

WCMS DATA

Activities	ECollege			Blackboard	IntraKal	WebCT
	A	B	C			
PowerPoint Presentations						
Course assignments						
Syllabus						
Sample/practice Quiz						
Tests & Exams						
Video clips						
Lecture materials/ handouts						
Student Journals						
Peer review of papers						
Assignment drop box						
Links to other Web sites						
Reference Links						
Chat						
Discussion board						

Table 1. Student activities by Web course management system.

Survey Items	eCollege			Blackboard	IntraKal	WebCT
	A	B	C			
Freshman		3	12			2
Sophomore		10	4		2	
Junior		1		13	7	30
Senior						
Master	13					
Required course N=	13 100%	13 92.9%	16 94%	13 100%	9 81%	26 81%
Number enrolled	13	14	17	13	9	32

Table 2. Student classification. *All data except WebCT are from post-course surveys

Survey question	eCollege			Black-board	Intra-Kal	WebCT
	A	B	C			
Have you ever taken a course that was taught, at least in part, using WebBoard?	Yes 46%	Yes 59%	Yes 11%	Yes 9%	*Yes 0%	Yes 22%
➤ Rate the experience	Good N=6 M=4.1	Good N=11 M=3.9	Bad N=4 M=2.5	Neutral N=2 M=3.5	Good N=5 M=4.0	Neutral N=9 M=3
Have you ever taken a course that was taught, at least in part, using e-mail?	Yes 38%	Yes 64%	Yes 29%	Yes 72%	Yes 22%	Yes 53%
➤ Rate the experience	Neutral N=2 M=3.2	Neutral N=11 M=3.54	Neutral N=1 M=3.0	Neutral N=2 M=3.5	Good N=4 M=4.0	Excel N=15 M=4.6
Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?	Yes 15%	Yes 35%	Yes 5.8%	Yes 9%	Yes 22%	Yes 18%
➤ Rate the experience	Good N=2 M= 4.0	Good N=8 M=3.6	Neutral N=2 M=3.0	Neutral N=1 M=3.0	Good N=3 M=3.6	Neutral N=7 M=3.1
**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1 (Very Bad)						
Rate your WCMS experience	Neutral M=3.25	Good M=2.3	Good M=2.4	Neutral M=2.69	Neutral M=2.7	N/A
**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1 (Very Bad)						
Would you prefer to have more courses that use a WCMS?	38% (5/13)	64% (9/14)	58% (10/17)	N/A	36% (4/11)	N/A

Table 3. Question response by percent enrolled. N=number. M=mean.

Survey		*Skills	Q1	Q2	Q3	*Q4	*Q5	*Q6
Post-course	Mean	3.8466	4.34	4.31	2.29	3.68	4.38	4.09
	N	68	68	67	68	68	68	68
	Std. Deviation	.7421	1.17	1.06	1.48	1.25	.86	.96
Pre-course	Mean	3.4798	4.06	4.15	2.33	3.02	3.95	3.36
	N	66	66	66	66	66	66	66
	Std. Deviation	1.1019	1.50	1.28	1.44	1.67	1.57	1.44
Total	Mean	3.6659	4.20	4.23	2.31	3.35	4.17	3.73
	N	134	134	133	134	134	134	134
	Std. Deviation	.9511	1.34	1.17	1.45	1.50	1.28	1.27
Between Groups	Significant at p=	.025				.010	.05	.001

Table 4. Combined pre- and post-course survey means for four courses. Q=question. N=number. *Indicates a significant difference between group means.

Survey		Q7	Q8	*Q9	Q10	*Q11	Q12	*Q13	Q14	Q15
Post-course	Mean	3.82	3.66	3.04	3.38	3.22	3.48	2.97	3.24	2.49
	N	68	68	68	68	68	67	68	67	67
	Std. Deviation	1.01	.94	1.07	1.15	1.18	1.11	1.51	1.23	.89
Pre-course	Mean	3.85	3.73	2.65	3.67	3.83	3.88	3.27	3.62	2.59
	N	66	66	66	66	66	66	66	66	66
	Std. Deviation	1.38	1.42	1.13	1.44	1.16	1.21	1.38	1.24	1.07
Total	Mean	3.84	3.69	2.85	3.52	3.52	3.68	3.12	3.43	2.54
	N	134	134	134	134	134	133	134	133	133
	Std. Deviation	1.20	1.20	1.11	1.30	1.21	1.17	1.45	1.24	.98
Between Groups	Sig.			.041		.003		.048		

Table 4 continued. Combined pre- and post-course survey means for four courses. *Indicates a significant difference between group means.

		Sum of Squares	df	Mean Square	F	Sig.
Technology skills	Between Groups	2.925	1	2.925	3.039	.084
	Within Groups	127.029	132	.962		
Total		129.954	133			

Table 5. ANOVA for computer skills without the use of the WCMS. *The grouping variable SECTION is a string, so the test for linearity cannot be computed.

Table 6. Means of pre- and post-survey means for each question relative to the specific WCMS. Q=question. N=number.

Instructor group	Survey		Q1	Q2	Q3	Q4	Q5	Q6
IntraKal	POST	Mean	3.91	3.64	3.00	3.45	4.09	3.73
		N	11	11	11	11	11	11
		Std. Deviation	1.58	1.50	1.41	1.44	1.22	1.19
	PRE	Mean	3.89	3.56	2.33	2.78	4.00	3.56
		N	9	9	9	9	9	9
		Std. Deviation	1.36	1.42	1.41	1.20	1.12	1.01
Total	Mean	3.90	3.60	2.70	3.15	4.05	3.65	
	N	20	20	20	20	20	20	
	Std. Deviation	1.45	1.43	1.42	1.35	1.15	1.09	
ECollege (B)	POST	Mean	4.38	4.31	2.00	3.92	4.23	4.15
		N	13	13	13	13	13	13
		Std. Deviation	.65	.95	1.53	1.44	.60	.69
	PRE	Mean	4.00	4.29	2.36	2.93	3.86	2.86
		N	14	14	14	14	14	14
		Std. Deviation	1.47	.83	1.45	1.73	1.46	1.66
Total	Mean	4.19	4.30	2.19	3.41	4.04	3.48	
	N	27	27	27	27	27	27	
	Std. Deviation	1.14	.87	1.47	1.65	1.13	1.42	
Blackboard	POST	Mean	4.62	4.83	2.77	4.08	4.85	4.46
		N	13	12	13	13	13	13
		Std. Deviation	1.12	.39	1.36	.95	.38	.66
	PRE	Mean	4.78	4.78	2.22	2.89	3.56	3.67
		N	9	9	9	9	9	9
		Std. Deviation	.44	.44	1.09	1.83	2.07	1.22
Total	Mean	4.68	4.81	2.55	3.59	4.32	4.14	
	N	22	21	22	22	22	22	
	Std. Deviation	.89	.40	1.26	1.47	1.46	.99	
eCollege (C)	POST	Mean	4.35	4.41	1.82	3.53	4.29	4.24
		N	17	17	17	17	17	17
		Std. Deviation	1.50	1.23	1.51	1.33	1.10	.66
	PRE	Mean	4.18	4.29	2.06	2.76	4.12	3.35
		N	17	17	17	17	17	17
		Std. Deviation	1.51	1.31	1.48	1.82	1.65	1.41
Total	Mean	4.26	4.35	1.94	3.15	4.21	3.79	
	N	34	34	34	34	34	34	
	Std. Deviation	1.48	1.25	1.48	1.62	1.39	1.17	
eCollege (A)	POST	Mean	4.36	4.29	2.14	3.43	4.43	3.79
		N	14	14	14	14	14	14
		Std. Deviation	.74	.73	1.41	1.09	.65	1.37
	PRE	Mean	3.71	3.88	2.65	3.53	4.06	3.53
		N	17	17	17	17	17	17
		Std. Deviation	1.90	1.65	1.66	1.66	1.64	1.62
Total	Mean	4.00	4.06	2.42	3.48	4.23	3.65	
	N	31	31	31	31	31	31	
	Std. Deviation	1.51	1.31	1.54	1.41	1.28	1.50	
Total	POST	Mean	4.34	4.31	2.29	3.68	4.38	4.09
		N	68	67	68	68	68	68
		Std. Deviation	1.17	1.06	1.48	1.25	.86	.96

	PRE	Mean	4.06	4.15	2.33	3.02	3.95	3.36
		N	66	66	66	66	66	66
		Std. Deviation	1.50	1.28	1.44	1.67	1.57	1.44
	Total	Mean	4.20	4.23	2.31	3.35	4.17	3.73
		N	134	133	134	134	134	134
		Std. Deviation	1.34	1.17	1.45	1.50	1.28	1.27

Table 6 cont.. Means of pre- and post-survey means for each question relative to the specific WCMS. Q=question. N=number.

Instructor Survey group			Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
IntraKal	POST	Mean	3.73	3.64	2.64	3.36	3.00	3.00	3.45	3.55	2.73
		N	11	11	11	11	11	11	11	11	11
		Std. Deviation	1.01	1.12	1.12	1.50	1.41	1.41	1.21	1.13	1.01
	PRE	Mean	3.78	3.56	2.67	3.78	4.00	4.11	4.00	3.33	2.33
		N	9	9	9	9	9	9	9	9	9
		Std. Deviation	1.30	1.24	.87	1.20	.71	.78	.50	1.12	1.32
	Total	Mean	3.75	3.60	2.65	3.55	3.45	3.50	3.70	3.45	2.55
		N	20	20	20	20	20	20	20	20	20
		Std. Deviation	1.12	1.14	.99	1.36	1.23	1.28	.98	1.10	1.15
eCollege (B)	POST	Mean	3.08	3.08	3.46	3.15	3.00	2.85	2.46	2.77	2.08
		N	13	13	13	13	13	13	13	13	13
		Std. Deviation	1.32	.76	1.27	.80	.82	.99	1.76	1.24	1.32
	PRE	Mean	3.71	3.93	2.64	4.14	3.50	3.57	3.07	3.71	3.00
		N	14	14	14	14	14	14	14	14	14
		Std. Deviation	1.54	.62	1.15	1.10	1.02	1.02	1.38	1.07	1.11
	Total	Mean	3.41	3.52	3.04	3.67	3.26	3.22	2.78	3.26	2.56
		N	27	27	27	27	27	27	27	27	27
		Std. Deviation	1.45	.80	1.26	1.07	.94	1.05	1.58	1.23	1.28
Blackboard	POST	Mean	3.92	3.54	3.00	3.08	3.54	3.83	3.00	3.17	2.42
		N	13	13	13	13	13	12	13	12	12
		Std. Deviation	.76	1.13	1.15	1.19	1.05	.94	1.35	1.27	.67
	PRE	Mean	4.56	4.00	3.00	3.56	4.44	4.11	3.11	3.89	2.56
		N	9	9	9	9	9	9	9	9	9
		Std. Deviation	.53	1.22	.87	1.67	.73	1.27	1.27	1.17	.53
	Total	Mean	4.18	3.73	3.00	3.27	3.91	3.95	3.05	3.48	2.48
		N	22	22	22	22	22	21	22	21	21
		Std. Deviation	.73	1.16	1.02	1.39	1.02	1.07	1.29	1.25	.60
eCollege (C)	POST	Mean	4.29	3.94	2.88	3.29	2.94	3.76	2.76	2.88	2.59
		N	17	17	17	17	17	17	17	17	17
		Std. Deviation	.85	.83	.86	1.36	1.34	1.03	1.82	1.36	.62
	PRE	Mean	3.82	3.59	2.88	3.47	3.65	3.76	3.24	3.59	2.71

		N	17	17	17	17	17	17	17	17	17
		Std. Deviation	1.59	1.66	1.27	1.59	1.17	1.30	1.56	1.33	1.21
	Total	Mean	4.06	3.76	2.88	3.38	3.29	3.76	3.00	3.24	2.65
		N	34	34	34	34	34	34	34	34	34
		Std. Deviation	1.28	1.30	1.07	1.46	1.29	1.16	1.69	1.37	.95
ECollege (A)	POST	Mean	3.93	4.00	3.21	4.00	3.64	3.79	3.29	3.93	2.64
		N	14	14	14	14	14	14	14	14	14
		Std. Deviation	.73	.68	.97	.55	1.15	.89	1.14	.83	.74
	PRE	Mean	3.65	3.65	2.24	3.47	3.88	4.00	3.18	3.59	2.29
		N	17	17	17	17	17	17	17	17	17
		Std. Deviation	1.41	1.87	1.20	1.59	1.54	1.46	1.55	1.46	.92
	Total	Mean	3.77	3.81	2.68	3.71	3.77	3.90	3.23	3.74	2.45
		N	31	31	31	31	31	31	31	31	31
		Std. Deviation	1.15	1.45	1.19	1.24	1.36	1.22	1.36	1.21	.85
Total	POST	Mean	3.82	3.66	3.04	3.38	3.22	3.48	2.97	3.24	2.49
		N	68	68	68	68	68	67	68	67	67
		Std. Deviation	1.01	.94	1.07	1.15	1.18	1.11	1.51	1.23	.89
	PRE	Mean	3.85	3.73	2.65	3.67	3.83	3.88	3.27	3.62	2.59
		N	66	66	66	66	66	66	66	66	66
		Std. Deviation	1.38	1.42	1.13	1.44	1.16	1.21	1.38	1.24	1.07
	Total	Mean	3.84	3.69	2.85	3.52	3.52	3.68	3.12	3.43	2.54
		N	134	134	134	134	134	133	134	133	133
		Std. Deviation	1.20	1.20	1.11	1.30	1.21	1.17	1.45	1.24	.98

Table 6 cont.. Means of pre- and post-survey means for each question relative to the specific WCMS. Q=question. N=number.

Appendix 1

Pre-course Survey

Rate your ability to do each of the following: on the scale of 1-5	Expert user				No ability or knowledge
	5	4	3	2	1
Send and receive e-mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create a word processed document	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create or edit a World Wide Web page	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Send and receive files by way of the computer (over a modem, the Internet/WWW as file attachments or ftp etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for information on the Internet/World Wide Web	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use the Web system for this course (eCollege, Blackboard, IntraKal)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indicate how strongly you agree or disagree with each of the following statements.	Strongly Agree	Agree	Disagree	Strongly Disagree	No basis for judgment/ not applicable
	5	4	3	2	1
The technology to be used is appropriate for performing the tasks required in this course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of the way this course will use electronic communication:					
The assignments will be more interesting than in a regular classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will spend too much time learning to use the technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I will be better able to juggle my course work with my work and home responsibilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate how strongly you agree or disagree with each of the following statements.	Strongly Agree	Agree	Disagree	Strongly Disagree	No basis for judgment/ not applicable
	5	4	3	2	1
Because of the way this course will use electronic communication:					
I will communicate better/more, with other students in the class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will communicate better/more, with the teacher in class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My grade will be affected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will be a better learner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will be at a disadvantage because I do not possess adequate computer skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Have you ever taken a course that was taught, at least in part, using WebBoard ? <input type="radio"/> Yes <input type="radio"/> No</p> <p>If yes, rate that experience <input type="radio"/> Very Bad <input type="radio"/> Bad <input type="radio"/> Neutral <input type="radio"/> Good <input type="radio"/> Excellent</p> <p>Have you ever taken a course that was taught, at least in part, using e-mail? <input type="radio"/> Yes <input type="radio"/> No</p> <p>If yes, rate that experience <input type="radio"/> Very Bad <input type="radio"/> Bad <input type="radio"/> Neutral <input type="radio"/> Good <input type="radio"/> Excellent</p> <p>Have you ever taken a course that was taught, at least in part, using a web course management system such as Blackboard or eCollege? <input type="radio"/> Yes <input type="radio"/> No</p> <p>If yes, rate that experience <input type="radio"/> Very Bad <input type="radio"/> Bad <input type="radio"/> Neutral <input type="radio"/> Good <input type="radio"/> Excellent</p> <p>Name the system _____</p>					
In what way will using this Web course management system alter the way you study, learn and manage your time for this class?					
What aspects of the course and Web Course Management System do you feel will be the most beneficial and the least?					

Post-course Survey

Rate your ability to do each of the following: on the scale of 1-5	Expert user	4	3	2	No ability/knowledge
Send and receive e-mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create a word processed document	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create or edit a World Wide Web page	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Send and receive files by way of the computer (over a modem, the Internet/WWW as file attachments or ftp etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for information on the Internet/World Wide Web	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use the Web system for this course (eCollege, Blackboard, IntraKal)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indicate how strongly you agree or disagree with each of the following statements.	Strongly Agree	Agree	Disagree	Strongly Disagree	No basis for judgment/ not applicable
	5	4	3	2	1
The technology used was appropriate for performing the tasks required in this course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of the way this course used electronic communication, the assignments were more interesting than in a regular classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of the way this course used electronic communication, I did spend too much time learning to use the technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of the way this course used electronic communication, I think I am better able to juggle my course work with my work and home responsibilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate how strongly you agree or disagree with each of the following statements.	Strongly Agree 5	Agree 4	Disagree 3	Strongly Disagree 2	No basis for judgment/ not applicable 1
Because of the way this course used electronic communication, I communicate better or more with other students in the class.	O	O	O	O	O
Because of the way this course used electronic communication, I communicate better/more, with the teacher in class.	O	O	O	O	O
Because of the way this course used electronic communication, my grade was affected.	O	O	O	O	O
Because of the way this course used electronic communication, I am a better learner.	O	O	O	O	O
Because of the way this course used electronic communication, I am at a disadvantage because I did not possess adequate computer skills.	O	O	O	O	O
<p>Rate the experience of using a Web Course Management System: (WCMS)</p> <p>O Very Bad</p> <p>O Bad</p> <p>O Neutral</p> <p>O Good</p> <p>O Excellent</p> <p style="text-align: center;">Would you prefer to have more courses that use a WCMS?</p> <p style="text-align: right;">O Yes</p> <p style="text-align: right;">O No</p>					
<p>In what way did using this Web course management system alter the way you study, learn and manage your time for this class?</p>					
<p>What aspects of the course and Web course management system do you feel were the most beneficial and the least?</p>					