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Students and Academic-oriented Technology: a Longitudinal Study

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WESTERN EDUCATIONAL LONGITUDINAL STUDY (WELS) REPORT SERIES

STUDENTS AND ACADEMIC-ORIENTED TECHNOLOGY: A LONGITUDINAL STUDY

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INTRODUCTION

This report presents Western Educational Longitudinal Study (WELS) survey data focusing on student use of email and comfort level with academic-oriented technology. Two data sets were used: 1) the end of the first year follow-up administered in the spring, 2004; and 2) the end of the sophomore year follow-up, administered in the spring, 2005. (For a more complete historical summary of the WELS project, please reference "A note on the WELS" on page seven.) Each survey was administered to a representative sample identified from the original WELS cohort of 1580 participants, who took the WELS as first-time, in-coming students in the summer, 2003. Although the resultant participants of each spring survey were not always the same students, both samples were representative of the original cohort. The spring, 2004, survey had 628 respondents answering questions related to academic technologies; the spring, 2005, survey had 421 respondents answering questions related to academic techologies. Please note, however, that not all respondents answered every question; thus there are minor variations in the actual frequencies per response.

The report begins with an inquiry into email practices as related to their importance and use as an academic support activity, then expands its focus to include the use of and comfort levels with computers and the internet as academic activities, and use of and comfort level with library databases. Also noted are use and comfort levels with certain activities closely associated with academic technolgies, including creating documents, citing resources, and avoiding plagarism.

The report includes a comparison of averages, which notes changes in use and comfort level with academic-oriented technolgy that have statistical significance. Finally, some additional findings of interest are presented.
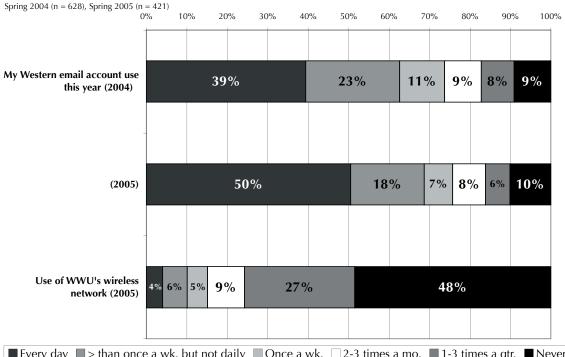
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EMAIL USE

In both spring WELS surveys (2004 and 2005), students were asked how much use they made of their *My Western* email account. Findings indicated an increase in the amount of usage for those students accessing these accounts, with daily use rising from 39% to 60% between 2004 and 2005. However, the percentage of students who chose to never access their *My Western* email account remained steady, at about 10%. As to whether this 10% were the same respondents in both surveys, only eight students who took the survey in 2004 also took the survey in 2005—too few to know with any certainty.[1] When asked if students knew Western's email policy, about half (51%) said they did not.

Survey findings also indicated that most Western students maintain a non-Western email account (85% in spring, 2004, and 81% in spring, 2005). And though it increased slightly, most students had not set up their Western account to forward to their non-Western account (16% had done so in 2004, 23% had done so in 2005).

Finally, in the spring survey of 2005 only, students were asked how much they made use of Western's wireless network; 60% of students indicated they used the network at least once during the quarter. (See Figures 1 and 2.)

Figure 1: My Western and Wireless Network Use

Spring 2004 (n = 628), Spring 2005 (n = 421)

Legend: Every day | > than once a wk. but not daily | Once a wk. | 2-3 times a mo. | 1-3 times a qtr. | Never

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[1]Remember that WELS researchers try not to survey the same students repeatedly; indeed, this was one reason for acquiring a large baseline cohort. (The other reason being to have representative samples.)

Figure 2: My Western and Email Policy
Spring 2004 (n = 627), Spring 2005 (n = 421)

Experience and Comfort with Academic Technologies

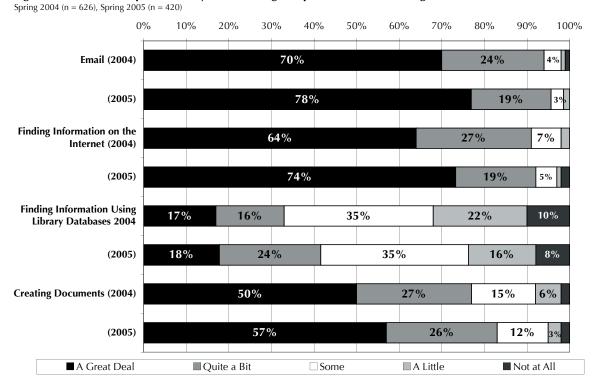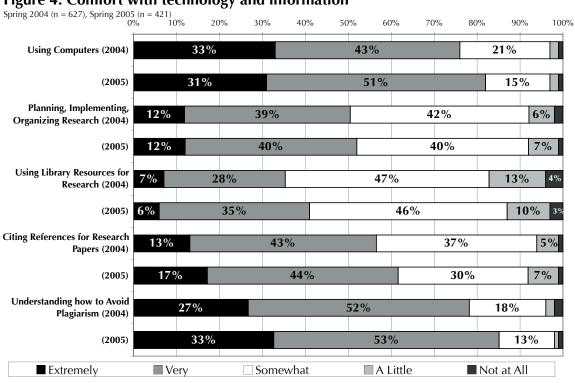In both the spring surveys (2004 and 2005), students were asked a series of questions pertaining to their experience and comfort level with various aspects of academic technology, including use of email, the internet, computers, the library, and other related issues. Generally, findings indicate that after one year Western students have increased their experience and comfort level with most academic techologies and skills. For instance, students noted solid increases of "a great deal" in their experience using email (from 70% in spring, 2004, to 78%, in spring, 2005), finding information on the Internet (from 64% to 74%), and creating documents (from 50% to 57%). A more modest increase of "a great deal" or "quite a bit" was noted for finding information using library databases (from 33% to 42%). (See Figure 3.)

Students' comfort levels also rose in some areas. For instance, when it came to using a computer, comfort levels of "extremely" or "very" increased from 76% to 82%; moreover, when it came to understanding how to avoid plagiarism, comfort levels of "extremely" or "very" increased from 79% to 86%. Yet as sophomores, this cohort of respondents may not have yet had many research assignments, and their responses to questions about research noted only modest increases in comfort levels between spring, 2004, and spring, 2005. These questions included a students comfort with planning, implementing, and organinzing research (from 51% in spring, 2004, to 52% in spring, 2005); using library resources for research (from 35% to 41%); and citing references for research paper (from 56% to 61%). (See Figure 4.)

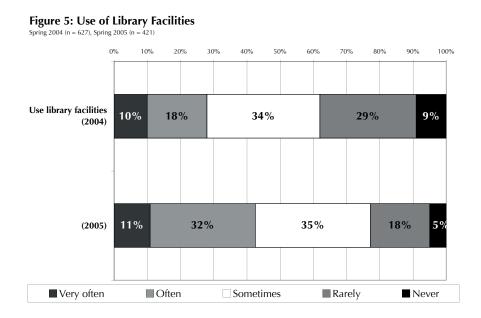**Figure 3: How much experience do you have using computers for the following…?**
Spring 2004 (n = 626), Spring 2005 (n = 420)

	A Great Deal	Quite a Bit	Some	A Little	Not at All
Email (2004)	70%	24%		4%	
(2005)	78%	19%		3%	
Finding Information on the Internet (2004)	64%	27%	7%		
(2005)	74%	19%	5%		
Finding Information Using Library Databases 2004	17%	16%	35%	22%	10%
(2005)	18%	24%	35%	16%	8%
Creating Documents (2004)	50%	27%	15%	6%	
(2005)	57%	26%	12%	3%	

Legend: ■ A Great Deal ■ Quite a Bit □ Some ■ A Little ■ Not at All

Figure 4: Comfort with technology and information
Spring 2004 (n = 627), Spring 2005 (n = 421)

	Extremely	Very	Somewhat	A Little	Not at All
Using Computers (2004)	33%	43%	21%		
(2005)	31%	51%	15%		
Planning, Implementing, Organizing Research (2004)	12%	39%	42%	6%	
(2005)	12%	40%	40%	7%	
Using Library Resources for Research (2004)	7%	28%	47%	13%	4%
(2005)	6%	35%	46%	10%	3%
Citing References for Research Papers (2004)	13%	43%	37%	5%	
(2005)	17%	44%	30%	7%	
Understanding how to Avoid Plagiarism (2004)	27%	52%	18%		
(2005)	33%	53%	13%		

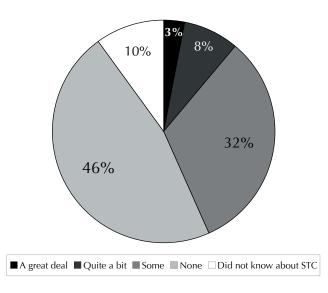Legend: ■ Extremely ■ Very □ Somewhat ■ A Little ■ Not at All

STUDENT USE OF LIBRARY FACILITIES AND THE STUDENT TECHNOLOGY CENTER

In the spring, 2004, and again in the spring, 2005, students were asked how much use they made of Western's library facilties. The percentage of students indicating they used the library "very often" or "often" increased from 28% in 2004 to 43% in 2005, while the percentage indicating they "never" used the library decreased from 9% to 5%

In the spring, 2005, only, students were asked how much use they made of Western's Student Technology Center (STC). The percentage of students indicating they used the STC at least "some" times was 43%, while 46% indicated they did not use the STC at all. About 10% of students indicated they "did not know about the STC". (See Figures 5 and 6.)

Figure 5: Use of Library Facilities
Spring 2004 (n = 627), Spring 2005 (n = 421)

Figure 6: Student Technology Center Use 2005 (n = 412)

COMPARISONS OF AVERAGES

To gain a more thorough understanding of how student use and comfort with academic technology has changed over time, WELS researchers conducted a comparison of averages study of academic technology variables from the spring surveys of 2004 and 2005.[2] Analysis revealed increases in the following:

- The number of students who set up their My Western email to forward messages to their non-Western email account (p<.001).

- Understanding how to avoid plagiarism (p<.001).

- Finding information using library databases (p=.030).

- Experience finding information on the internet (p=034).

- Comfort citing references for research papers (p=.036).

- Comfort using library resources for research (p=.039).

It's worth noting here that while there were not great increases in student comfort with issues relating to research, there is nonetheless evidence that by their sophomore year students are indeed moving in a positive direction in that area. (See Table 1 on page 8.)

ADDITIONAL FINDINGS

- As might be expected, students without a non-Western email account use their *My Western* email more often than those who do have an outside account.[3]

- Overall, males felt more comfortable using computers than females.[4] On the other hand, males felt less comfortable avoiding plaigerism than females.[5]

CONCLUSIONS

Findings in the study came from the WELS (Western Educational Longitudinal Study) surveys conducted in the spring quarters of 2004 and 2005. Respondents were a cohort taken from the original WELS survey of first-time, in-coming frosh conducted in the summer of 2003 (n=1580). The findings, then, constitute an insight into the continuum of development of this entering group of students, possibly one of the first times in Western history that such a step-by-step analysis has been conducted.

Thus noted, it appears that despite concerted efforts on the part of Western offices and programs, there is a group of about 10% of these survey respondents that either does not set

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[2] The statistic used was a repeated measures T-test.

[3] No outside email account: M=5.64, SD=.81. Outside email account: M=4.48, SD=1.79. F(2, 420) = 15.6, p<.001. Scale: 1=Never, 2=1-3 per quarter, 3=2-3 per month, 4=once a week, 5=> once a week, 6=everyday.

[4] Males: M=1.75, SD=.72. Females: M=2.03, SD=.77. F(1. 419) = 15.37, p<.001. Scale: 1= Extremely, 2=Very, 3=Somewhat, 4=A little, 5=Not at all.

[5] Males: M = 1.94, SD = .77. Females: M = 1.76, SD = .65. F(1, 419) = 7.063, p = .008. (Same scale as above.)

up a *My Western* email account, or ignoes it if they have set one up. Indeed, only about half of this student population apparently claims to know what Western's email policy is. Yet as this is a relatively new requirement, it may be that this problem's recourse is simply to continue informing students as to the policy in as many venues as possible.

On the upside, it also appears that these students are displaying more experience and comfort with most academic techologies—with one exception: survey respondents are only just beginning to feel comfortable with research-related academic technologies. As sophomores, however, this may not be an unexpected finding. Traditionally one would expect sophomores to not yet be engaged in very serious research courses, but rather mostly still taking larger GUR survey courses. The spring, 2006, WELS survey should be the point in their academic careers where one would expect to see more comfort with research.

A NOTE ON THE WESTERN EDUCATIONAL LONGITUDINAL STUDY (WELS)

The Western Educational Longitudinal Study (WELS) was conceived as a process to obtain data more relevant to Western and its mission than survey data had been able to obtain previously. Rather than continuing to rely on outside survey forms, researchers developed a Western-specific survey form. Development of this survey took about three years, with researchers soliciting input from dozens of individuals, departments and offices. Along the way, WELS researchers also noted where data was already being collected so that doubling up on survey questions was minimized.

The final survey form was considered by all participants to be as thorough and Western-specific as it could be. In the inaugural WELS survey, 1580 in-coming 2003 freshmen participated. These respondents became the baseline cohort. From this baseline, samples have been and will continue to be drawn for subsequent WELS surveys. The principle surveys—and their consequent reports—conducted and completed to date include:

- Baseline (summer, 2003): *Western Educational Longitudinal Study (OIART report 2003-02).*

- First quarter transitions (late fall, 2003): *Fall 2003 Freshmen Transition Survey. (OIART Focus Summary, Issue 8, Volume 4.)*

- End of first year follow-up (spring, 2004): *Follow-up of Freshmen Entering Fall, 2003 (Report No. 2004-01).*

- End of Sophomore year follow-up (spring, 2005): Report available in fall, 2005.

All OIART reports can be accessed in pdf form at http://www.wwu.edu/depts/assess. For hard copies, please contact Gary McKinney. E-mail: gary.mckinney@wwu.edu. Telephone: 360-650-3409.

Table 1: WELS summary data from spring surveys, 2004 (end of freshmen year) and 2005 (end of sophomore year)

	Spr 2004 Mean (SD)	Spr 2005 Mean (SD)	Statistically Different	Brief Description
Frequency of My Western use 1= Never, 6 = Every Day	4.68 (1.63)	4.86 (1.59)	No	
Use external email 1 = Yes, 2 = No	1.18 (.39)	1.16 (.39)	No	
Set up WWU account to forward to non-WWU account 1 = Yes, 2 = No	1.89 (.32)	1.68 (.52)	**Yes** ($p<.001$)	More likely to forward
Comfort: using computers 1 = Extremely, 5 = Not at All	1.9 (.74)	1.85 (.78)	No	
Comfort: planning, implementing, and organizing research 1 = Extremely, 5 = Not at All	2.57 (.77)	2.45 (.80)	No	
Comfort: using library resources for research 1 = Extremely, 5 = Not at All	2.82 (.84)	2.65 (.73)	**Yes** ($p=.039$)	More comfortable w/library research
Comfort: citing references for research papers 1 = Extremely, 5 = Not at All	2.49 (.79)	2.30 (.83)	**Yes** ($p=.036$)	More comfortable doing citations
Comfort: understanding how to avoid plagiarism 1 = Extremely, 5 = Not at All	2.12 (.78)	1.84 (.73)	**Yes** ($p<.001$)	More comfortable avoiding plagiarism
Library use 1 = Never, 5 = Very Often	2.95 (1.16)	3.18 (1.0)	Marginal ($p=.055$)	
Computer experience: email 1 = A Great Deal, 5 = Not at All	1.32 (.62)	1.24 (.49)	No	
Computer experience: finding information on the Internet 1 = A Great Deal, 5 = Not at All	1.44 (.71)	1.29 (.61)	**Yes** ($p=.034$)	More computer experience
Computer experience: finding information via library databases 1 = A Great Deal, 5 = Not at All	2.87 (1.22)	2.58 (1.11)	**Yes** ($p=.03$)	More database experience
Computer experience: creating documents 1 = A Great Deal, 5 = Not at All	1.70 (1.02)	1.54 (.79)	Marginal ($p=.069$)	

Note: All statistical differences are small and should be interpreted with caution.