



CENTRAL WASHINGTON UNIVERSITY

FALL 2014, WINTER 2015, and SPRING 2015 STUDENT EVALUATIONS OF INSTRUCTION (SEIs)

**A COMPARISON OF RESPONSES
FACE-TO-FACE, INTERACTIVE VIDEO, AND ONLINE COURSES**

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I. ABSTRACT

This report compares the Student Evaluations of Instruction (SEIs) of students enrolled in courses taught face-to-face in traditional classrooms (F2F), via synchronous interactive video (ITV), and “online” or to students enrolled in courses taught 100% online. The main research questions this report addresses are:

- How do CWU students rate their instruction?
- Do course evaluations indicate any major differences in learning outcomes between courses taught 100% online, via interactive video, or F2F lecture courses taught in-class?

II. EXECUTIVE SUMMARY

- CWU students’ ratings of instruction during the 2014/2015 academic year were, on average, very positive.
- Student evaluations of online courses and interactive video courses are very similar to the ratings of students in traditional face-to-face courses. All differences were small.

III. BACKGROUND

During the 2014/15 academic year Central Washington University administered all course evaluations online. The questions on forms designed for online students and face-to-face lecture students are similar.

Mock ups of the course evaluation forms can be found at:

- [Form A - Lecture](#)
- [Form C - Skills Acquisition](#)
- [Form D - Laboratory](#)
- [Form E - Visual and Performing Arts](#)
- [Form F - Field Experience / Student Teaching](#)
- [Form W - Online](#)

Note 1: this analysis does not compare online or ITV SEIs to Forms C, D, E, or F because: (a) the questions on those evaluation forms are not as similar as Form A and Form W, and (b) because many of the courses assessed with those forms do not use traditional classroom settings.

Note 2: this analysis does not include summer 2015 SEI results.

During the 2014/15 academic year Form A and Form W accounted for 85% of all course evaluations, see Table 1.

Table 1 summarizes the number of responses to all SEOI forms during the fall 2014, winter 2015, and spring 2015 terms.

Table 1 - Responses to Course Evaluations by Evaluation Form by Term

	Fall '14	Winter '15	Spring '15	Total	%
Form A - Lecture	10,032	9,829	7,830	27,691	65%
Form C – Skills Acquisition	1,396	802	756	2,954	7%
Form D - Lab	931	694	451	2,076	5%
Form E - Arts	521	412	358	1,291	3%
Form F – Field Experience	100	58	83	241	1%
Form W - Online	2,508	3,034	2,938	8,480	20%
Term Totals	15,488	14,829	12,416	42,733	100%
Percent of 2013/14	36%	35%	29%		

The SEOI web site has information about the online course evaluation process and links to the final SEOI Task Force report: <http://www.cwu.edu/seoi>. Many of the questions on CWU’s course evaluations use a five point Likert scale arranged in a table format (a visual analog scale). For this analysis a response of “Strongly agree” is assigned a value of 5. A response of “Strongly disagree” is assigned a value of 1 (see “Likert scale” in appendix 1).

The CWU-wide average response rates have been decreasing. The spring 2013 term was the first quarter that SEOIs were administered for just one week to students (as opposed to two weeks in prior quarters). Another major difference was that faculty could no longer download a list of students who did or did not respond to SEOIs.

Table 2 - Response Rates to SEOIs by Term and Form (with length of time of administered)

	Spring 2012 2 weeks	Fall 2012 2 weeks	Winter 2013 2 weeks	Spring 2013 1 week	Fall 2013 1 week	Winter 2014 2 weeks	Spring 2014 2 weeks	Fall 2014 2 weeks	Winter 2015 2 weeks	Spring 2014 2 weeks	Fall 2014 2 weeks	Winter 2015 2 weeks	Spring 2015 2 weeks
Form A - Lecture	56%	57%	51%	41%	44%	44%	33%	39%	40%	33%	39%	40%	35%
Form C - Skills Acquisition	48%	48%	41%	33%	39%	36%	31%	37%	33%	31%	37%	33%	27%
Form D - Lab	55%	51%	45%	37%	46%	38%	32%	37%	30%	32%	37%	30%	26%
Form E - Visual & Perform. Arts	49%	45%	37%	27%	38%	32%	27%	28%	24%	27%	28%	24%	21%
Form F - Field Experience	N/A	N/A	N/A	53%	51%	56%	53%	36%	36%	53%	37%	36%	37%
Form W - Online	62%	64%	62%	53%	46%	49%	43%	47%	53%	43%	47%	53%	49%
Overall Average	56%	56%	50%	41%	44%	43%	34%	39%	40%	34%	40%	41%	37%

IV. RESULTS

A. COURSE DELIVERIES BY COLLEGE

The ratio of course types by college varied quite a bit from one delivery mode to another. Table 3 shows the percent of Face-to-Face (F2F), Interactive Video (ITV) and Online courses taught by CWU’s four colleges.

In summary:

- The College of Business generated 66% of the total ITV course evaluation responses (and only 8% of face-to-face responses)
- The College of Education & Professional Studies along with the College of the Sciences generate 83% of all online course evaluation responses for 2014/15

Table 3 - Percent of 2014/15 Lecture, ITV and Online SEOI Replies by “Course Types” by College

	Face-to-Face		Interactive Video		100% Online	
		Data Bars		Data Bars		Data Bars
	- % -	0 - 100%	- % -	0 - 100%	- % -	0 - 100%
CAH	23%		1%		7%	
CB	8%		66%		8%	
CEPS	24%		8%		55%	
COTS	42%		25%		28%	
Other	3%		0%		2%	

Note: Table 3 only summarizes responses from Form A – Lecture and Form W – Online course evaluations. It does not include responses from Form C – Skills Acquisition, Form D – Lab, Form E - Visual & Performing Arts, or Form F – Field Experience

B. CWU STUDENT RATINGS OF INSTRUCTION

CWU students’ evaluation of instruction continues to be very positive. The first two question banks on course evaluation forms relate to “Student Learning Environment” and “Teaching for Student Learning.” All medians for online courses and 1`5 pf 16 medians for face-to-face courses were 5.0, i.e. more than 50% of the students gave the highest possible rating.

Table 4 presents a comparison of results from face-to-face, interactive-video, and online courses. Only the questions that have the same or very similar text on both SEOI forms (Form A – Lecture and Form W – Online) are listed and compared. All of the differences in averages were small.

- The first two question banks relate to “Student Learning Environment” and “Teaching for Student Learning.” All of the medians for online sections were 5.0 (the best possible rating). At least 50% of the students gave the best possible rating.
- The differences (Effect size) in the average responses between face-to-face and interactive video courses are all small as measured by Hedge’s g. (See appendix 1 for detailed explanations of “effect size” and “Hedge’s g.”)
- The differences in the average responses between face-to-face and online courses are all small as measured by Hedge’s g.

Note: Hedge’s g effect size is a method of quantifying “effect size”, i.e., the difference or “distance” between the means of two groups. Effect sizes of 0.2 or less are often considered “small,” 0.5 are “medium” and 0.8 or higher are large. Differences were computed between face-to-face and interactive video courses as well as between face-to-face and online courses. Hedge’s g uses “pooled standard deviations.” This method gives more weight to the standard deviation of larger sample sizes. It is used when sample sizes are quite different between two groups.

A Likert scale was used on all of the above questions:

- 5 -	- 4 -	- 3 -	- 2 -	- 1 -
Strongly agree	Agree	Neutral	Disagree	Strongly disagree

Table 4 - 2014/15 Medians, Averages, and Comparison of Averages for Face-to-Face, Interactive Video, and Online Courses (medians less than 5.0 are highlighted)

2014/15 Academic Year SEOI Results		Face-to-face (F2F) vs. Interactive Video (ITV) vs. 100% Online Medians less than 5.0 are highlighted																													
		F2F Medians			ITV Medians			Online Medians			F2F Averages			ITV Averages			Online Averages			Effect Size: F2F vs. ITV			Effect size: F2F vs. Online			Difference in F2F vs. ITV			Difference in F2F vs. Online		
1 - STUDENT LEARNING ENVIRONMENT To what extent do you agree or disagree that the...																															
1.a./1.a.	instructor fostered a fair and respectful learning environment?	5.0	5.0	5.0	4.5	4.4	4.5	0.0	0.0	SMALL	SMALL																				
1.b./1.b.	instructor seemed genuinely concerned with whether students learned?	5.0	5.0	5.0	4.3	4.3	4.4	0.1	0.0	SMALL	SMALL																				
1.c./1.c.	standards of online behavior were clearly communicated and enforced?	5.0	5.0	5.0	4.4	4.3	4.4	0.1	-0.1	SMALL	SMALL																				
1.g.	If YES, did the instructor provide help?	5.0	5.0	5.0	4.3	4.2	4.3	0.1	0.0	SMALL	SMALL																				
2. TEACHING FOR STUDENT LEARNING To what extent do you agree or disagree that the...																															
2.a./2.a.	course objectives were clearly communicated?	5.0	5.0	5.0	4.3	4.3	4.4	0.0	-0.1	SMALL	SMALL																				
2.b./2.b.	overall course content was presented in an understandable sequence?	5.0	5.0	5.0	4.2	4.2	4.3	0.0	-0.1	SMALL	SMALL																				
2.c./2.c.	instructor used a variety of methods, as needed, to make content clear?	5.0	4.0	5.0	4.2	4.1	4.2	0.0	-0.1	SMALL	SMALL																				
2.d./2.e.	assignments and tests were connected to course content?	5.0	5.0	5.0	4.4	4.4	4.5	0.0	-0.1	SMALL	SMALL																				
2.e./2.f.	evaluation and grading techniques were clearly explained?	5.0	5.0	5.0	4.2	4.3	4.3	0.0	-0.1	SMALL	SMALL																				
2.f./2.g.	instructions for class activities were clearly communicated?	5.0	5.0	5.0	4.3	4.2	4.3	0.1	0.0	SMALL	SMALL																				
2.g./2.h.	instructor provided useful feedback on student work?	4.0	4.0	5.0	4.1	4.1	4.2	0.1	-0.1	SMALL	SMALL																				
2.h./2.i.	instructor provided timely feedback on student progress?	5.0	4.0	5.0	4.2	4.1	4.3	0.0	-0.1	SMALL	SMALL																				
2.i./2.j.	class sessions (online activities) were well organized?	5.0	4.0	5.0	4.3	4.2	4.3	0.1	-0.1	SMALL	SMALL																				
2.j./2.k.	out-of-class (online) work was useful in understanding course content?	5.0	5.0	5.0	4.2	4.2	4.3	0.0	-0.1	SMALL	SMALL																				
2.k./2.l.	instructor encouraged students to connect course content to issues beyond classroom?	5.0	5.0	5.0	4.3	4.3	4.3	0.0	0.0	SMALL	SMALL																				
2.l./2.m.	course activities challenged students to think critically?	5.0	5.0	5.0	4.3	4.4	4.4	0.0	-0.1	SMALL	SMALL																				
GENERAL INFORMATION How would you compare this course with other courses of similar credits at this level (i.e., 100, 200, 300, etc.) taken at CWU? Was the . . .																															
3.a.	amount of work OUTSIDE of class / online environment	3.0	3.0	3.0	3.4	3.4	3.5	-0.1	-0.1	SMALL	SMALL																				
3.b.	level of engagement/active learning IN class / online environment	3.0	3.0	3.0	3.5	3.4	3.4	0.0	0.1	SMALL	SMALL																				
3.c.	intellectual challenge presented to you	3.0	4.0	3.0	3.5	3.6	3.5	-0.1	0.0	SMALL	SMALL																				

C. GENERAL INFORMATION

On average, students enrolled in face-to-face courses study less, have lower class standing, and take more courses required for General Education credits. Students' expected grades are similar whether they take courses face-to-face, via interactive video, or online. See Table 5.

Table 5 - General Information Averages and Percentage Responses by Students in Face-to-Face, Interactive Video, and Online Courses (Major differences are highlighted)

For this class, about how many hours outside of the class did you spend in a typical 7-day week studying, reading, conducting research, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities (and participating online)? Note: The average is estimated from category midpoints.										
	Replied	0	1-3	4-6	7-10	11-15	16-20	21+	Average	
Face-to-face	26,479	2%	33%	36%	18%	7%	3%	1%	4.9	approx. hrs.per wk.
Interactive Video	1,020	1%	19%	33%	25%	14%	5%	4%	7.1	approx. hrs.per wk.
100% online	8,421	0%	15%	33%	26%	14%	8%	4%	7.6	approx. hrs.per wk.
Why did you take this course? Please mark all that apply.										
	Replied to >= 1	Major	Minor	Certificate	Gen Ed	Instructor	Time / Online	Interest	Other	
Face-to-face	28,598.	55%	8%	4%	25%	9%	9%	18%	4%	
Interactive Video	1,022.	78%	12%	2%	6%	8%	12%	17%	5%	
100% online	8,716.	65%	10%	4%	13%	6%	25%	18%	4%	
What is your class standing?										
	Replied	1st yr = 1	Soph. = 2	Junior=3	Senior=4	Grad.=5	Other	Avg.		
Face-to-face	26,318	20%	17%	29%	27%	4%	2%	2.7	Sophomore - Junior	
Interactive Video	1,009	1%	1%	37%	47%	9%	4%	3.5	Junior - Senior	
100% online	8,368	3%	6%	34%	45%	11%	2%	3.5	Junior - Senior	
What grade do you expect to earn in this course?										
	Replied	A = 4	B = 3	C = 2	D = 1	F = 0	Other	Avg.		
Face-to-face	26,386	49%	37%	11%	1%	0%	1%	3.3	expected grade	
Interactive Video	1,011	47%	41%	10%	1%	0%	1%	3.3	expected grade	
100% online	8,381	60%	30%	7%	1%	0%	2%	3.5	expected grade	

It is interesting that the three instructional methods have: demographic differences in students, differences in the mixture of courses from colleges, and difference in course delivery methods but still have strong and very similar results in course ratings.

V. SUMMARY

A. How did CWU students evaluate their instruction during 2014/15?

On average, student evaluations at CWU are very positive on all questions relating to "Student Learning Environment" and "Teaching for Student Learning." Online students gave median ratings of 5.0 (the highest possible rating) to all questions relating to Student Learning Environment and Teaching for Student Learning. Face-to-face students gave median responses of 5.0 to all but one question.

- B. Do course evaluations indicate any major differences in learning outcomes between courses taught face-to-face, via interactive video, or online?

No, all differences were very small when students were asked questions about “Student Learning Environment” or “Teaching for Student Learning.” Note: there are quite a few covariates:

- students in online and ITV courses were almost one year further advanced in class standing
 - students in online and ITV courses reported that they studied more hours per week
 - students in online and ITV courses were less likely to take a course because it was a General Education requirement
 - Sixty six percent of responses to ITV courses came from the College of Business
 - Eighty three percent of the online responses came from students enrolled in courses from the College of Education & Professional Studies (CEPS) and the College of the Sciences (COTS)
- C. CWU must improve university-wide response rates to online SEOs to have reliable results. Some departments have consistently higher response rates but overall response rates need to improve.



APPENDIX 1

Terms, Acronyms, and Abbreviations

CAH	College of Arts and Humanities
CB	College of Business
CEPS	College of Education and Professional Studies
COTS	College of the Sciences
Hedge's g	<p>A statistical measure of "effect size." "Effect size is a method of quantifying the difference between two groups that has some advantages over the use of tests of statistical significance alone." A pooled standard deviation is used as the denominator in this analysis. A pooled standard deviation is called for when the sample sizes of the variables studied are significantly different. See this conference presentation on effect size: http://www.leeds.ac.uk/educol/documents/00002182.htm</p> <p>Note: Some studies have indicated that Effect Size calculations with ordinal data may over-state the difference in means.</p>
F2F	"Face-to-Face" refers to courses taught in traditional classrooms with students face-to-face with an instructor
FAQ	Frequently asked questions
Form A	Form A is the SEOI form developed for students to evaluate lecture courses that meet face-to-face.
Form W	Form W is the SEOI (or course evaluation) form developed for students in courses taught 100% online using Blackboard.
ITV	Courses taught via synchronous, interactive video.
Likert scale	<p>Many of the questions on CWU's course evaluations use a five point Likert scale arranged in a table format (a visual analog scale). For this analysis a response of "Strongly agree" is assigned a value of 5. A response of "Strongly disagree" is assigned a value of 1. Whether individual Likert items can be considered as interval-level data, or whether they should be considered merely ordered-categorical data is the subject of disagreement. This analysis assumes that the responses can be considered as interval data, especially since the Likert scale items are arranged in a visual analog format. The average or mean is a parametric statistic that is robust to ordinal data. Cohen's d may tent to overstate distances when ordinal data is used.</p>
Median	Mid-point of ranked data. It is a statistical measure of central tendency. For example if the median is 5 on a five point scale, at least 50% of students answered 5.
Online	Courses taught 100% online via Blackboard or Canvas, usually asynchronously.
SEOI	"Student Evaluation of Instruction" CWU's term for course evaluations
St Dev	An abbreviation for "standard deviation" a statistical measure of variability