

Instructional Technology: Who is Using What and Where?

AACP Special Interest Group for Technology in
Pharmacy Education and Learning



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Overview

- Introduction and significance of the project
- Previous data
- SIG Project and results
- Emerging educational technologies and applicability to pharmacy education

TiPEL SIG Goal

- A goal of the SIG is to help its member institutions develop and integrate educational technologies that positively impact teaching, learning and assessment
- Baseline data of the technologies utilized by institutions is needed

**Council of Ohio Colleges of
Pharmacy Technology Survey**

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Computerized Educational Resources

- Study conducted in 2008
- Six member colleges participated
 - 4 established colleges
 - 2 new institutions (first or second professional years enrolled)
- Results shared among colleges for discussion

Computers

- Required by the 2 new colleges
 - Not provided to students
- Most require Microsoft operating system and software

PDA / Smartphone

- Required by 2 colleges
 - 1 required a Palm operating system
 - 1 required ability to support Lexi-Comp
- A variety of references were made available to students for use on the devices

Other Technologies

- Email
 - 50% Outlook running on Exchange
- Student response systems
 - 4 – TurningPoint Technologies
- Lecture capture
 - 6 colleges using lecture capture
- ePortfolios
 - 2 – RxPortfolio
 - 2 – other products

Other Technologies

- Instructional design
 - 3 colleges used instructional designers
- Sharing learning materials
 - 5 colleges willing to share materials
- Learning Management Systems
 - All colleges had learning management systems
 - 50% - BlackBoard
 - Remainder SAKAI, WebCT, Desire2Learn
 - Primarily used for hybrid courses

Rarely Used Technologies

- Wikis
- Blogs (1 school experimenting slightly)
- Social Software
- Massive Multiuser Online Role-Playing
- YouTube

The Need...

- Limited data that provided information to the programs in Ohio only
- Need data that represents the national state of educational technology in the *Academy*
- A list of contact persons at each institution to discuss experience with particular educational technology

The Survey Says...

Michael S. Monaghan, Pharm.D., BCPS
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Purpose

- Develop a database of educational technologies currently used at schools or colleges pharmacy
- Identify an individual at each institution who could serve as an informational resource for peer-to-peer questions regarding the technology employed and the experience with the software and/or hardware to date
- Online, searchable database

Methods

- A cross-sectional survey design to determine what educational technologies are currently being used at pharmacy programs
 - Identify contact individuals

The Survey Instrument

- Consists of 44 items and was developed specifically for this study
- Table of specifications (Table 1) was used to define the domains and the respective item sampling process
- Domains were software use for instruction, hardware use for instruction, software use for communication, technology requirements for rotations, technology support, and a miscellaneous domain composed of unrelated questions
- Organized in such a way as to solicit, when applicable, whether the software and/or hardware were the primary system used at the institution or simply one of the technologies in use

Domain	Example(s)	Survey Item(s)
Contact information for technology questions at the institution	Name of institution, contact person's name, email, etc.	1
Software use for instruction		
Course management	Blackboard, Angel	2
Classroom capture	Echo 360, Adobe	3
Lecture capture	Tegrity Campus 2.0	4
Aggregator for audio/video files	iTunes	5
Web conferencing	Adobe	6-8
Audience response systems	iClicker	9
Electronic testing	QuestionMark	10,11
Blogging / Micro-blogging tools	Blogger, Twitter	12,13
Document collaboration	GoogleDocs	14
Virtual environment	SecondLife	15
Wiki tool	Wikispaces	16
Presentation tool(s)	PowerPoint	17
ePortfolio tool(s)	RXportfolios	18
Electronic mail	Exchange	20-22
Hardware use for instruction		
Presentation tool(s)	Symposium	19
Required computer use	Computer requirement for enrollment, specific type of computer (laptop vs. tablet), PC vs. Mac, required software installed	23-27
Software use for communication		
Social media	Facebook	28
Social video/photo sharing	YouTube	29
Rotation requirements		
Self- and preceptor assessment	RXpreceptor	30
Personal digital assistant	iTouch	31-33
Technology support	Personnel separate from the University, source of financial support, etc.	34-38
Miscellaneous	Cell phone use prohibited, student misuse of technology, plagiarism checking software, etc.	39-44

The Survey Instrument

- Piloted with a purposive sample of four educators with experience in survey development and educational technology
 - Test the adequacy of the instrument to meet the stated goals and improve the internal validity of the survey
 - Feedback identifying ambiguities and difficult questions; record the time taken to complete the survey; assess whether each question gave an adequate range of responses
- Modified survey based on feedback

Methods

- Distributed to a convenience sample of 118 pharmacy programs deemed to be at a level of development sufficient to have employed educational technology
- Surveys were disseminated electronically
- Descriptive analyses were conducted on the data

Results

- Ninety-six of the 118 surveys were returned (81.4%)
- And now, the survey says...

Software for Instruction

	# Responses	% Overall
Course Management		
<i>Is any system used?</i>	96 (yes)	100
Blackboard	59	61.5
Moodle	12	12.5
Angel	5	5.2
Other (i.e., Desire2Learn, Web CT)	20	20.8

Software for Instruction

Classroom Capture		# Responses	% Overall
Is a system used?		65 (yes)	67.7
Camtasia	In use	13	13.5
	Primary	5	
Elluminate	In use	13	13.5
	Primary	2	
Mediasite	In use	11	11.5
	Primary	8	
Echo 360	In use	10	10.4
	Primary	8	
Adobe Presenter	In use	9	9.4
	Primary	1	
Panopto	In use	6	6.3
	Primary	6	
Tegrity Campus 2.0	In use	3	3.1
	Primary	3	
Access to other systems (e.g., mediaPOINTE, Procast)		15	

		# Responses	% Overall
Lecture capture outside of classroom?			
Is any system used?		58 (yes)	60.4
Camtasia	In use	25	26.0
	Primary	9	
Adobe Presenter	In use	10	10.4
	Primary	3	
Elluminate	In use	12	12.5
	Primary	3	
Panopto	In use	6	6.3
	Primary	4	
Echo 360	In use	4	4.2
	Primary	2	
Tegrity Campus 2.0	In use	1	1.0
	Primary	1	
Access to other systems (i.e., Procast)		8	

Software for Instruction

		# Responses	% Overall
iTunes use for lecture audio and/or video			
Is iTunes used?		26 (yes)	27.1
Yes, audio and video		16	16.7
Yes, audio only		10	10.4
No, use some other system		13	13.5
No		57	59.4

Software for Instruction

		# Responses	% Overall
Audience Response			
<i>Is some system used?</i>		81 (yes)	84.4
TurningPoint	In use	52	54.2
	Primary	47	
iClicker	In use	15	15.6
	Primary	8	
eInstruction	In use	6	6.3
	Primary	8	
Quizdom	In use	1	1.0
	Primary	1	
Other (i.e., Interwrite PRS)	In use	7	7.3
	Primary	5	

Software for Instruction

		# Responses	% Overall
Electronic testing			
<i>Is some system used?</i>		81 (yes)	84.4
Blackboard	In use	38	39.6
	Primary	35	
Respondus	In use	17	17.7
	Primary	8	
QuestionMark	In use	5	5.2
	Primary	5	
ExamSoft	In use	2	2.1
	Primary	1	
Other (i.e., Angel, Desire2Learn)	In use	19	19.8
	Primary	10	

Software for Instruction

		# Responses	% Overall
Secure Browser for test taking?			
Yes		26	27.1
No		58	60.4
I don't know		12	12.5

		# Responses	% Overall
Blogging Tool			
<i>Is some system used?</i>		56 (Yes)	58.4
Blackboard	In use	31	32.3
	Primary	20	
Blogger	In use	9	9.4
	Primary	5	
WordPress	In use	7	7.3
	Primary	3	
Other (i.e., Blogspot, Desire2Learn)	In use	2	2.1
	Primary	1	
Microblogging Tool			
<i>Is some system used?</i>		26 (Yes)	27.1
Twitter	In use	23	24.0
	Primary	20	
Yammer	In use	1	1.0
	Primary	0	
Other ("Not sure")	In use	2	2.1
	Primary	1	

Software for Instruction

		# Responses	% Overall
Document Collaboration			
<i>Is some system used?</i>		76 (Yes)	79.2
Google Docs	In use	45	46.9
	Primary	23	
Microsoft SharePoint	In use	14	14.6
	Primary	8	
Microsoft Live	In use	5	5.2
	Primary	3	
Google Wave	In use	2	2.1
	Primary	0	
Other (i.e., Xythes)	In use	10	10.4
	Primary	6	

Software for Instruction

		# Responses	% Overall
Virtual World			
<i>Is some system used?</i>		9 (Yes)	9.4
Second Life	In use	9	9.4
	Primary	3	

Software for Instruction

		# Responses	% Overall
Wiki Tools			
<i>Is some system used?</i>		68 (Yes)	70.8
Blackboard	In use	30	31.3
	Primary	18	
Wikipedia	In use	12	12.5
	Primary	2	
Wikispaces	In use	8	8.3
	Primary	2	
PB Wiki	In use	6	6.3
	Primary	3	
Other (i.e., Moodle)	In use	12	12.5
	Primary	6	

Software for Instruction

		# Responses	% Overall
Presentation Tools			
<i>Is some system used?</i>		95 (Yes)	99.0
PowerPoint	In use	82	85.4
	Primary	76	
Google Apps	In use	14	14.6
	Primary	0	
Slideshare.net	In use	5	5.2
	Primary	0	
Other (i.e., Keynote)	In use	6	6.3
	Primary	0	

		# Responses	% Overall
ePortfolio Tools			
<i>Is some system used?</i>		92 (Yes)	95.8
eValue	In use	29	30.2
	Primary	26	
RXportfolios	In use	16	16.7
	Primary	13	
Blackboard	In use	11	11.5
	Primary	5	
LiveText	In use	8	8.3
	Primary	3	
TaskStream	In use	6	6.3
	Primary	4	
Desire2Learn	In use	4	4.2
	Primary	0	
Angel	In use	2	2.1
	Primary	1	
Other (i.e., e-Folio)	In use	16	16.7
	Primary	8	

Software for Instruction

e-mail system managed and supported for student use		# Responses	% Overall
Is some system used?		94 (yes)	97.9
Exchange	In use	31	32.3
	Primary	30	
Google	In use	23	24.0
	Primary	17	
Windows live	In use	5	5.2
	Primary	4	
Zimbra	In use	4	4.2
	Primary	3	
GroupWise	In use	3	3.1
	Primary	3	
Hotmail	In use	1	1.0
	Primary	0	
Other (i.e., University hosted system)	In use	23	24.0
	Primary	8	

Are students required to use this system?

Yes	85	88.5
No	9	9.4
Don't know	2	2.1

Software for Instruction

e-mail system managed and supported for faculty use		# Responses	% Overall
Is a system used?		94 (yes)	97.9
Exchange	In use	42	43.8
	Primary	41	
Google	In use	18	18.8
	Primary	9	
Windows Live	In use	7	7.3
	Primary	5	
Zimbra	In use	4	4.2
	Primary	3	
GroupWise	In use	3	3.1
	Primary	3	
Hotmail	In use	1	1.0
	Primary	0	
Other (e.g., FirstClass)	In use	24	25.0
	Primary	10	

Hardware for Instruction

	# Responses	% Overall
Student Computer Required?		
Yes	53	55.2
No	43	44.8
Specific computer or laptop required?		
Yes	28	29.2
No	67	69.8
Don't know	1	1.0

Hardware for Instruction

Which type(s) of computer satisfies requirement?	# Responses	% Overall
Laptop PC	40	41.7
Tablet PC	33	34.4
Netbook PC	19	19.8
MacBook	29	30.2
Desktop PC	9	9.4
Desktop Mac	8	8.3
Not applicable	35	36.5

Hardware for Instruction

If computer required, does the program supply them?	# Responses	% Overall
Yes, cost built into tuition	13	13.5
Yes, Students leas them with own funds	2	2.1
Yes, students purchase computer with their own funds	5	5.2
No	31	32.3
I don't know	7	7.3
Not applicable	38	39.6

Hardware for Instruction

Do you require specific software on these computers? (e.g., Microsoft office, adobe reader, Respondus LockDown)		
Yes	45	46.9
No	20	20.8
I don't know	2	2.1
Not applicable	29	30.2

Hardware for Instruction

		# Responses	% Overall
Is a system used?		69 (yes)	71.9%
SMART Board	In use	30	31.3
	Primary	12	
Tablet PCs	In use	27	28.1
	Primary	13	
Symposium	In use	22	22.9
	Primary	20	
Electronic white board	In use	9	9.4
	Primary	0	
Wacom Tablet	In use	6	6.3
	Primary	3	
Other (e.g., Document Camera, QUOMO)	In use	7	7.3%
	Primary	1	

Social Media for Communication with Students

		# Responses	% Overall
Is a system used?		45 (yes)	46.9
Facebook	In use	37	38.5
	Primary	19	
	Required	0	
Twitter	In use	23	24.0
	Primary	2	
	Required	1*	
MySpace	In use	6	6.3
	Primary	1	
	Required	0	
LinkedIn	In use	5	5.2
	Primary	0	
	Required	0	

Technology Support

	# Responses	% Overall
<i>Program has a separate IT unit/personnel from the institution's central unit</i>		
Yes	57	59.4
No	37	38.5
I don't know	2	2.1
<i>Number of FTEs</i>		
Range	1-13	
Mode Response	1	

Technology Support

<i>If program has its own IT unit, what functions are covered?</i>	# Responses	% Overall
Computer Hardware/Software support	58	60.4
Server Support	42	43.8
Website creation and support	39	40.6
Application development	29	30.2
Helping in classroom	49	51.0
Support for instructional technology	46	47.9
Audio/Video Support	30	31.3
Instructional design	22	22.9
Technology training	42	43.8
Other (e.g., support for online testing, data backup)	6	6.3

Technology Support

<i>Source of revenue for new IT</i>	# Responses	% Overall
Student technology fees	46	47.9
Institution budget line	44	45.8
School/Department budgets	67	69.8
Faculty funded	7	7.3
Institution pays for all	10	10.4
Other (e.g., donations, grant funding)	7	7.3

Technology Support

Source of Technology Maintenance Revenue	# Responses	% Overall
Student Technology fees	35	39.6
Institution budget line	40	41.7
School/department budgets	62	64.6
Institution pays for all	10	10.4
Other (i.e. shared with other health science units)	3	3.1

Miscellaneous

	# Responses	% Overall
Cell phone use prohibited during class		
Yes, by institutional policy	7	7.5
Yes, by program policy	22	22.9
Sometimes, its up to the instructor	56	58.3
No	8	8.6
I don't know	3	3.1
Have you had significant problems with students using technology for non-academic activities while in class or on rotations?		
Yes	56	58.3
No	37	38.5
I don't know	3	3.1
Do you use plagiarism checking software? (e.g., SafeAssign, Turnitin)		
Yes	55	57.3
No	37	38.5
I don't know	4	4.2

Summary

Software
Course management: 100%; Blackboard and Moodle
Classroom capture: 68%; Camtasia and Elluminate
Lecture capture: 60%; Camtasia and Adobe Presenter
iTunes: 27%
Web conferencing: 100%; Skype and Adobe Connect Pro
Audience response systems: 84%; TurningPoint and iClicker
Electronic testing: 84%; Blackboard and Respondus
Blogging: 58%; microblogging 27%
Virtual environments: 9%; Second Life
Wiki tools: 71%; Blackboard and Wikipedia
Presentation tools: ~ 100%; PowerPoint and Google Apps
ePortfolios: 96%; eValue and RXportfolios
Electronic mail: ~ 100%; Microsoft Outlook/Exchange; Google

Summary

Hardware

Required computers: 55%; 70% PC
Presentation hardware: 72%; SMART Board and Tablet PC

Social Media

Social media for communication: 47%; Facebook and Twitter
Social media for video/photo: 56%; YouTube and Flickr

Summary

Rotation Requirements

Software: 60%; eValue and EMS
PDA's required: 14%; iTouch

Technology Support

Separate IT unit: 60%; most paid for by student fees

To Do...

- Develop an online, searchable database
 - Search by type of software / hardware
 - Search by product
 - Search by program
 - Contact name provided

Emerging Technologies in Doctor of
Pharmacy Education: *Demonstrations*

- iTunes U
- Student created video / video sharing
- Digital Ink
- Social Networking
