The Efficient Use Of Technology
In The Business Curriculum:
A Survey Of AACSB Member Deans

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Abstract

This paper examines the use of technology in the business curriculum and classroom. A survey of AACSB member deans and information technology directors was conducted to ascertain amount of technology use (e.g., use of computers and data analysis packages, securities markets and trading room analyses) and to examine the perceived effectiveness in overall improvement in student learning and communication skills. This paper also examines the extent of use of the Internet to complement traditional course delivery.

Introduction

With increasing budget constraints and the shortage of academically qualified faculty, business schools are faced with the challenge of using technology to adequately prepare students, to use faculty resources most effectively, and to meet the expectations of businesses. Morrison (1998) identified three converging forces driving the changes in higher education: 1) new technologies, such as the Internet and wireless technology; 2) more informed consumers; and 3) new geographic markets emerging from developing countries. Market place dynamics are forcing business schools administrators to re-examine their strategies and structures, as well as the actual processes they employ to deliver quality education. Technology as a major agent of change is apparent in the offering of many on-line courses by institutions (Kwartler, 1997), Virtual universities exist and will continue to change the way courses are taught (Chronicle of Higher Education, Almanac Issue, 2003-2004). Students can elect to take shorter-term courses rather than semester-long ones, and they can earn a degree from a home institution by taking on-line courses from other universities. An example of this is the Web-MBA available as a collaborative program of five AACSB-accredited universities in Georgia. This is quite an opportunity for business schools, as many of the students are non-traditional, with 9 to 5 jobs and family responsibilities. Using on-line instruction, business schools can deliver programs to a larger and more diverse student population. Distance learning increased from 93 colleges and universities in 1993 to 762 colleges and universities in 1997 (Gubernick and Ebeling, 1997), and the number is certainly higher today. Thus technology has already changed and continues to change the way business schools acquire, create, and disseminate knowledge. According to recent statistics, U.S. universities currently offer over 54,000 courses online with enrollment of over 1.6 million students (Sistek-Chandler, 2000). Web-based learning environment also have a positive impact on student social interaction, involvement with course content, technical skills, and overall learning experience (Driver, 2002). However, distance education courses present some unique problems with the learning environment. Students reported problems with the reliability of technology, student technological competence, and technical supports provided by institutions. Problems also exist with student access to needed course materials and communication between teachers and students. Both students and faculty need training on the use of technology in teaching and learning (Perreault, 2002). Keeping up with technology is a major challenge for educators (Schank, 2000).

Clearly, knowledge and use of technology is necessary for today's businesses schools. This paper is designed to examine the extent and types of technology use in AACSB member schools across the country, as well as the perceived effectiveness of technology in improving student communication skills and overall learning.

Method

An on-line survey instrument was developed which asked questions about the availability of different technologies, requirements for their use, and the perceived effectiveness of their use in teaching and learning. The questionnaire was sent to 800 deans and information technology directors listed with AACSB International. Of those, 99 were completed and usable - a response rate of 12.38%. These respondents indicated a high level of interest in the research and the findings.

Findings

More than 60% of the 94 respondents to this question were from public institutions. Enrollment of business programs range from 0 to 8,300 with a median of 1,200 at the undergraduate level, and a range from 0 to 3,000 with a median of 250 at the graduate (MBA level).

Type of Institution:

	Response Total	*Percent*
Public	57	60.6%
Private	37	39.4%

Enrollment:

Enrollment	*Undergraduate*	*Graduate*
Minimum	0	0
Maximum	8,300	3,000
Mean	1,775	389
Median	1,200	250

Adequate Use of Technology:

The results show that approximately 92% of the respondents indicate adequate or better than adequate technology at the undergraduate level and more than 95 percent at the graduate level.

Program	*Extremely adequate*	*More than adequate*	*Adequate*	*Less than adequate*	*Poor*
Undergraduate programs	25.0%	34.4%	32.3%	7.3%	1.0%
Graduate programs	28.9%	32.5%	33.7%	3.6%	1.2%

Adequate Technology define:

	Response Total	Percent
VCR/DVD and overhead projector	1	1.0%
VCR/DVD computer and overhead projector	5	5.1%
VCR/DVD computer and installed electronic projector	34	34.3%
VCR/DVD computer installed electronic projector and document camera	22	22.2%
VCR/DVD computer installed electronic projector document camera and smart board	9	9.1%
VCR/DVD computer installed electronic projector document camera smart board and wireless Internet	18	18.2%
Other (please specify)	10	10.1%
Total Respondents	99	100.0%

Other specified:

OHP in all rooms, VCR, installed VDP/monitor in most that we use

VCR/DVD, computer, electronic projector, wireless Internet, patch panel in instructor station

VCR/DVD, computer, installed projector, doc. camera and wired internet link and in some cases also wireless

VCR/DVD, computer, installed electronic projector, smart board, and wireless Internet

VCR, projector, doc. camera, & ports for all students

Last one minus smart board

VCR/DVD, computer (with internet access), installed electronic projector, document camera

No. 6 above minus smart board

"F" above w/o smart board, every classroom has this

VCR/DVD, computer or network port for laptop, installed electronic projector

Do you require students to own/lease laptops or microcomputers?

The majority of respondents indicated that the ownership or lease of laptop and microcomputer in their business schools is not required.

Level	Yes	No	Response Total
Undergraduate	9.5%	90.5%	100.0%
MBA	14.3%	85.7%	100.0%

How effective is the use of laptops/microcomputers in improving students' learning?

The use of laptops and microcomputers has been effective in improving student learning at both graduate and undergraduate levels.

	Extremely effective	Effective	Neutral	Ineffective	Extremely effective	N/A
Undergraduate students	15.6%	61.5%	12.5%	1.0%	0.0%	9.4%
MBA students	17.0%	61.4%	11.4%	1.1%	0.0%	9.1%

Student ownership of PDAs

Only small percent of students own PDAs. Less than 14 percent of the undergraduate students own PDAs, while more than 26 percent of graduate students own PDAs. The table below shows ownership of PDAs at the institutions respondents to this survey.

	Percent Ownership	
	Undergraduate	Graduate
Minimum	0.0%	0.0%
Maximum	65.0%	95.0%
Mean	13.8%	26.6%
Median	10.0%	20.0%

How effective is the use of Palm Pilots in improving students learning and communication skills?

The survey indicates that the use of PDAs for academic purposes has not been widespread.

	Extremely effective	Effective	Neutral	Ineffective	Extremely ineffective	N/A
Undergraduate students	0.0%	7.6%	34.8%	7.6%	1.1%	48.9%
MBA students	0.0%	5.8%	40.7%	7.0%	1.2%	45.3%

What percent of your business school faculty are using the web for classroom support?

On average, 64 percent of faculty use the web to support undergraduate instruction, while 72 percent of faculty use the web to support graduate instruction.

Does your business school have a securities markets analysis and trading laboratory?

The result show that only 20 percent of the business schools have security markets analysis and trading laboratory at this point.

	Response Total	*Percent*
Yes	20	20.2%
No	79	79.8%

How effective is the use of securities markets analysis and trading laboratory in improving students learning in finance and investment?

The experience of those institutions using securities markets analysis and trading laboratory has been extremely good in improving student learning in finance and investment.

	Extremely effective	*Effective*	*Neutral*	*Ineffective*	*Extremely ineffective*
Undergraduate students	42.3%	53.8%	3.8%	0.0%	0.0%
MBA students	40.7%	59.3%	0.0%	0.0%	0.0%

Does your business school have a technology incubator?

Most business schools do not have own technology incubators at this point. However, the experience of those schools with technology incubators in improving student learning has been somewhat successful.

	Response	*Percent*
Yes	14	14.6%
No	82	85.4%

How effective is the technology incubator in improving students learning?

	Extremely effective	*Effective*	*Neutral*	*Ineffective*	*Extremely ineffective*
Undergraduate students	4.8%	57.1%	38.1%	0.0%	0.0%
MBA students	9.5%	61.9%	28.6%	0.0%	0.0%

Effectiveness of each of the following in improving students learning and communication skills

Approximately 50 percent of respondents indicated that wireless technology has been effective to extremely effective in improving student learning and communication skills, while more than 93 percent of respondents indicated that internet sources has been effective to extremely effective in improving student learning and communication skills. The results are summarized below.

	Extremely effective	Effective	Neutral	Ineffective	Extremely ineffective	Don't know (N/A)
Wireless technology	10.1%	39.4%	23.2%	1.0%	0.0%	26.3%
E-mail	29.3%	54.5%	8.1%	6.1%	0.0%	2.0%
Chatting	10.1%	39.4%	30.3%	9.1%	1.0%	10.1%
Webtutor	4.1%	47.4%	13.4%	3.1%	0.0%	32.0%
E-lecture	7.1%	47.5%	18.2%	4.0%	0.0%	23.2%
Virtual library	21.4%	59.2%	9.2%	0.0%	0.0%	10.2%
Web Technology	36.1%	51.5%	6.2%	0.0%	0.0%	6.2%
Internet resources	42.9%	51.0%	3.1%	1.0%	0.0%	2.0%
Online simulation tools	18.2%	50.5%	11.1%	0.0%	0.0%	20.2%
Online Review tests	7.1%	58.6%	16.2%	2.0%	0.0%	16.2%

Offering of on-line programs

      While a small number of business schools offer online programs, a large number of them offer courses to support their programs.

	Yes	No
Undergraduate	20.0%	80.0%
MBA program	23.3%	76.7%

	Yes	No
Undergraduate	61.0%	39.0%
MBA	50.0%	50.0%

Use of WebCT by Faculty

      Majority of business faculty use WebCT in teaching both graduate and undergraduate courses.

	Response	Percent
Undergraduate courses	94	97.9%
MBA courses	83	86.5%

If the faculty in your business school use the Web for classroom support how effective is it in improving students learning?

      More than 93 percent of faculty using WebCT indicated the tool is effective to extremely effective in improving student learning.

	Extremely effective	Effective	Neutral	Ineffective	Extremely ineffective
Undergraduate students	19.3%	73.9%	6.8%	0.0%	0.0%
MBA students	21.1%	72.4%	6.6%	0.0%	0.0%

Conclusion

      The results of this survey indicate that the use of technology has been effective in improving student learning and communication skills. The experiences of those business schools using different technologies have been positive. It is expected that the use of technology will continue expand and improve as business schools search for ways to position themselves to meet future demand by both industries and students. 📖

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Notes