Does a Delivery Method Matter?
A Comparison between Online and Paper Teaching Evaluations

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Introduction

The purpose of this study was to examine whether or not there were significant differences in student responses between online and paper course evaluations.

	Online Evaluation (OE)	Paper Evaluation (PE)
Response Rate	31% (Spring 2009 only)	73% (Five semesters prior to Spring '09 (selected the most recent semester)
Samples: Course Sections	152 sections (52%)	139 sections (48%)
Total Responses	1,477 responses (32%)	3,177 responses (68%)
Inclusion	More than 3 responses	@ Census Data
Exclusion	• Responses with "Not Applicable/No Opportunity to Observe" • Without Matching Instructors/Courses (e.g., SLIS)	

Research Questions:

- Is there a difference in average SOTE scores between online and paper evaluations?

In comparison between online and paper evaluations:

- Are there differences in SOTE scores by course levels (Lower Division, Upper Division, and Graduate)?

- Are there differences in SOTE scores by college?

- Are there differences in SOTE scores by subject areas?

Question 1: Is there a difference in average SOTE scores between online and paper evaluations?

- One Predictor: Delivery Mode (Online vs. Paper)
- One Dependent Variable: SOTE scores
- OE students rated their faculty more favorably in four questions
- The remaining nine questions rated no significant difference between these two delivery modes (including Question 13)

Mean Comparisons of SOTE Questions			
Question	OE Mean	PE Mean	t-test
1. Demonstrated relevance of the course content	4.40	4.40	0.253
2. Used assignments to enhance learning	4.20	4.16	1.284
3. Summarized/emphasized important points	4.29	4.25	1.529
4. Was responsive to questions and comments from students	4.43	4.35	2.611[1]
5. Established an atmosphere that facilitated learning	4.29	4.23	2.041[1]
6. Was approachable for assistance	4.40	4.32	2.855[2]
7. Was responsive to the diversity of students in this class	4.44	4.38	2.177[1]
8. Showed strong interest in teaching this class	4.51	4.49	0.778
9. Used intellectually challenging teaching methods	4.14	4.12	0.733
10. Used fair grading methods	4.23	4.20	0.778
11. Helped student analyze complex/abstract ideas	4.19	4.13	1.925
12. Provided meaningful feedback about student work	4.15	4.10	1.318
13. Overall, this instructor's teaching was	4.38	4.37	0.210

[1] $p < 0.05$; [2] $p < 0.005$

Question 2a: Are there differences in SOTE scores on course levels?

Two Predictors: 1) Delivery Mode (Paper vs. Online)

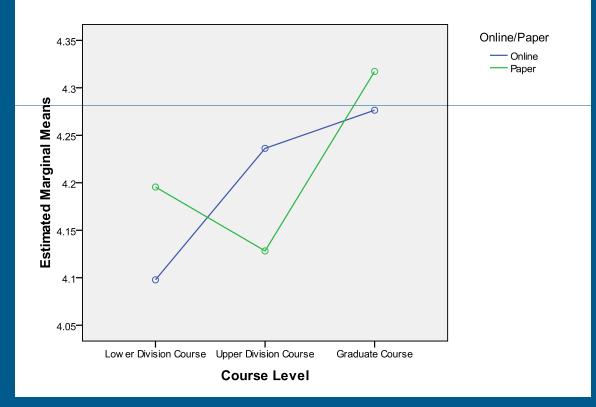2) Course Level (Lower Div, Upper Div, and Graduate)

One Dependent Variable: SOTE scores

Analysis of Variance: Survey Delivery Mode and Course Level - F values			
	Main Effect		
Question	Survey Delivery Mode	Course Level	Interactive Effect
1. Demonstrated relevance of the course content	0.09	3.15[1]	1.42
2. Used assignments to enhance learning	0.06	2.98	4.97[1]
3. Summarized/emphasized important points	0.91	2.78	0.16
4. Was responsive to questions and comments from students	2.33	0.56	1.41
5. Established an atmosphere that facilitated learning	0.46	0.48	3.22[1]
6. Was approachable for assistance	6.55[1]	2.41	2.52
7. Was responsive to the diversity of students in this class	2.68	0.56	2.62
8. Showed strong interest in teaching this class	0.04	1.37	1.18
9. Used intellectually challenging teaching methods	0.09	4.64[1]	2.57
10. Used fair grading methods	0.43	0.40	7.07[2]
11. Helped student analyze complex/abstract ideas	1.29	0.56	3.32[1]
12. Provided meaningful feedback about student work	1.19	0.35	1.36
13. Overall, this instructor's teaching was	0.04	5.20[1]	0.167

[1]$p < 0.05$; [2]$p < 0.005$

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Question 2b: Is there a significant interaction between survey delivery modes and course levels on SOTE scores?

"Effect" of survey delivery mode on SOTE scores for these questions depends on which course level is being considered.

- Four questions significantly different

- SOTE scores for Q2 from OE students were relatively lower for lower division courses and higher for upper division courses.

Estimated Marginal Means of 2. Used assignments to enhance learning

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Question 3a: Are there differences in SOTE scores by college?

Two Predictors: 1) Delivery Mode (Paper vs. Online); 2) College (7 Colleges)

One Dependent Variable: SOTE scores

Summary of Student Responses by College and Survey Delivery Mode

College	OE	OE %	PE	PE %	Total
Applied Arts & Sciences	175	28%	461	72%	636
Business	34	27%	94	73%	128
Education	533	33%	1,059	67%	1,592
Engineering	98	45%	119	55%	217
Humanities & the Arts	12	16%	62	84%	74
Social Sciences	523	32%	1,111	68%	1,634
Science	102	27%	271	73%	373
Total	1,477	32%	3,177	68%	4,654

Main Effect on College: All thirteen questions are significantly different

Analysis of Variance: Survey Delivery Mode vs. College - F values			
	Main Effect		
Question	Survey Delivery Mode	College	Interactive Effect
1. Demonstrated relevance of the course content	0.08	4.77[3]	0.25
2. Used assignments to enhance learning	0.87	3.69[2]	0.41
3. Summarized/emphasized important points	0.51	7.15[3]	1.38
4. Was responsive to questions and comments from students	1.45	3.44[2]	1.19
5. Established an atmosphere that facilitated learning	0.36	5.88[3]	1.59
6. Was approachable for assistance	4.86[1]	3.66[2]	1.05
7. Was responsive to the diversity of students in this class	1.75	7.40[3]	0.63
8. Showed strong interest in teaching this class	0.34	6.46[3]	1.43
9. Used intellectually challenging teaching methods	1.78	2.42[1]	1.02
10. Used fair grading methods	0.17	9.70[3]	0.32
11. Helped student analyze complex/abstract ideas	1.61	4.93[3]	1.14
12. Provided meaningful feedback about student work	0.29	5.99[3]	2.40[1]
13. Overall, this instructor's teaching was	0.40	6.87[3]	1.02

[1] $p < 0.05$; [2] $p < 0.005$; [3] $p < 0.0005$

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Question 3b: Is there a significant interaction between survey delivery modes and colleges on SOTE scores?

"Effect" of survey delivery mode on SOTE scores for these questions depends on which course level

- Only one question (Q12) is significantly different

- SOTE scores for Q12 were higher for OE students who took courses offered by Business, Education, H&A, and Social Science

Estimated Marginal Means of 12. Provided meaningful feedback about student work

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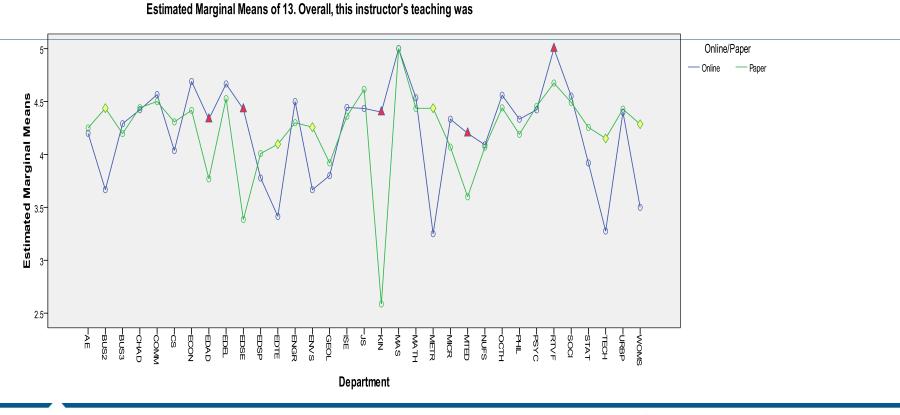# Question 4a: Are there differences in SOTE scores by subject areas?

Main Effect on Subject Areas: All thirteen questions are significantly different

Table 7. Analysis of Variance: Survey Delivery Modes vs. Subject areas - F values			
	Main Effect		
Question	Survey Delivery Mode	Subject area	Interaction Effect
1. Demonstrated relevance of the course content	0.57	5.93^3	2.23^3
2. Used assignments to enhance learning	1.02	5.48^3	1.90^2
3. Summarized/emphasized important points	1.59	7.40^3	2.18^3
4. Was responsive to questions and comments from students	1.26	9.97^3	2.48^3
5. Established an atmosphere that facilitated learning	0.15	10.77^3	2.78^3
6. Was approachable for assistance	1.65	10.80^3	1.80^2
7. Was responsive to the diversity of students in this class	1.38	7.15^3	1.98^2
8. Showed strong interest in teaching this class	0.00	7.25^3	2.61^3
9. Used intellectually challenging teaching methods	0.30	6.14^3	1.77^1
10. Used fair grading methods	0.05	9.38^3	2.01^2
11. Helped student analyze complex/abstract ideas	0.36	8.66^3	1.92^2
12. Provided meaningful feedback about student work	0.20	11.39^3	2.51^3
13. Overall, this instructor's teaching was	0.02	10.02^3	3.38^3

[1] $p < 0.05$; [2] $p < 0.005$; [3] $p < 0.0005$

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Question 4b: Is there a significant interaction between survey delivery mode and subject areas on SOTE scores?

All thirteen question have a significant difference

The "effect" of survey delivery modes on SOTE scores depends on which subject area is being considered

Estimated Marginal Means of 13. Overall, this instructor's teaching was

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Question 4b: Is there a significant interaction between survey delivery mode and subject areas on SOTE scores? (Continued)

Subject Area	PE	OE	Mean Diff		Subject Area	PE	OE	Mean Diff	
Radio TV Film (RTVF)	4.675	5.000	.325	[1]	Women's Studies (WOMS)	4.286	3.500	-.786	
Justice Studies (JS)	4.615	4.435	-.180	[1]	Env Studies (ENVS)	4.258	3.667	-.591	
Elementary Educ (EDEL)	4.528	4.667	.139		Statistics (STAT)	4.256	3.919	-.336	[1]
Comm. Studies (COMM)	4.500	4.566	.066		Aerospace Engr (AE)	4.250	4.200	-.050	
Sociology (SOCI)	4.492	4.552	.060		Organization/Mgmt (BUS3)	4.197	4.290	.093	
Psychology (PSYC)	4.455	4.422	-.033		Philosophy (PHIL)	4.190	4.333	.143	
Child/Adolescent (CHAD)	4.442	4.422	-.020		Technology (TECH)	4.152	3.276	-.876	[1]
Occupational Thrpy (OCTH)	4.441	4.560	.119		Teacher Education (EDTE)	4.097	3.414	-.683	[1]
Marketing (BUS2)	4.438	3.667	-.771		Microbiology (MICR)	4.070	4.333	.264	
Meteorology (METR)	4.438	3.250	-1.188	[1]	Nutrition Science (NUFS)	4.069	4.091	.022	
Mathematics (MATH)	4.435	4.536	.100		Speech Pathology (EDSP)	4.008	3.778	-.231	
Urban/Rgl Planning (URBP)	4.429	4.400	-.029		Geology (GEOL)	3.920	3.800	-.120	
Economics (ECON)	4.417	4.690	.273		Educational Admin (EDAD)	3.769	4.333	.564	
Indust/Syst Engineer (ISE)	4.361	4.444	.083		Math Engineering (MTED)	3.600	4.200	.600	
Computer Science (CS)	4.308	4.036	-.271		Special Education (EDSE)	3.385	4.429	1.044	[1]
General Engr (ENGR)	4.300	4.500	.200		Kinesiology (KIN)	2.586	4.400	1.814	[1]

[1] $p < .05$

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Background Information

- OE students expect to receive a higher grade than PE students

Current estimate of overall grade in class					
Grade	OE	OE%	PE	PE%	Total
A (4)	416	**38%**	824	33%	1,240
B (3)	498	46%	1,170	47%	1,668
C (2)	160	15%	472	19%	632
Either D or F (1)	16	1%	47	2%	63
Total	1,090	100%	2,513	100%	3,603
Mean	**3.20**		3.10		t-test = 6.050[1]

[1] $p < 0.0005$

- PE students have a higher classification than OE students

Self identification of grade (classification) level					
Classification	OE	OE%	PE	PE%	Total
Senior (4)	357	33%	959	**37%**	1,316
Junior (3)	379	35%	866	34%	1,245
Sophomore (2)	110	10%	309	12%	419
Freshman (1)	250	23%	425	17%	675
Total	1,096	100%	2,559	100%	3,655
Mean	2.77		**2.92**		t-test = -3.871[1]

[1] $p < 0.0005$

Conclusion

Delivery Modes

- No significant difference
- When there is a difference, OE has higher ratings

Colleges & Subject Areas

- Significant differences
- Comparing SOTE scores across colleges and subject areas can be difficult

Further Study:

- Longitudinal analysis
- Data Validation

Related Expenditures on SOTE

Semester	Classes Evaluated	Forms Processed
Fall 2002	2,978	65,280
Spring 2003	2,724	62,116
Fall 2003	3,645	80,441
Spring 2004	3,543	76,567
Fall 2004	3,653	79,489
Spring 2005	3,689	76,964
Fall 2005	3,866	83,888
Spring 2006	3,024	63,493
Fall 2006	3,166	68,954
Spring 2007	2,946	63,492

Items	Paper-Based	Online
Materials (envelopes, paper, printing on envelopes, labels)	$3,403	$0
Student Support	$31,249	$1,000
Forms Printing (Scantrons)	$19,500	$0
Services (installing collection boxes)	$1,000	$0
Totals	$55,152	$1,000