none-response bias was statistically none-existent ($p = 0.05$).

³ The first mailing produced 209 responses. Seventy-nine additional responses were received from the second mailing bringing the total to 288 responses.

Academic ranks of participants included assistant professor (26%), associate professor (38%), and full professor (31%). Only 5 percent of the respondents were lecturers. Also more than half of the respondents were from the schools accredited by the AACSB (56%).⁴

Ninety seven percent of the participants reported using a computer at home. Desktops were the most popular computers used by over two-thirds of the faculty. The remaining one-third used laptops. Figure 2 shows the brand names of computers and the frequency of their use by accounting faculty. According to this distribution, the most popular brand name is IBM with 49% use, followed by Compaq (13%), Apple (10%), Dell (8%), and Hewlett-Packard (6%). The remaining 14 percent of the faculty use brand names other than those named in this study.

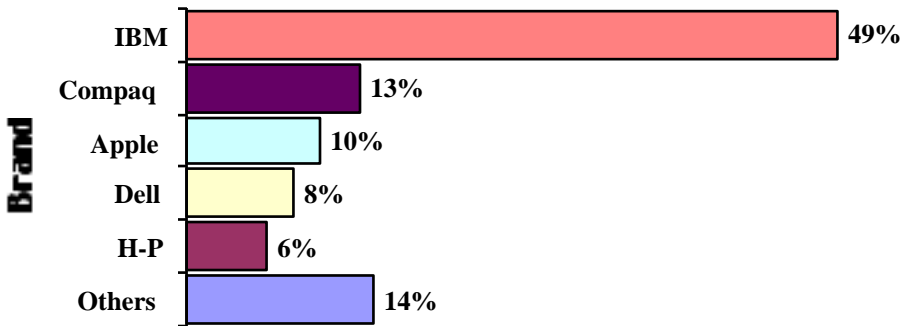


Figure 2
Brands of Computers Used

To capture their experience, the participants were asked to report the number of years of teaching in higher education. As shown below (Figure 3), only nine percent of the respondents had less than five years of experience. The remaining 91% reported 6 or more years of teaching experience.

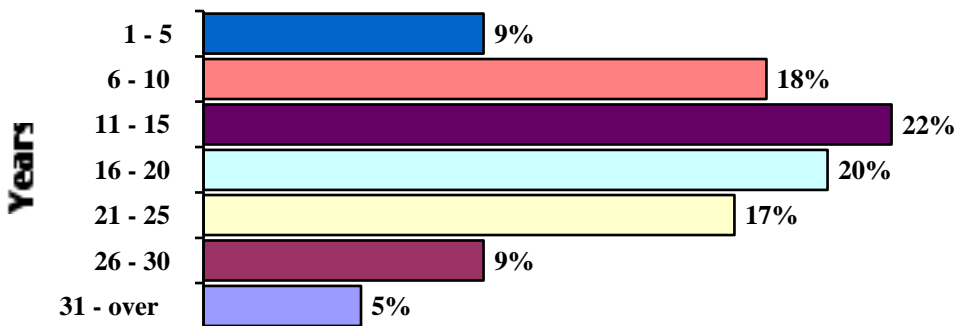


Figure 3
Respondents' Years of Experience

⁴ Among the AACSB accredited schools, nearly 64 percent were accredited for their business programs only. The remaining 36 percent held accreditation for both accounting and business programs.

Use of Instructional Technology:

Table 1 contains the top ten applications of technology in accounting education. The most frequently used medium is E-mail for communication with colleagues with a frequency of 90.2%. Internet is the second preferred technology chosen by nearly 90% of faculty. The third most popular medium is word processing required for student assignments by over 88% of accounting faculty. The next two preferred applications of technology involve computer spreadsheet, for both keeping grades and records or used for student assignments. A significant number of respondents, 86% and 84% respectively, indicated their interest in using this technology. Also, E-mail for individualized contacts with students has widespread appeals (with a frequency of 84%).

Table 1
Frequent Used Technologies in Accounting Education
Ranked by Total Frequency of Use

Rank	Applications of Technology	How Often Do You Use:			
		Never	Sometime (Less than 50% of time)	Frequently (More than 50% of time)	Total Use %
1	E-mail: Communications with on-and off-campus colleagues?	9.8	34.6	55.6	90.2
2	Internet: Info retrieval via gopher, World Wide Web, etc.?	10.1	50.2	39.7	89.9
3	Computer word processing assigned to students?	11.9	41.3	46.8	88.1
4	Computer spreadsheets to keep grades, records, etc.?	14.0	15.4	70.6	86.0
5	Computer spreadsheet assigned to students?	15.7	44.6	39.7	84.3
6	E-mail: Individualized contact with students?	16.0	48.1	35.9	84.0
7	Presentation software (e.g. PowerPoint) to prepare handouts, transparencies/ presentation of instructional materials, etc.?	28.6	40.4	31.0	71.4
8	Video used in class or assigned to students?	37.5	57.3	5.2	62.5
9	Computer lab for class meeting?	46.2	45.1	8.7	53.8
10	Data analysis software such as Statistix, SPSS, LINPRO, SAS, etc., for your own use?	74.0	30.5	22.5	53.0

Other technologies highly preferred by the accounting faculty are the presentation software (e.g., PowerPoint) for class presentations and video used in teaching. Seventy-one percent and 62% of the faculty surveyed use these media. Finally, the last two technologies on the top-ten list of faculty choices are computer lab for class meeting and data analysis software for faculty's own use with 54% and 53% usage.

Table 1 also demonstrates the frequency with which faculty do not use certain technologies for instruction. According to the results presented in this table, at least 10 percent of the accounting faculty never use E-mail, Internet, word processing or spreadsheet software. This percentage is much greater when it comes to the use of data analysis software (i.e., 74%).

In addition to the top-ten most frequently used applications, were also identified technologies that are least favored by the accounting faculty. These technologies are presented in Table 2. The technology with little or no application in accounting education is audio. Only 16% of educators use this medium for teaching. Distance education devices and teleconferencing represent the next two technologies with low usage, preferred by only 19% and 24% of the accounting faculty, respectively. As seen earlier, another unpopular medium is data analysis application software used by students for performing course assignments. These applications are used by only 19.5% of the respondents.

Table 2

Infrequently Used Technologies in Accounting Education
Ranked by Total Frequency of Use

Rank	Applications of Technology	How Often Do You Use:			
		Never	Sometime (Less than 50% of time)	Frequently (More than 50% of time)	Total Use %
1	Audio used in class or assigned to student?	83.6	15.7	0.7	16.4
2	Distance education?	80.6	14.6	4.8	19.4
3	Data analysis software such as Statistix, SPSS, LINPRO, SAS, etc. assigned to students?	80.5	15.0	4.5	19.5
4	Course-specific computer teleconferences/bulletin?	76.3	17.4	6.3	23.7
5	Film used in class or assigned To students?	75.6	23.0	1.4	24.4
6	Multimedia for student individualized learning	67.0	25.6	7.4	33.0
7	Electronic lists for discussions with colleagues?	60.6	28.9	10.5	39.4
8	Multimedia for in-class presentations?	52.1	33.9	14.0	47.9

Table 2 also demonstrates that only one-quarter of all accounting educators use film technology in their teaching. In addition, multimedia does not seem highly popular for teaching accounting. Only one-third of the faculty indicated using this medium. The last two media on the list of least favored applications are electronic lists for discussion with colleagues and multimedia for class presentations. Electronic lists are favored by only 39% and multimedia for class presentations is used by 48% of the respondents.

Analysis and Discussion

While the results of the study presented in the previous section reveals what technologies and their applications are popular among accounting faculty, further analysis of the responses by the participants' demographics are provided in this section to determine whether significant differences exist among the university faculty with respect to the following attributes: (1) Areas of teaching, (2) Academic ranks, (3) Degrees offered, (4) AACSB accreditation, (5) work experience/age, and (6) Gender.

1. Areas of Teaching: Analysis of the results by teaching area shows that applications of computer technology are fairly widespread and not limited to accounting information systems (AIS) course (Table 3). However, it was observed that business law professors use significantly less E-mail for contacts with students, computer spreadsheet for students' assignments, presentation software, and data analysis software compared with all other faculty. While spreadsheet applications may not be appropriate for solving business law assignments, it is not clear why the other three media have low popularity in this area. The analysis revealed that AIS courses have greater needs for computer labs for class meetings than all other areas. Also, government and not-for-profit accounting seems more appropriate for distance education than other courses.

Table 3
 Applications of Instructional Technology
 By Primary Teaching Area
 (1 = Never Used, 3 = Used 50% or More of the Time)
 (N = Number of Responses in Each Primary Teaching Area)

#	Application of Technology	Accounting Information Systems (N = 26) Mean	Auditing (N = 49) Mean	Business (N = 6) Mean	Financial Accounting (N = 150) Mean	Government (not-for-profit) Accounting (N = 26) Mean	Cost/ Managerial Accounting (N = 77) Mean	Taxation (N = 51) Mean	Other (N = 8) Mean	P Sig.
1	Audio used in class or assigned to students	1.19	1.24	1.43	1.15	1.19	1.16	1.30	1.18	
2	Film used in class or assigned to students	1.23	1.33	1.67	1.30	1.46	1.36	1.22	1.50	
3	Video used in class or assigned to students	1.81	2.04	1.83	1.67	1.77	1.73	1.65	2.00	
4	Multimedia for in-class presentation	1.92	1.67	1.50	1.60	1.61	1.58	1.65	1.75	
5	Multimedia for student individualized learning	1.69	1.57	1.33	1.35	1.23	1.32	1.41	1.50	
6	Distance education	1.50	1.16	1.00	1.25	1.92	1.21	1.29	1.37	0.05
7	Computer lab for class meeting	2.15	1.67	1.83	1.63	1.65	1.57	1.63	1.87	0.05
8	E-mail: Individualized contact with students	2.31	2.12	1.83	2.21	2.31	2.17	2.16	2.12	0.05
9	E-mail: Communications with on-and off-campus colleagues	2.50	2.53	2.50	2.40	2.35	2.48	2.45	2.75	

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Table 3 (Continued)

#	Application of Technology	Accounting Information Systems (N = 26) Mean	Auditing (N = 49) Mean	Business (N = 6) Mean	Financial Accounting (N = 150) Mean	Government (not-for-profit) Accounting (N = 26) Mean	Cost/ Managerial Accounting (N = 77) Mean	Taxation (N = 51) Mean	Other (N = 8) Mean	P Sig.
10	Course-specific computer teleconferences/bulletin	1.40	1.29	1.17	1.29	1.23	1.27	1.31	1.50	
11	Electronic lists for discussions with colleagues	1.69	1.44	1.50	1.46	1.73	1.39	1.53	1.75	
12	Internet: Info retrieval via gopher, World Wide Web, etc.	2.58	2.31	2.33	2.27	2.27	2.23	2.33	2.37	
13	Computer word processing assigned to students	2.58	2.47	2.17	2.28	2.58	2.48	2.41	1.37	
14	Computer spreadsheet assigned to students	2.38	2.29	1.83	2.25	2.35	2.38	2.22	2.12	0.05
15	Computer spreadsheets to keep grades, records, etc.	2.77	2.51	2.00	2.48	2.50	2.61	2.53	2.37	0.05
16	Presentation software (e.g. PowerPoint) to prepare handouts, transparencies/presentation of instructional materials, etc.	2.23	2.14	1.83	1.95	2.00	2.06	2.00	2.02	0.05
17	Data analysis software for your own use	2.00	1.73	1.33	1.72	1.61	1.69	1.57	1.37	0.05
18	Data analysis software assigned to students	1.35	1.20	1.17	1.20	1.15	1.25	1.27	1.25	
	Overall Mean	1.96	1.93	1.85	1.97	2.11	2.11	2.16	2.23	

2. Academic Ranks: Table 4 contains frequencies of technology use by academic ranks. It appears that instructional technology choices for accounting education are fairly uniform across academic ranks. Only in 3 out of 18 areas lecturers are found to lag significantly behind others in using technology. One of these areas is in the use of E-mail for communication with colleagues. In addition, lecturers seem to be wading in the use of presentation and data analysis software. If accounting programs are to comply with the recommendations of the AECC, AACSB, AICPA, IMA and others, which among other things call on faculty to apply appropriate technologies across all areas of teaching, administrators must ensure that lecturers receive adequate training, instructions, and supervision to stay on a par with other faculty. Close coordination of course delivery as well as its content by a seasoned professor can assure compliance with more consistency in the curriculum. The analysis also showed that assistant professors have a higher preference for the data analysis software for their own use as compared to all others.

Table 4

Applications of Instructional Technology
By Academic Rank

(1 = Never Used, 3 = Frequently Used)

(N = Number of Responses in Each Primary Teaching Area)

#	Applications of Technology	Lecturer (N = 13) Mean Ratings	Assistant Professor (N = 69) Mean Ratings	Associate Professor (N = 103) Mean Ratings	Professor (N = 83) Mean Ratings	P Sig.
1	Audio used in class or assigned to students	1.15	1.16	1.12	1.26	
2	Film used in class or assigned to students	1.23	1.23	1.30	1.25	
3	Video used in class or assigned to students	1.54	1.62	1.77	1.70	
4	Multimedia for in-class presentation	1.46	1.57	1.77	1.52	
5	Multimedia for student individualized learning	1.38	1.48	1.43	1.33	
6	Distance education	1.31	1.33	1.26	1.16	
7	Computer lab for class meeting	1.69	1.59	1.74	1.54	
8	E-mail: Individualized contact with students	2.15	2.42	2.19	2.07	
9	E-mail: Communications with on-and off-campus colleagues	2.00	2.59	2.48	2.42	0.10
10	Course-specific computer teleconferences/bulletin	1.15	1.42	1.33	1.23	
11	Electronic lists for discussions with colleagues	1.46	1.51	1.49	1.57	
12	Internet: Info retrieval via gopher, World Wide Web, etc.	2.15	2.48	2.23	2.25	
13	Computer word processing assigned to students	2.38	2.51	2.34	2.31	

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Table 4 (Continued)

#	Applications of Technology	Lecturer (N = 13) Mean Ratings	Assistant Professor (N = 69) Mean Ratings	Associate Professor (N = 103) Mean Ratings	Professor (N = 83) Mean Ratings	P Sig.
14	Computer spreadsheet assigned to students	2.23	2.32	2.27	2.17	
15	Computer spreadsheets to keep grades, records, etc.	2.46	2.83	2.54	2.41	
16	Presentation software (e.g. PowerPoint) to prepare handouts, transparencies/ presentation of instructional materials, etc.	1.61	2.13	2.11	1.95	0.05
17	Data analysis software for your own use	1.31	2.16	1.76	1.50	0.05
18	Data analysis software assigned to students	1.15	1.34	1.21	1.23	
	Overall Mean	1.66	1.87	1.80	1.71	

3. Degrees Offered: The type of degree granted (graduate or undergraduate) does not seem to significantly differentiate schools in their choices of instructional technology (Table 5). The overall results tend to be the same and show little or no differences in the selected list of top applications of technology among the degree programs. An exception is found with respect to the use of data analysis software, which is used more extensively by faculty of Ph.D. granting institutions than all others.

Table 5

Applications of Instructional Technology
By Business Degree Offered

(1 = Never Used, 3 = Used 50% or More of the Time)

(N = Number of Responses For Each Business Degree Offered)

#	Applications of Technology	Baccalaureate (N = 157) Mean	Masters (MS or MBA) (N = 163) Mean	Ph.D. (DBA) (N = 98) Mean	Other (N = 12) Mean	P Sig.
1	Audio used in class or assigned to students	1.15	1.18	1.14	1.33	
2	Film used in class or assigned to students	1.24	1.24	1.25	1.58	
3	Video used in class or assigned to students	1.72	1.70	1.60	2.00	
4	Multimedia for in-class presentation	1.63	1.64	1.62	1.58	
5	Multimedia for student individualized learning	1.43	1.47	1.29	1.50	
6	Distance education devices	1.27	1.32	1.21	1.08	
7	Computer lab for class meeting	1.62	1.59	1.57	2.08	
8	E-mail: Individualized contact with students	2.24	2.25	2.38	2.25	
9	E-mail: Communications with on-and off-campus colleagues	2.53	2.50	2.57	2.42	
10	Course-specific computer teleconferences/bulletin	1.37	1.37	1.37	1.25	
11	Electronic lists for discussions with colleagues	1.54	1.55	1.66	1.67	
12	Internet: Info retrieval via gopher, World Wide Web, etc.	2.29	2.32	2.45	2.17	
13	Computer word processing assigned to students	2.41	2.37	2.33	2.58	
14	Computer spreadsheet assigned to students	2.28	2.26	2.23	2.67	
15	Computer spreadsheets to keep grades, records, etc.	2.55	2.58	2.68	2.67	
16	Presentation software (e.g. PowerPoint) to prepare hand-outs, transparencies/presentation of instructional materials, etc.	2.00	2.10	2.19	2.33	
17	Data analysis software for your own use	1.70	1.72	2.09	1.92	0.05
18	Data analysis software assigned to students	1.22	1.24	1.36	1.58	
	Overall Mean	1.79	1.80	1.83	1.92	

4. AACSB Accreditation: While the AACSB accreditation standards require that appropriate instructional technology be available and utilized by the faculty of accredited schools (1993), we found only few differences between the accredited and non-accredited schools with respect to the choice of technology and the extent to which it is used in accounting curricula. The only two applications with greater demand among accredited schools are E-mail used for communication with students at $p < 0.10$ and data analysis software used by faculty ($p < 0.05$). No significant differences are found between the accredited and non-accredited schools in their use of other technologies (Table 6).

Table 6
Applications of Instructional Technology
By School Accreditation

(1 = Never Used, 3 = Used 50% or More of the Time)
(N = Number of Responses in Each Area)

#	Applications of Technology	Non-AACSB Accredited (N = 117) Mean	AACSB Accredited in Business Programs (N = 129) Mean	AACSB Accredited in Accounting (N = 74) Mean	P Sig.
1	Audio used in class or assigned to students	1.15	1.18	1.20	
2	Film used in class or assigned to students	1.30	1.22	1.24	
3	Video used in class or assigned to students	1.77	1.59	1.66	
4	Multimedia for in-class presentation	1.61	1.65	1.66	
5	Multimedia for student individualized learning	1.42	1.40	1.45	
6	Distance education devices	1.19	1.34	1.28	
7	Computer lab for class meeting	1.74	1.58	1.52	
8	E-mail: Individualized contact with students	2.00	2.36	2.40	0.10
9	E-mail: Communications with on-and off-campus colleagues	2.34	2.56	2.65	
10	Course-specific computer teleconferences/bulletin	1.21	1.41	1.41	
11	Electronic lists for discussions with colleagues	1.39	1.62	1.66	
12	Internet: Info retrieval via . gopher, World Wide Web, etc	2.18	2.39	2.46	
13	Computer word processing assigned to students	2.32	2.38	2.49	
14	Computer spreadsheet assigned to students	2.25	2.24	2.26	

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15	Computer spreadsheets to keep grades, records, etc.	2.48	2.61	2.73	
16	Presentation software (e.g. PowerPoint) to prepare hand-outs, transparencies/ presentation of instructional materials, etc.	1.92	2.12	2.15	
17	Data analysis software for your own use	1.58	1.90	1.96	0.05
18	Data analysis software assigned to students	1.19	1.30	1.32	
	Overall Mean	1.72	1.82	1.86	

5. Teaching Experience and Age: Tables 7 and 8 provide the analysis of applications of technology by years of experience and age, respectively. As it was expected, the analysis revealed that experience and age are highly multi-collinear and thus, one could represent the other.

Significant differences were found between the choices of technology by younger faculty who have five or fewer years of experience and those older or with more experience. Less experienced and younger faculty tend to use more E-mail, Internet, word processing, spreadsheet, presentation programs, and data analysis software as compared to their experienced and older colleagues. The results here are consistent with what was reported by Morris (1988-89), who discovered that age has an inverse impact on attitudes toward computer (*i.e.*, younger individuals have a more positive attitude than older people).

Table 7
Applications of Instructional Technology
By Years of Teaching Experience

(1 = Never Used, 3 = Frequently Used)
(N = Number of Responses in Each Primary Teaching Area)

#	Application of Technology	1-5 Years (N = 23) Mean Ratings	6-10 Years (N = 47) Mean Ratings	11-15 Years (N = 58) Mean Ratings	16-20 Years (N = 54) Mean Ratings	21-25 Years (N = 44) (N = 26) Ratings	26-30 Years (N = 54) (N = 77) Ratings	31 or More Years (N = 14) (N = 51) Ratings	P Sig.
1	Audio used in class or assigned to students	1.09	1.11	1.14	1.26	1.14	1.12	1.43	
2	Film used in class or assigned to students	1.39	1.17	1.15	1.33	1.34	1.21	1.28	
3	Video used in class or assigned to students	1.48	1.60	1.79	1.67	1.70	1.75	1.86	
4	Multimedia for in-class presentation	1.43	1.64	1.67	1.76	1.54	1.37	1.57	
5	Multimedia for student individualized learning meeting	1.39	1.40	1.40	1.44	1.36	1.21	1.43	
6	Distance education	1.17	1.32	1.36	1.13	1.25	1.08	1.36	
7	Computer lab for class	1.43	1.70	1.67	1.59	1.79	1.42	1.50	
8	E-mail: Individualized contact with students	2.61	2.36	2.22	2.17	2.02	2.00	2.00	0.05
9	E-mail: Communications with on-and off-campus colleagues	2.61	2.68	2.48	2.46	2.34	2.25	1.86	0.05

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Table 7 (Continued)

10	Course-specific computer teleconferences/bulletin	1.39	1.30	1.74	1.17	1.23	1.12	1.36	
11	Electronic lists for discussions with colleagues	1.61	1.70	1.33	1.55	1.45	1.46	1.43	
12	Internet: Info retrieval via gopher, World Wide Web, etc.	2.68	2.30	2.38	2.20	2.18	2.12	2.21	
13	Computer word processing assigned to students	2.52	2.55	2.34	2.37	2.20	2.29	2.14	
14	Computer spreadsheet assigned to students	2.39	2.23	2.36	2.18	2.25	2.00	2.07	
15	Computer spreadsheets to keep grades, records, etc	2.91	2.66	2.67	2.55	2.31	2.37	2.29	
16	Presentation software (e.g. PowerPoint) to prepare handouts, Transparencies/ presentation of instructional materials, etc.	2.22	2.11	2.14	2.07	1.70	1.71	2.07	0.05
17	Data analysis software for your own use	2.30	2.04	1.86	1.57	1.56	1.25	1.50	0.05
18	Data analysis software assigned to students	1.35	1.19	1.34	1.17	1.20	1.17	1.43	
	Overall Mean	1.89	1.84	1.83	1.76	1.70	1.60	1.71	

Table 8
Applications of Instructional Technology
By Age

(1 = Never Used, 3 = Frequently Used)
(N = Number of Responses in Each Primary Teaching Area)

#	Applications of Technology	25-34 Years Old (N = 8) Mean Ratings	35-44 Years Old (N = 70) Mean Ratings	44-54 Years Old (N = 133) Mean Ratings	55 and more (N = 60) Mean Ratings	P Sig.
1	Audio used in class or assigned to students	1.00	1.13	1.19	1.20	
2	Film used in class or assigned to students	1.25	1.29	1.16	1.25	
3	Video used in class or assigned to students	1.75	1.67	1.69	1.75	
4	Multimedia for in-class presentation	1.37	1.38	1.59	1.64	
5	Multimedia for student individualized learning	1.37	1.53	1.38	1.32	
6	Distance education	1.37	1.27	1.23	1.23	
7	Computer lab for class meeting	1.50	1.67	1.66	1.58	
8	E-mail: Individualized contact with students	2.62	2.44	2.18	1.95	0.05
9	E-mail: Communications with on-and off-campus colleagues	2.62	2.66	2.45	2.27	0.05
10	Course-specific computer teleconferences/bulletin	1.62	1.39	1.28	1.23	
11	Electronic lists for discussions with colleagues	1.62	1.60	1.47	1.45	
12	Internet: Info retrieval via gopher, World Wide Web, etc.	2.62	2.44	2.31	2.03	
13	Computer word processing assigned to students	2.75	2.51	2.32	2.24	
14	Computer spreadsheet assigned to students	2.25	2.31	2.24	2.19	
15	Computer spreadsheets to keep grades, records, etc.	2.75	2.71	2.60	2.32	
16	Presentation software (e.g. PowerPoint) to prepare hand-outs, transparencies/ presentation of instructional materials, etc.	2.37	2.09	2.02	1.97	0.05
17	Data analysis software for your own use	2.25	2.10	1.71	1.44	0.05
18	Data analysis software assigned to students	1.50	1.31	1.19	1.24	
	Overall Mean	1.92	1.86	1.76	1.68	

6. Gender: Finally, the present analysis indicates that accounting faculty's choice of technology is not significantly impacted by their gender. Both female and male faculty share similar views in their selections of the common core of technology and its applications that are appropriate for accounting education (see Table 9).

Table 9

Applications of Instructional Technology
By Gender

(1 = Never Used, 3 = Frequently Used)

(N = Number of Responses in Each Primary Teaching Area)

#	Applications of Technology	Female (N = 90) Mean Ratings	Male (N = 178) Mean Ratings	P Sig.
1	Audio used in class or assigned to students	1.18	1.17	
2	Film used in class or assigned to students	1.25	1.27	
3	Video used in class or assigned to students	1.63	1.72	
4	Multimedia for in-class presentation	1.66	1.61	
5	Multimedia for student individualized learning	1.48	1.37	
6	Distance education	1.29	1.22	
7	Computer lab for class meeting	1.68	1.61	
8	E-mail: Individualized contact with students	2.44	2.10	
9	E-mail: Communications with on-and off-campus colleagues	2.64	2.39	
10	Course-specific computer teleconferences/bulletin	1.36	1.28	
11	Electronic lists for discussions with colleagues	1.52	1.50	
12	Internet: Info retrieval via gopher, World Wide Web, etc.	2.45	2.24	
13	Computer word processing assigned to students	2.43	2.34	
14	Computer spreadsheet assigned to students	2.30	2.22	
15	Computer spreadsheets to keep grades, records, etc.	2.73	2.48	
16	Presentation software (e.g., PowerPoint) to prepare handouts, transparencies/presentation of instructional materials, etc.	2.14	1.98	
17	Data analysis software for your own use	1.92	1.69	
18	Data analysis software assigned to students	1.22	1.25	
	Overall Mean	1.85	1.75	

Conclusion

In the age of information and increasing use of technology, market requirements for accounting graduates are changing rapidly. Training future accountants who can fit into the highly technology-based environment is more challenging for academia than ever before. This study examined the extent to which accounting academics have adopted the use of technology in their instructions. As it was expected, the most frequently used technology in accounting education is the information technology, while audio technology is hardly ever used in this discipline. By far the most popular applications of information technology and computers are E-mail, Internet, word processing, spreadsheet, presentation and data analysis software. In addition, video technology is also used to some degree by accounting educators.

The results were further analyzed by various attributes to detect significant differences among faculty in their use of technology. While on the whole there seemed to be some level of concurrence among accounting faculty in their choices of technology, some differences were evident. For example, we found that some areas of accounting curriculum, such as business law, use less technology than others. Also, lecturers tend to prefer a lighter use of information technology compared with other faculty.

As technology continues to make tremendous impact on the way businesses conduct their daily activities, information about faculty's choices of technology for teaching and the rate at which they include it in their relations with students in and out of the classroom are of vital importance. Such information can assist us to identify what technologies and applications are appropriate for the delivery of our curriculum. No doubt a well-designed technology based curriculum requires proper planning, skills, and disposition. In search of excellence in accounting education, faculty should continually be on the lookout for those applications that are most likely to enhance student learning.

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