## WCMS DATA

Activities	I	EColle	ge	Blackboard	IntraKal	WebCT
	Α	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
	Α	B	С			
Freshman		3	12			2
Sophomore		10	4		2	
Junior		1		13	7	30
Senior						
Master	13					
Required course						
N=	13	13	16	13	9	26
	100%	92.9%	94%	100%	81%	81%
Number enrolled	13	14	17	13	9	32

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

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 $22\%$ $\triangleright$ Rate the experienceGood $N=6$ $M=4.1$ Good $N=11$ $M=3.9$ Bad $N=2.5$ Neutral $N=2$ Good $N=5$ Neutral $N=9$ Have you ever taken a course that was taught, at least in part, using e-mail?Yes $N=2$ Yes $N=2.5$ Yes $N=3.5$ Yes $N=4.0$ Yes $N=3$ $\blacktriangleright$ Rate the experienceNeutral $N=2$ Neutral $N=1$ Neutral $N=2$ Neutral $N=2$ Neutral $N=4.0$ Neutral $N=3$ $\models$ Rate the experienceNeutral $N=2$ Neutral $N=1$ Neutral $N=1$ Neutral $N=2$ Neutral $N=4.0$ Neutral $N=4.0$ $have you ever taken acourse that was taught, atleast in part, using a Webcourse management systemsuch as Blackboard oreCollege?YesS=00YesS=00YesS=00YesS=00YesN=3YesN=7\blacklozenge Rate theexperienceGoodN=2GoodN=4.0NeutralN=4.0NeutralN=3NeutralN=7\blacklozenge Rate theexperienceGoodN=2GoodN=3NeutralN=3NeutralN=7\blacklozenge Rate theexperienceGoodN=2NeutralN=4.0NeutralN=3NeutralN=3h=4.0N=2N=3N=3.6N=3.0$ N=3.0N=3.6 $h=4.0$ $N=2$ $N=4.0$ $N=3.6$ N=3.0 <th>Survey question</th> <th></th> <th>eCollege</th> <th></th> <th>Black-</th> <th>Intra-</th> <th>WebCT</th>	Survey question		eCollege		Black-	Intra-	WebCT
course that was taught, at least in part, using WebBoard? $46\%$ $59\%$ $11\%\%$ $9\%$ $0\%$ $22\%$ $\triangleright$ Rate the experienceGood N=6 M=4.1Good N=11 M=3.9Bad N=2.5Neutral N=2 M=3.5Good N=5 M=4.0Neutral N=3Have you ever taken a course that was taught, at least in part, using e-mail?Yes Neutral N=2 M=3.5Yes Yes N=10Yes Yes N=11 N=1 N=1Yes N=2.5Yes N=3.5Yes N=9 N=4.0 $\triangleright$ Rate the experienceNeutral N=2 M=3.2Neutral N=11 N=1 N=1 N=2 M=3.54Neutral N=10 N=2 N=3.5Neutral N=4.0Neutral N=4 N=4 N=15 $\models$ Rate the experienceNeutral N=2 M=3.2Neutral N=11 N=1 N=1 N=2Neutral N=2 N=3.5Neutral N=4.0Neutral N=4 N=4Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes SocialYes SocialYes Social N=4Yes N=2 N=3 N=3 N=7 M=4.0Neutral N=3 N=7 N=3 N=7 M=3.6Neutral N=7 M=3.6Neutral N=3 N=7 M=3.0Neutral N=3 N=3 N=7 M=3.0Neutral N=3 N=3 N=7 M=3.0 $\flat$ Rate the experienceGood N=2 N=4 N=4Good N=3 N=8 M=3.0Neutral N=3 N=3 N=3 N=3 N=3 N=3 N=3Neutral N=7 N=3 N=3 N=3 N=3Neutral N=3 N=7 N=3 N=3 N=3Neutral N=3 N=7 N=3 N=3 N=3 <th></th> <th>Α</th> <th>B</th> <th>С</th> <th>board</th> <th>Kal</th> <th>_</th>		Α	B	С	board	Kal	_
least in part, using WebBoard?Good Good N=6Good 	Have you ever taken a	Yes	Yes	Yes	Yes	*Yes	Yes
WebBoard?Good experienceGood N=6 M=4.1Good N=11 M=3.9Bad N=4 M=2.5Neutral N=2 M=3.5Good N=5 M=3.6Neutral N=9 M=3Have you ever taken a course that was taught, at least in part, using e-mail?Yes Yes N=2 N=8 M=3.2Yes Yes N=11 M=1Yes N=11 N=1Yes N=2 N=3.5Yes N=9 M=3.5Yes N=9 N=9 N=9 N=9 N=9 N=9 N=9 N=3 $\triangleright$ Rate the experienceNeutral N=2 M=3.2Neutral N=11 N=1 N=1Neutral N=1 N=2 N=3 N=3.5Neutral N=4 N=4 N=15 N=4Excel N=4 N=15 N=1 N=4Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes Yes Yes N=4.0Yes Yes Sister N=8 M=3.6Yes N=2 N=4Yes N=1 N=3 N=7 M=3.0Yes N=3 N=7 N=3 N=7 N=3.6**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)Sood Neutral) 2 (Bad) 1(Very Bad)Neutral Neutral Neutral)	course that was taught, at	46%	59%	11%%	9%	0%	22%
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	least in part, using						
experienceN=6 M=4.1N=11 M=3.9N=4 M=2.5N=2 M=3.5N=5 M=4.0N=9 M=3Have 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% $\gg$ Rate the experienceNeutral M=3.2Neutral M=3.2Neutral N=11 M=3.54Neutral N=10Neutral N=2 M=3.0Neutral M=3.5Neutral N=4Neutral N=15Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes Sod <td< td=""><td>WebBoard?</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	WebBoard?						
M=4.1M=3.9M=2.5M=3.5M=4.0M=3Have 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% $\triangleright$ Rate the experienceNeutral N=2 M=3.2Neutral N=11 M=3.2Neutral N=1 M=3.64Neutral N=2 M=3.54Neutral N=2 M=3.0Neutral N=2 M=3.6Neutral N=2 M=4.0Neutral N=4 M=4.0Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes SoddYes SoddYes SoddYes N=2 N=8 M=3.0Yes N=2 N=1 N=1Yes N=2 N=1 N=3 N=3 N=7 N=3.6Neutral N=3.0Neutral N=3.6Neutral N=3.0**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)1(Very Bad)1Neutral N=2 N=1N=3.5	Rate the	Good	Good	Bad	Neutral	Good	Neutral
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% $\triangleright$ Rate the experienceNeutral N=2 M=3.2Neutral N=11 M=3.2Neutral N=11 M=3.6Neutral N=1 M=3.0Neutral N=2 M=3.5Neutral N=4 M=3.6Neutral N=15 M=4.0Neutral N=15 M=4.0Neutral N=16Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes SoddYes Yes SoddYes Yes SoddYes Yes SoddYes Yes SoddYes Yes SoddYes N=4.0Yes N=4.0 $\triangleright$ Rate the experienceGood N=2 M=4.0Good N=8 M=3.6Neutral N=2 N=3.0Neutral N=3.0Neutral N=3.6Neutral N=3.1**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)1(Very Bad)Neutral Neutral Neutral Neutral Neutral Neutral Neutra	experience	N=6	N=11	N=4	N=2	N=5	N=9
course that was taught, at least in part, using e-mail? $38\%$ $64\%$ $29\%$ $72\%$ $22\%$ $53\%$ $\blacktriangleright$ Rate the experienceNeutral N=2Neutral N=11Neutral N=1Neutral N=1Neutral N=2Neutral N=4ScaleHave you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes YesYes YesYes YesYes YesYes YesYes YesYes N=4N=4.0 $\blacktriangleright$ Rate the experienceGood N=2 N=4.0Good N=8 N=3.6Neutral N=2Neutral N=1Neutral N=3.0Good N=3.0Neutral N=3.0Neutral N=3.0Meatral N=3.1**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)		M=4.1	M=3.9	M=2.5	M=3.5	M=4.0	M=3
least in part, using e-mail?Neutral Neutral N=2Neutral N=1Neutral N=1Neutral N=2Neutral N=2Neutral N=1Neutral N=2Neutral N=4Excel N=15Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes S SYes SYes SYes SYes SYes SYes SYes SYes SYes SYes S <td< td=""><td>Have you ever taken a</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td></td<>	Have you ever taken a	Yes	Yes	Yes	Yes	Yes	Yes
Rate the experienceNeutral $N=2$ $M=3.2$ Neutral $N=1$ Neutral $N=1$ Neutral $N=1$ Neutral $N=2$ $M=3.5$ Good $N=4$ Excel $N=4$ 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 $S=2$ Yes $S=35\%$ Yes $S=8\%$ Yes $S=3.0$ Yes $S=3.0$ Yes $S=3.0$ Yes $S=3.0$ Yes $S=3.0$ Yes $S=3.0$ **Scale $S$ (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)1(Very Bad)Neutral $S=2$ Neutral $S=3$ Neutral) 2 (Bad) 1(Very Bad)Neutral $S=3$ Neutral $S=3$	course that was taught, at	38%	64%	29%	72%	22%	53%
experienceN=2 M=3.2N=11 M=3.2N=1 M=3.54N=2 M=3.0N=4 M=3.5N=15 M=4.0Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes SolutionYes <b< td=""><td>least in part, using e-mail?</td><td></td><td></td><td></td><td></td><td></td><td></td></b<>	least in part, using e-mail?						
Image: Margin of the systemM=3.2M=3.54M=3.0M=3.5M=4.0M=4.6Have you ever taken a course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege?Yes Solution of the system Solution of the systemYes Solution of the system N=2Yes Solution of the system Solution of the systemYes Yes Yes Solution of the system Solution of the systemM=3.0M=4.0M=4.0M=4.0M=3.6M=3.0M=3.0M=3.0M=3.6M=3.1**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)	Rate the	Neutral	Neutral	Neutral	Neutral	Good	Excel
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% $\sim$ Rate the experienceGood N=2 M=4.0Good N=3.6Neutral M=3.6Neutral M=3.0Good M=3.0Neutral M=3.6Good M=3.6Neutral M=3.1	experience	N=2	N=11	N=1	N=2	N=4	N=15
course that was taught, at least in part, using a Web course management system such as Blackboard or eCollege? $15\%$ $35\%$ $5.8\%$ $9\%$ $22\%$ $18\%$ $\sim$ Rate the experienceGood N=2 M=4.0Good N=3.6Neutral M=3.6Neutral N=2 M=3.0Sood M=3.0Neutral N=3 M=3.6Sood M=3.1**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)I/Very Bad)Sood Neutral Net the state of		M=3.2	M=3.54	M=3.0	M=3.5	M=4.0	M=4.6
least in part, using a Web       course management system         such as Blackboard or       eCollege?         ▶ Rate the       Good         experience       M=2         M=4.0       M=3.6         M=3.0       M=3.0         M=3.0       M=3.6	Have you ever taken a	Yes	Yes	Yes	Yes	Yes	Yes
course management system       such as Blackboard or       Image: College of the system of t	course that was taught, at	15%	35%	5.8%	9%	22%	18%
such as Blackboard or eCollege?Good SodGood N=2Neutral N=8Neutral N=2Good N=3.6Neutral N=3Good N=7Neutral N=7**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)Method Method Meth	least in part, using a Web						
	course management system						
Rate the experienceGood N=2Good N=8Neutral N=8Neutral N=2Good N=1Neutral N=3Good N=3Neutral N=7**Scale5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)	such as Blackboard or						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	eCollege?						
M= 4.0 M=3.6 M=3.0 M=3.0 M=3.6 M=3.1 **Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)	$\blacktriangleright$ Rate the	Good	Good	Neutral	Neutral	Good	Neutral
**Scale 5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)	experience	N=2	N=8	N=2	N=1	N=3	N=7
5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1(Very Bad)		M=4.0	M=3.6	M=3.0	M=3.0	M=3.6	M=3.1
	**Scale						
		utral) 2 (Ba	ad) 1(Very l	Bad)			
	Rate your WCMS	Neutral	Good	Good	Neutral	Neutral	N/A
*	experience	M=3.25	M=2.3	M=2.4	M=2.69	M=2.7	
**Scale	**Scale						
5 (Excellent) 4 (Good) 3 (Neutral) 2 (Bad) 1 (Very Bad)			ad) 1(Very I				
	Would you prefer to have				N/A	36%	N/A
	more courses that use a	(5/13)	(9/14)	(10/17)		(4/11)	
WCMS?	WCMS?						

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.

G		05	00	*00	010	*011	010	*010	014	015
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.	1.01	.94	1.07	1.15	1.18	1.11	1.51	1.23	.89
	Deviation									
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.	1.38	1.42	1.13	1.44	1.16	1.21	1.38	1.24	1.07
	Deviation									
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.	1.20	1.20	1.11	1.30	1.21	1.17	1.45	1.24	.98
	Deviation									
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		Mean Square		Sig.
Technology skills		ween 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.

Instructor group	Survey	iv-number.	Q1	Q2	Q3	Q4	Q5	Q6
IntraKal	POST	Mean	3.91	3.64		3.45	4.09	3.73
Inturtur	1001	N	11	11	11	11	11	11
		Std. Deviation	1.58	1.50		1.44	1.22	1.19
	PRE	Mean	3.89	3.56		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
	DDE	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
	Tatal	Std. Deviation	1.47	.83	1.45	1.73	1.46	1.66
	Total	Mean N	4.19 27	4.30	2.19 27	3.41 27	4.04	3.48
		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
Diackooard	1051	N	4.02	4.85	13	4.08	4.83	4.40
		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
	<b>T</b> 1	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
oCollago	POST	Std. Deviation Mean	1.48 4.36	1.25		1.62 3.43	1.39	1.17
eCollege (A)	P051	Wiean	4.50	4.29	2.14	5.45	4.43	3.79
(A)		N	14	14	14	14	14	14
		Std. Deviation	.74	.73		1.09	.65	1.37
	PRE	Mean	3.71	3.88	2.65	3.53	4.06	3.53
<u> </u>	1102	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

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

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.

specific WCMS.	-										
Instructor group	Survey		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.	1.01	1.12	1.12	1.50	1.41	1.41	1.21	1.13	1.01
		Deviation									
	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	-	
		Std.	1.30	1.24	.87	1.20	.71	.78	.50	1.12	1.32
		Deviation									
	Total	Mean			2.65		3.45			3.45	
		N	20						20		
		Std.	1.12	1.14	.99	1.36	1.23	1.28	.98	1.10	1.15
a Callaga	DOST	Deviation Mean	2.00	2.00	2 16	2 1 5	2.00	2.85	2 16	2.77	2.00
eCollege (B	POST	Mean									
		N	13	13		13		13	13		
		Std.	1.32	.76	1.27	.80	.82	.99	1.76	1.24	1.32
		Deviation									
	PRE	Mean			2.64		3.50			3.71	
		N	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
		Ν	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
		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				21	22		
		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		1.36			1.82		
	PRE	Mean	3 87	3 50	2.88	3 47	3 65	3.76	3 2/	3 50	2.71
	TINE	wiedli	5.02	5.59	2.00	5.47	5.05	5.70	5.24	5.59	2.11

		N						17			17
		Std.		1.66	1.27	1.59	1.17	1.30	1.56	1.33	1.21
		Deviation									
	Total	Mean	4.06	3.76	2.88	3.38	3.29	3.76	3.00	3.24	2.65
		Ν	34	34	34	34	34	34	34	34	34
		Std.	1.28	1.30	1.07	1.46	1.29	1.16	1.69	1.37	.95
		Deviation									
ECollege	POST	Mean	3.93	4.00	3.21	4.00	3.64	3.79	3.29	3.93	2.64
( Ă)											
		N	14	14	14	14	14	14	14	14	14
		Std.	.73	.68	.97	.55	1.15	.89	1.14	.83	.74
		Deviation									
	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.	1.41	1.87	1.20	1.59	1.54	1.46	1.55	1.46	.92
		Deviation									
	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.	1.15	1.45	1.19	1.24	1.36	1.22	1.36	1.21	.85
		Deviation									
Total	POST	Mean	3.82	3.66	3.04	3.38	3.22	3.48	2.97	3.24	2.49
		Ν	68	68	68	68	68	67	68	67	67
		Std.	1.01	.94	1.07	1.15	1.18	1.11	1.51	1.23	.89
		Deviation									
	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.	1.38	1.42	1.13	1.44	1.16	1.21	1.38	1.24	1.07
		Deviation			_		-				-
	Total	Mean	3.84	3.69	2.85	3.52	3.52	3.68	3.12	3.43	2.54
		N	134		134			133	134	133	133
		Std.	1.20		1.11	1.30		1.17	1.45	1.24	.98
		Deviation				0					
		_	1						1		

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 5	4	3	2	No ability or knowledge 1
Send and receive e-mail	0	0	0	0	О
Create a word processed document	0	0	0	0	0
Create or edit a World Wide Web page	0	0	0	0	0
Send and receive files by way of the computer (over a modem, the Internet/WWW as file attachments or ftp <i>etc.</i> )	0	0	0	0	0
Search for information on the Internet/World Wide Web	0	0	0	0	0
Use the Web system for this course (eCollege, Blackboard, IntraKal)	0	0	0	0	0
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
statements.	5	4	3	2	lot applicable
The technology to be used is appropriate for performing the tasks required in this course.	0	0	0	0	Ο
Because of the way this course will use electronic communication:					
The assignments will be more interesting than in a regular classroom.	0	0	0	0	О
I will spend too much time learning to use the technology	0	0	0	0	0
I think I will be better able to juggle my course work with my work and home responsibilities	0	0	0	0	0

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	0	О	0	0	0
I will communicate better/more, with the teacher in class	Ο	0	Ο	Ο	0
My grade will be affected	0	0	0	0	0
I will be a better learner	0	0	0	0	0
I will be at a disadvantage because I do not possess adequate computer skills. Have you ever taken a course that was taught, at	0	0	O rd? O Yes	O s O No	0
If yes, rate that experience O Very Have you ever taken a course that was taught, at	Bad O Bad O least in part, usi			ent es O No	
If yes, rate that experience O Very	Bad O Bad O	Neutral O	Good O Excell	ent	
Have you ever taken a course that was taught, at management system such as Blackboard or eCol		ing a web co		Yes O I	No
If yes, rate that experience O Very	Bad O Bad O	Neutral O	Good O Excell	ent	
Name the system In what way will using this Web course managen class?	nent system alte	r the way yo	ou study, learn a	nd manage you	r time for this
What aspects of the course and Web Course Ma	nagement Syste	em do you f	eel will be the r	nost 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	0	0	Ο	Ο	0
Create a word processed document	0	0	0	0	0
Create or edit a World Wide Web page	0	0	0	0	0
Send and receive files by way of the computer (over a modem, the Internet/WWW as file attachments or ftp etc.)	О	0	Ο	0	0
Search for information on the Internet/World Wide Web	0	0	0	0	0
Use the Web system for this course (eCollege, Blackboard, IntraKal)	0	0	0	0	0
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
The technology used was appropriate for performing the tasks required in this course.	0	Ο	0	0	0
Because of the way this course used electronic communication, the assignments were more interesting than in a regular classroom.	0	0	0	0	0
Because of the way this course used electronic communication, I did spend too much time learning to use the technology	0	0	0	О	0
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	0	0	0	0	0

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.	0	0	0	Ο	0
Because of the way this course used electronic communication, I communicate better/more, with the teacher in class.	0	0	0	0	0
Because of the way this course used electronic communication, my grade was affected.	0	0	0	0	0
Because of the way this course used electronic communication, I am a better learner.	0	0	0	0	0
Because of the way this course used electronic communication, I am at a disadvantage because I did not possess adequate computer skills.	О	0	О	О	0
Rate the experience of using a Web Course Mana	igement System	: (WCMS)			
O Very Bad					
O Bad	Would yo	u prefer to h	ave more cours	es that use a W	VCMS?
O Neutral					O Yes
O Good					O No
O Excellent					
In what way did using this Web course managem class?	ent system alter	the way you	ı study, learn ar	nd manage your	t time for this
What aspects of the course and Web course mana	gement system	do you feel	were the most l	peneficial and t	he least?