

Office of Assessment

Fall 2006 Online Course Evaluation

Summary Results

Prepared by Luz Caceda

Introduction

During the Fall 2006 semester, a online version of the course evaluation instrument was administered in a total of 18 courses from 4 colleges: College of Fine Arts and Communication, College of Health Professions, College of Liberal Arts, and Jess and Mildred Fisher College of Science and Mathematics.

This project was a follow up to the Spring 2006 course evaluation pilot. Initial analyses of student response and the instrument suggest response results consistent with the research- based evidence on course evaluations and support both the validity and reliability of the instrument itself.

Background

Using statistical analyses of the Spring 2006 course evaluation results, faculty feedback, and Promotion and Tenure Committee input, a revised online version of the course evaluation was administered in Fall 2006.

This instrument has 30 items: 16 items about course, instructor, and overall perception, 4 items about the use of technology, 6 demographic items, and 4 open-ended questions. Within the 7 participant departments, there were 18 course sections, 13 faculty, and 310 registered students. The response rate was 57% or 175 of the 310 registered students. The following table presents this sample by department.

Colleges	Program	Enrolled	Respondents	Response Rate
CFAC	Graphic Design	23	14	60.9
CHP	Health Profession	30	23	76.7
	BTPS in Allied Health	19	13	68.4
CLA	English	107	53	49.5
	Human Resources	85	49	57.6
CGSR	Homeland Security	34	17	50.0
	& IT Architect	12	7	58.3
Total		310	176	56.8

Analysis

Analysis of the data was conducted in two parts. The first part was an analysis of the student responses. This analysis was conducted by course and by all online courses.¹ Summary reports were prepared and distribute to the faculty who participated in the pilot. Faculty reports contained the instructor's results and overall online courses results. The second part of the analysis was a statistical analysis of the instrument itself. This consisted of factor analysis, reliability analysis, comparison of means, and collinearity.

¹ Since only a few courses for these specific departments have participated at this time, overall department and college data were not available for comparison by department or college.

Factor analysis was used to identify a small number of factors that explain most of the variance observed in a much larger number of variables. Reliability analysis was used to study the properties of the scales created through factor analysis and the items that make up these scales. Comparison of means was used to explore patterns of relationships between variables and to look at whether different groups or categories of respondents are responding in different ways. Collinearity was used to identify if two variables are overlapped or measuring the same characteristic.

Factor Analysis

Factor analysis of the 20 non-demographic variables in this instrument was conducted using Varimax extraction and a rotated correlation matrix solution that produced three component factors.

The first factor has nine variables strongly correlated with curriculum and the second factor has seven variables strongly correlated with pedagogy. The third factor has four variables strongly correlated with the use of technology. These four variables were added to the online version to incorporate the technology factor in the instrument and are not included in the traditional course evaluation format.

Correlation analysis of the two factors produced a statistically significant correlation of .869 indicating a strong and positive relationship between the two factors. Factors and variables within each factor are listed in the following table. Factors and variables are in order of the strength of their correlation.

Curriculum	Pedagogy	Use of Technology
Methods for evaluating my work were applied fairly	S/he gave timely feedback on my academic performance	It was easy to use the online technology associated with this course
Course objectives were clearly stated on the syllabus	S/he was accessible to help with this course as outlined on the syllabus	When I had a problem with the online technology, the university resolved it promptly
Tests and/or assignments reflected the primary content of this course as outlined on the syllabus	The instructor	The online portion of this course provided opportunities for interaction with the instructor and other students
S/he provided clear grading standards.	S/he encouraged my participation throughout the semester	The instructor of this course used the online technology effectively
Assignments asked me to integrate information from various sources	S/he challenged me to think in new ways.	
I learned a great deal in this course.	The course as a whole	
S/he explained important ideas clearly.	The course content	
I worked hard to meet the requirements of this course		
Course assignments challenged me intellectually.		

Scaling and Reliability Analysis

Scaling is a computation process that creates new variables based on grouping contiguous values of existing variables into a limited number of distinct categories. Three scaled variables were created using factor analysis results as a guide. Reliability analysis using Crombach's alpha on these three scales demonstrated internal consistency of the three scales variables and the individual responses from within which these variables had been generated. Alpha reliability results close to 1 indicate a strong relationship among individual variables within the scale and consistency across response on these items. The following table shows the alpha reliability for each of the scaled variable, and the reliability of the overall questions independent of the scaled variable pedagogy.

Scaled Variable	Alpha Reliability
Curriculum	0.910
Pedagogy	0.931
Use of Technology	0.851
Pedagogy without the overall items	0.862
Overall Items	0.924

Comparison of Means

Mean responses were compared by demographic variables. The instrument has six demographic variables: reason for enrolling in course, hours spent preparing for the course, hours spent on line, current year in college, highest level of education attained prior enrolling, and the willingness to recommend an online course to others.

Statistically significant differences ($p \leq 0.000$) were found when comparing means on two scaled variables: curriculum and pedagogy using hours spent preparing for the course.

Hours per week spent preparing for the course	Curriculum	Pedagogy	Use of Technology
Less than one hour	2.80	2.60	4.00
One to two hours	4.09	3.91	4.50
Three to four hours	4.15	4.09	4.42
Five to six hours	4.15	4.14	4.38
Seven or more hours	4.44	4.27	4.57
Total	4.12	4.02	4.43

Students who spent less than one hour per week preparing for the course tended to scored lower in the curriculum and pedagogy scales. This do not happened with the use of technology scale.

Similar differences were found when comparing the time spent online for this course. Students who spent between three and six hours during the week tended to score higher on the pedagogy scaled. Statistically significant differences were not found for curriculum and use of technology scaled variables.

Hours per week spent preparing for the course	Curriculum	Pedagogy	Use of technology
Less than one hour	3.63	3.33	4.43
One to two hours	4.10	3.99	4.37
Three to four hours	4.23	4.20	4.60
Five to six hours	4.23	4.39	4.13
Seven or more hours	4.06	3.76	4.28
Total	4.12	4.02	4.42

Statistically significant differences were found when comparing students' willingness to recommend an online course to others. Students who would recommend an online course tended to score higher in the three scaled variables.

Would you recommend an online course to others	Curriculum	Pedagogy	Use of technology
No	2.99	2.62	3.75
Yes	4.29	4.23	4.51
Total	4.11	4.02	4.43

Collinearity Analysis

The variables: time spent online for this course and time spent preparing for this course showed comparable distribution and high correlation (0.611, $p=0.01$). The collinearity analysis showed that these two variables were collinear and correlated.

Final Comments

Analysis of data supports the validity and reliability of the instrument. Factor analysis produced a strong cluster of variables that demonstrates internal consistency, including the use of technology factor which is not included in the traditional paper version. Comparison of means points to statistical significant differences in student response based on the time spent on line for the course, time spent preparing for the course, and the willingness to recommend an online course to others.

On the traditional course evaluation, the demographic variables: reason for enrolling, year in college, expected grade, attendance record, and hours of preparation showed differences in students' responses. In the online version those demographic variables were not included or did not have the same alternatives for responding. Making the demographic variables comparable in the two formats; online and traditional, will allow further comparison between online and traditional courses.

One final consideration for the online format would be to make a clear differentiation between the variables: "time spent online" and "time spent preparing for the course". This will avoid misinterpretation in further analysis.