ICT Adoption of the Ateneo de Manila University's Loyola School Faculty

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Abstract: The Ateneo de Manila University is an institution of higher learning in Quezon City, Philippines. The study determined the level of computer experience of the faculty; the extent to which faculty use computers to teach, the extent to which they required students to use computers, the demographic profile of Early Adopters (EAs) and Mainstream Faculty (MFs), and their patterns of computer use. Data showed that that faculty adoption of technology was limited to the support of traditional teaching methods. Although the faculty made substantial to extensive personal and professional use of Windows, productivity tools, email, browsers, and online databases, they only required students to use word processors extensively. Data showed no significant difference between gender, rank, employment, and computer usage characteristics of the EAs and MFs. However, MFs tended to have higher educational attainments than EAs. MFs also began purchasing computers earlier and tended to own more computers than EAs.

Context

The Ateneo de Manila University's Loyola Schools are institutions of higher learning located in Quezon City, Philippines. The Loyola Schools has 300 computers for student use and 300 computers for teacher and administrative use. All computers have productivity tools, Internet access, and special-purpose software as needed. In school year 2002-2003, the Loyola Schools adopted WebCT. Since its adoption, WebCT has been used to support 60 Loyola Schools courses in a variety of disciplines. While there is little doubt that the Loyola Schools faculty is technology-savvy, the question arises: in what ways does the faculty make use of IT for teaching and learning? Does Cuban's (2001) observation hold true for the Ateneo, that is, that the faculty's use of IT is limited to the preservation of traditional instructional methods?

Faculty members from the Department of Information Systems and Computer Science and the Education Department formed a research team to determine how extensively the Loyola Schools' faculty adopt the university's ICT resources for teaching and learning. Using Rogers' (1995) diffusion of innovations framework, the team categorized the Loyola Schools faculty into Early Adopters (EAs) of technology from Mainstream Faculty (MFs), and profiled each subgroup. The team answered the following specific questions:
1. What is the level of computer experience of the Loyola Schools' faculty?
2. To what extent do the Loyola Schools' faculty use IT tools in teaching their courses?
3. To what extent do the Loyola Schools' faculty require their students to use IT tools to fulfill their course requirements?
4. What is the demographic profile of EAs and MFs?
5. What are the patterns of computer use of EAs and MFs?

Methodology

The population under study was composed of the second semester, school year 2002-2003 full-time and part-time faculty of the Ateneo de Manila Unversity's Loyola Schools, or approximately 590 faculty members in all. The research team made use of a paper-based survey questionnaire designed to gather data regarding the Loyola Schools faculty and their technology usage. The questionnaire was adapted from an analogous study conducted by Jacobsen (1998). Five (5) subsections were of concern to this paper: the respondent profile, patterns of computer use, computer experience, computer use for teaching, and computer use of students. The responses were tabulated using an appropriate statistical package.

Results

Of the 590 faculty members surveyed, 146 or 24.7% responded. There were 82 or 56.2% male faculty respondents and 64 or 43.8% female faculty respondents.. Their ages ranged from 21 years to 75 years with mean of 39 years of age. The mean number of years as faculty in the Ateneo is 8 years and the mean number of years in the teaching profession is 9.2 years. The mean number of students per semester is 79.33 students. There were 35.6% part time faculty, 28.1% full time probationary faculty and 36.3% full time, permanent faculty.

Level of Computer Experience of the Loyola Schools Faculty

Table 1 indicates that the Loyola Schools Faculty had substantial experience in the following information technology tools and applications: email, word processors, Internet browsers, Windows operating system, and spreadsheet software.

TABLE 1. LEVEL OF COMPUTER EXPERIENCE OF LOYOLA SCHOOLS FACULTY

IT Tools and Applications	Mean	Standard Deviation	Level of Experience
Email	3.18	.980	Substantial
Word processors	3.15	.935	Substantial
Internet browsers	3.01	1.06	Substantial
Windows	2.68	1.07	Substantial
Spreadsheet software	2.53	1.28	Substantial
Presentation tools	2.43	1.29	Fair
Listservs/BBS	2.14	1.45	Fair
Text Editor	2.01	1.52	Fair
Online database or library catalog	1.83	1.39	Fair
Scanner	1.78	1.41	Fair

Note. Extensive=4, Substantial=3, Fair=2, A little=1, None=0

Extent of IT Use for Teaching

Table 2 shows that Loyola Schools faculty made substantial use of word processing for teaching. The faculty made fair use of the Windows operating system, Internet browsers, email, presentation tools, and spreadsheets . Finally, the faculty made little use of listservs/BBS, online databases or library catalog, text editors and scanning devices.

Extent to Which Faculty Require Students to Use IT

The extent to which Loyola Schools faculty required their students to use IT tools to fulfill their course requirements are shown in Table 3. There were no reports of any IT tool or application being used extensively or substantially for students to use to fulfill their course requirements.

TABLE 2 EXTENT TO WHICH LOYOLA SCHOOLS FACULTY USE IT TOOLS IN TEACHING

IT Tools and Applications	Mean	Standard Deviation	Level of Use
Word processor	2.70	1.36	Substantial
Windows	2.31	1.46	Fair
Internet brower	2.18	1.53	Fair
Email	2.11	1.51	Fair
Presentation tools	1.95	1.57	Fair
Spreadsheet	1.80	1.58	Fair
Listservs/BBS	1.21	1.52	A little
Online database or library catalog	1.16	1.35	A little
Text editor	0.99	1.45	A little
Scanner	0.95	1.33	A little

Note. Extensive=4, Substantial=3, Fair=2, A little=1, None=0

TABLE 3. EXTENT TO WHICH LOYOLA SCHOOLS FACULTY REQUIRE THEIR STUDENTS TO USE IT TOOLS TO FULFILL COURSE REQUIREMENTS.

IT Tools and Applications	Mean	Standard Deviation	Level
Word Processors	2.05	1.50	Fair
Windows	1.78	1.53	Fair
Internet browsers	1.66	1.51	Fair
Email	1.59	1.44	Fair
Presentation tools	1.49	1.46	A little
Spreadsheets	1.01	1.43	A little
Listservs/BBS	0.93	1.41	A little
Charting or graphing tools	0.84	1.24	A little
Online database or library catalog	0.84	1.25	A little
Text editor	0.73	1.34	A little

Note. Extensive=4, Substantial=3, Fair=2, A little=1, None=0

When examined collectively, though, Tables 1, 2, and 3 and the anecdotal evidence imply that the faculty have adopted technology on a personal basis. With a few exceptions, however, IT still remains at the fringes of the teaching-learning process.

Characteristics of EAs and MFs

Fifty-seven percent of EAs were from the School of Science and Engineering, 30% from the School of Social Sciences, and 13% from the School of Management. There were no EAs from the School of Humanities and the P.E. Department. That EAs were composed primarily of faculty members from the School of Science and Engineering is consistent with findings from other studies.

Patterns of Computer Use

EAs and MF had been using computers for a variety of tasks. There was a significant difference between the EAs and MF in use of computers for classroom management. MF had a greater tendency to use computers for classroom management than EAs.

Over 40% of EAs indicated that they began using computers as undergraduates. Over 10% began using computers as graduate students, while over 25% began using computers as new faculty members. In contrast, less than 5% of MF began using computers as undergraduates. Most MF began using computers as graduate students, new faculty, and experienced faculty.

EAs and MF share similar patterns of computer ownership. Both EAs and MF began purchasing computers for home or personal use in the 1980s. MF said that they began purchasing their first computers for professional use in 1980. While some EAs made purchases around that time, most purchased their first computers for professional use in the 1990s and beyond. Since purchasing their first computers, EAs have owned one to six computers. Some MF indicated ownership of seven to 17 machines.

EAs and MF also have similar levels of access to and usage of computers. When asked whether they had exclusive access to a computer for professional use, over 60% of EAs and MF said yes. About 70% of EAs and MFs also said that they had convenient access to computers, software, and needed equipment for teaching tasks.

Implications

Given these findings, the research group believes that the Loyola Schools' faculty adoption of technology is still limited to the support of traditional teaching approaches. The prevalent use of productivity tools implies a use of technology to automate traditional learning activities such as the preparation of reports and presentations. This implication is further substantiated by the rare usage of non-traditional or more student-centered teaching tools such as tutorials, simulations, and drills.

With regards to the characteristics between EAs and MFs, the researchers believe that computer usage is related to the subjects' disciplines. In other words, a faculty member is more likely to be an early adopter if his or her subject of expertise naturally lends itself to the use of technology. This is consistent with the absence of EAs in the School of Humanities faculty and its predominance in the School of Science and Engineering.

The group has two hypotheses to account for EAs' and MFs' computer ownership patterns. The group suspects that EAs have a tendency to maximize the usage of their computers before replacing them. Therefore, they do not purchase new computers as often as MFs. The group also suspect that EAs have access to more advanced computers in their workplace, reducing the need for personal purchases. Further studies may uncover evidence to support or refute these hypotheses.

Reference List

Cuban, L. (2001). *Oversold and Underused: Computers in the Classroom*. Cambridge, Massachusetts: Harvard University Press.

Jacobsen, D. M. (2000). Examining technology adoption patterns by faculty in higher education. *Proceedings of ACEC2000: Learning Technologies, Teaching and the Future of Schools*, July 6-9,2000, Melbourne, Australia.

Rogers, E. M. (1995). *Diffusion of Innovations* (4th Ed.). New York: The Free Press.