

Student and Faculty Perceptions of ICT Use in Undergraduate Courses

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Overview

- What did we do?
- Why did we do it?
- What did we find?
- What does it mean?
- What do you think?

But first – a Quiz!!!

- Think of a ***specific*** course you teach
- For that course, rank the **frequency** (1= “Most often” and 7 = “Least often”) and the **extent** (1 = “Never” and 5 = “Always”) which you require students to complete tasks in the following areas:

Rank	ICT Task Area	Extent
_____	Word processing	_____
_____	E-mail	_____
_____	Internet	_____
_____	Spreadsheet	_____
_____	Database	_____
_____	Computer graphics	_____
_____	Miscellaneous	_____

What did we do? (Methods)

We surveyed:

Faculty

- Teaching faculty (Spring 2010)
 - Taught course(s) in fall 2009
 - Selected by specific course
 - $N = 84/64$; $n = 57$; 89%

Students

- Enrolled in 12 upper-division courses (Spring 2012)
 - Stratified (by department) random sample
 - $N = 398^*$; $n = 235$; 59.0%
- *Duplicated enrollment

What did we do? (Methods)

Survey Instrument*

Faculty (course specific)

- Part I: Required ICT use ($r = .95$)
 - 48 specific tasks
 - Grouped into 7 areas
 - “Yes” / “No” response option
- Part II: Demographics

Face and content validity determined by a panel of experts in agriculture and computer applications

Students (overall)

- Part I: Required ICT use ($r = .65$)
 - 48 specific tasks
 - Grouped into 7 areas
 - Likert-type response option:
 - 1 = Never
 - 2 = Rarely
 - 3 = Sometimes
 - 4 = Very often
 - 5 = Always
- Part II: Demographics

*Based on: Davis, 1997; Monk et al., 1994; Cox et al., 2011

Why did we do it? (Background)

- ICT skills are very important to career success
 - Grant et al., 2009; Levy & Murnane, 2004; Stone & Madigan, 2007)
- “Despite huge efforts to position [ICT] as a central tenet of university education, . . . many students and faculty make only limited formal academic use . . . in teaching and learning” (Selwyn, 2007, p. 84).

Why did we do it? (Background)

- ICT skills needed by agriculture graduates (Alston et al., 2009; Graham, 2001)

Very Important	Somewhat Important
<ul style="list-style-type: none">• Spreadsheets• Word processing• Internet• Accounting Systems• Presentation graphics	<ul style="list-style-type: none">• Databases• CAD

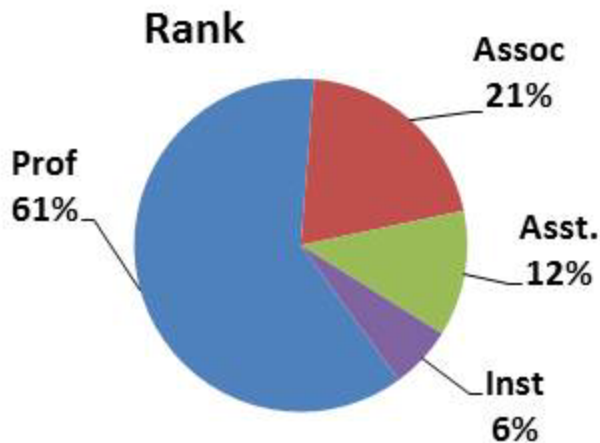
- Michigan State University agriculture graduates:
 - Courses prepared them well in technical areas
 - Not very well in ICT use
 - (Sherestha, 2009)

Why did we do it? (Objective)

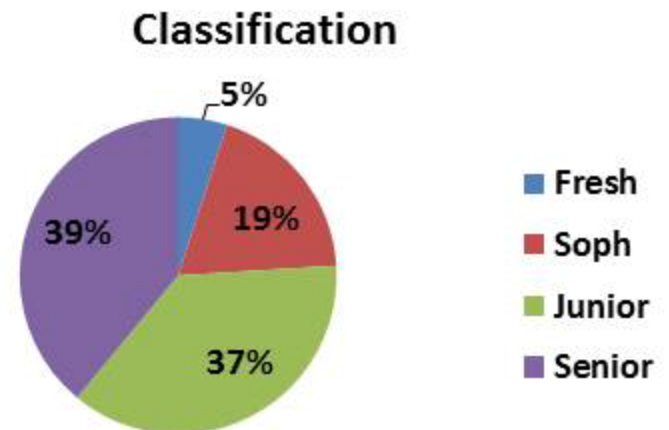
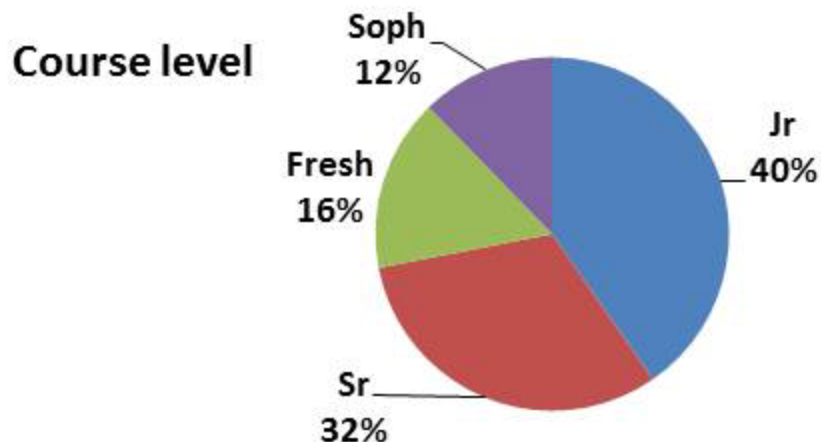
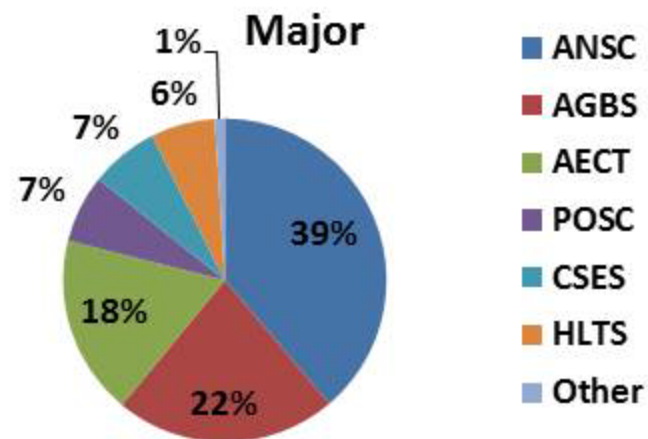
- Compare faculty and student perceptions of required ICT use in undergraduate agriculture courses.

What did we find? (Results)

Faculty Demographics ($n = 57$)

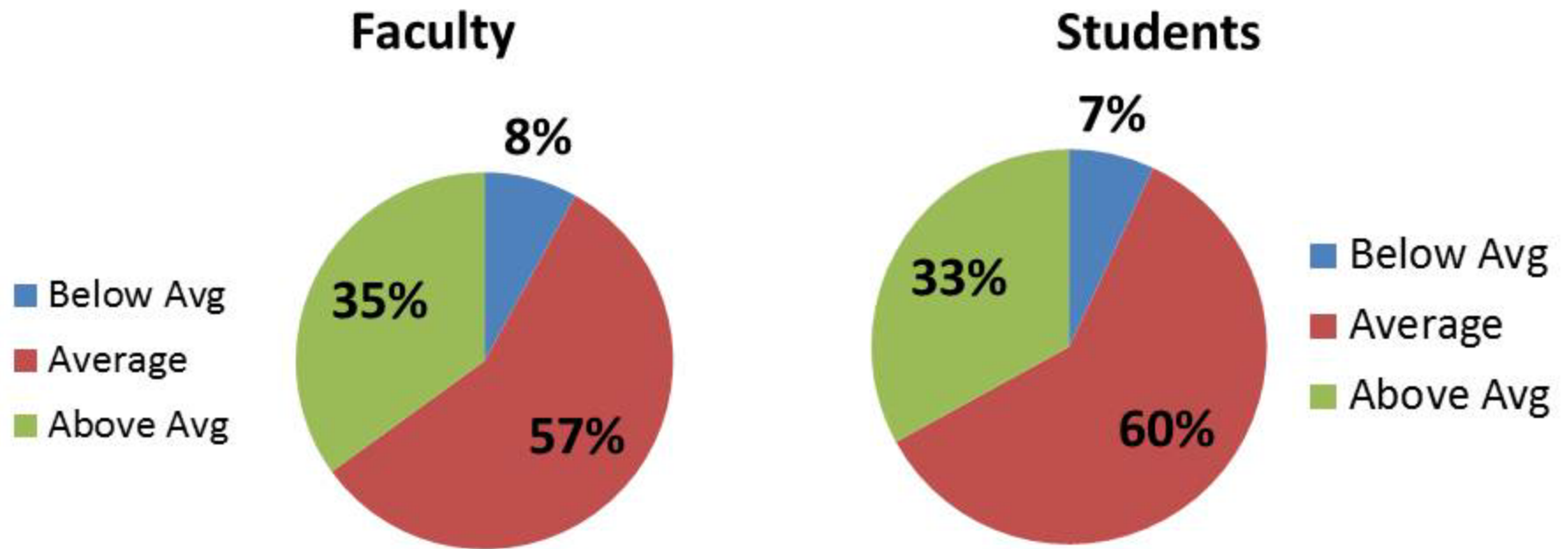


Student Demographics ($n = 235$)



What did we find? (Results)

Self-Perceived ICT Skills



What did we find? (Results)

Required ICT Tasks by Area

ICT Area (# items)	Faculty		Students		
	M ¹	SD	M ²	SD	Descriptor ³
Internet (10)	2.47	1.89	2.92	0.65	Sometimes
E-mail (5)	2.23	1.27	3.94	0.70	Very often
Spreadsheets (10)	1.42	2.50	2.29	0.91	Rarely
Word processing (5)	1.07	1.12	2.69	0.95	Rarely - Sometimes
Computer graphics (5)	0.53	0.78	2.17	0.81	Rarely
Miscellaneous (7)	0.42	0.71	1.44	0.50	Never – Rarely
Databases (6)	0.14	0.52	1.68	0.79	Never - Rarely

¹ Mean number of tasks required per course.

² Mean of all items in ICT area (based on a 1 – 5 scale where 1 = “Never” and 5 = “Always.”)

³ Interpretation of the student mean based on scale descriptors.

$$r_{\text{Spearman}} = .89$$

What did we find? (Results)

Five Most Frequently Required ICT Tasks

ICT Task	Faculty		Students	
	Rank	% ¹	Rank	% ²
Receive e-mail from your instructor	1	80.7%	1	96.2%
Use Blackboard® to acquire course info.	5	54.4%	2	86.8%
Send e-mail to your instructor	2	73.7%	3	86.4%
Search the internet for specific information	3	64.9%	4	78.7%
Submit assignments as e-mail attachments	4	57.9%	5	62.1%

¹Percent of faculty requiring task in specific course

²Percent of students indicating task required “Very often” or “Always.”

$$r_{\text{Spearman}} = .40$$

What did we find? (Results)

Six Least Frequently Required ICT Tasks

According to Faculty

ICT Task	% ¹
Do database programming	0.0
Use Quicken©	1.8
Use file transfer software	1.8
Create spreadsheet PivotTables	1.8
Create a spreadsheet macro	1.8
Use publication layout software	1.8

¹% of courses requiring task

According to Students

ICT Task	% ²
Write a SAS© program	97.0
Use simulation program	94.9
Use Quicken©	88.9
Participate in threaded discussion	88.9
Create spreadsheet PivotTable	88.5
Do database programming	88.5

²% indicating task required "Never" or "Rarely"

What does it mean?

(Conclusions and Recommendations)

- Undergraduate agriculture courses require a limited number of fairly low-level ICT tasks
- Required ICT tasks tend to facilitate routine class transactions
- ICT tasks that extend the classroom or subject matter are required less frequently
- Students and faculty largely agree about the type and extent of ICT tasks required

What does it mean?

(Conclusions and Recommendations)

- Undergraduate agriculture courses may not provide graduates with high-level ICT skills
- Faculty should be encouraged to increase ICT use (as appropriate)
- Effective ICT users should be showcased as models
- An “ICT-intensive” course requirement should be considered

Get those Quizzes out!

It's Quiz Grading Time!!!

Quiz Grading Time!!!

Rank¹	ICT Task Area	Extent²
<u>4</u>	Word processing	Rarely or Sometimes
<u>2</u>	E-mail	Very often
<u>1</u>	Internet	Sometimes
<u>3</u>	Spreadsheet	Rarely
<u>7</u>	Database	Never or Rarely
<u>5</u>	Computer graphics	Rarely
<u>6</u>	Miscellaneous	Never or Rarely

¹Based on faculty responses

²Based on student responses

What do you think?

(Questions, Comments, Discussion)

Thank-You!!!