



On-Line Course Evaluation Pilot Project at Marquette University: Spring 2008

The Marquette Online Course Evaluation System (MOCES)

Development of the Evaluation Instrument for Online Administration: MOCES. Since spring term 2005 Marquette University has utilized a paper and pencil course evaluation measure from the University of Washington called the Instructional Assessment System (IAS). The IAS is a copyrighted instrument and scoring must be conducted by the University of Washington. The first step in testing an online course evaluation approach was the creation of a reliable and valid evaluation measure by OIRA staff. Research suggests that online measures need to consist of just a small number of clearly relevant items to assure and improve completion and response rates. The measure was developed was derived based on factor analyses on four academic years of Marquette University IAS student course ratings (from the paper and pencil IAS measure). The goals for this new instrument were: (1) decreasing the total number of questions (the IAS has 31 questions), and (2) identifying and using the statistically most powerful questions from the IAS. The resulting measure in MOCES contains a total of 16 questions.

Item selection. As the IAS is a copyrighted instrument, questions to be used in MOCES could not be exact duplicates of those on the IAS. As such, items selected for use (based on results of the aforementioned factor analyses) were carefully reworded to avoid copyright infringement and to best maintain the internal validity of the original IAS items. Most importantly the four core course evaluation items developed for the MOCES that were derived from the four general IAS items¹ used in tenure and promotion and as part of merit decisions were practically indistinguishable in meaning.

¹ *Measurement research on student ratings of courses and teachers consistently support that students can more reliably report overall perceptions of the course and instruction, i.e. overall this was a good course or the instructor is an effective teacher than report on specific items about teaching methods, etc. Most commercial and home-grown course evaluation instruments contain these general items.*

Table 1. The four core items on the IAS and the MOCES

<u>IAS (old)</u>	<u>MOCES (new)</u>
The course as a whole was:	How was this class as a whole?
The course content was:	How was the content of this class?
The instructor's contribution to the course was:	How was the instructor's contribution to this class?
How effective was the instructor in this class?	The instructor's effectiveness in teaching the subject matter was:

Both the IAS and the MOCES used the following response set for these four core questions:
Excellent, Very Good, Good, Fair, Poor, Very Poor

Pilot Study of Online Course Evaluation: MOCES

In spring semester of 2008, a total of 124 course sections with 3,837 students from four departments (biomedical sciences, civil & environmental engineering, journalism, theology), spanning four separate colleges (health sciences, engineering, communication, arts & sciences) and with a variety of course sizes were evaluated online. Students completed the Marquette Online Course Evaluation System (MOCES), an online evaluation form. The purposes of this large pilot project were to evaluate the effectiveness of: 1. an online student course evaluation system versus the current paper and pencil approach and 2. using CourseEval3, a commercial software system to create, administer and report results of online course evaluations.

Results and Commentary

Student and Faculty Satisfaction with the MOCES

As part of this pilot of MOCES, students who participated were asked: “Overall, how did evaluating your courses on-line compare to evaluating courses using paper-and-pencil measures?” Additionally, instructors of the classes that were evaluated by MOCES were asked the same question after all grades had been submitted to the registrar and their course results were available for review. Eighty-eight percent of student respondents and 56 percent of instructor respondents indicated that, overall, they found online course evaluations to be better than paper and pencil measures. Results are located in Table 2

Table 2. “Overall, how did evaluating your courses on-line compare to evaluating courses using paper-and-pencil measures?”

	Number of Responses	Significantly Better	Better	Somewhat Better	Somewhat Worse	Worse	Significantly Worse
Students	2,763	40%	28%	20%	7%	3%	2%
Instructors	32	22%	9%	25%	22%	16%	6%

Additionally, instructors were asked to compare online and paper and pencil administration in respect to each of three specific factors; class time, timeliness of results, and readability of results. Each of these factors had been the cause of frequent complaints made to the Vice Provost and OIRA about the current method (IAS). The ratings on these items are reported in Table 3.

Table 3. “How did conducting course evaluations online compare to conducting course evaluations using paper and pencil regarding:”

Question	Significantly Better	Better	Somewhat Better	Somewhat Worse	Worse	Significantly Worse
Class time taken to announce / administer course evaluations	47%	21%	18%	12%	0%	0%
Timeliness of receiving your course evaluation results	68%	19%	13%	0%	0%	0%
Readability of your course evaluation results	16%	35%	26%	23%	0%	0%
OVERALL	44%	25%	19%	18%	0%	0%

For each of these specific aspects over 75% of the instructors reported the online method was better than the paper and pencil method. These instructor ratings seem somewhat contradictory to the lower rating of the overall experience. It could be speculated that while the general idea of changing the method of evaluation to online course evaluations and/or the use of online technology instead of paper is uncomfortable or less desirable for around 40% of the instructors, the actual specific aspects of the experience were viewed as positive by most.² This has implications for the communications and training for the total implementation of online evaluations.

Student Response Rates on the IAS versus the MOCES

A concern of faculty was that student response rates on course evaluations would decline substantially using online rather than paper and pencil in-class administration. This issue has been addressed in the literature as well. To examine the potential response rate difference, the student response rates using the MOCES were compared to the student response rates for the past three semesters for the IAS. The online course evaluation response rates were higher in one, comparable for one and lower in three of the pilot departments than the average paper and pencil response rates. See Table 4.

² Social influence theory posits that individuals have two natural forms of resistance to any change; opposition to a specific detail of the change and generalized resistance to change in general. Opposition can be addressed by information and resistance by time and experience.

Table 4. Mean Response Rates on the IAS versus the MOCES

Department	IAS				MOCES	Response % Needed for 95% Power (Spring 2008)
	FALL 2006	SPRING 2007	FALL 2008	AVERAGE (3 semesters)	SPRING 2008	
Biomedical Sciences	60%	59%	62%	61%	77%	26%
Civil & Environmental Engineering	83%	85%	83%	83%	70%	45%
Journalism	88%	94%	84%	87%	68%	66%
Theology	88%	85%	89%	87%	72%	17%
OVERALL	79%	76%	80%	78%	73%	10%

From a tests and measurement perspective a score on a measure must be an accurate reflection of a total group, not just of the individuals completing the measure. Therefore, the real concern with a response rate is that the portion of students responding is sufficient to be representative of a given set of students (in this case students enrolled in a class). The statistical term for this is “power” and the statistical test to determine the necessary response rate is a “power analysis”. In this case the simple power analysis result confirms that the response rates on the MOCES exceeded the total needed for 95% confidence. That is, though the response rates on the MOCES were lower than previous IAS response rates in three of the five departments, the MOCES response rates for all five departments are within the range needed for statistical power. Thus the response rates are more than adequate for the responses of the students responding to be deemed representative of the responses all of the enrolled students would make. See far right column in Table 4.

The lowest response rate among the departments occurred in the journalism department. A further examination of the spring journalism course offers revealed a greater use of participating faculty as instructors in these classes (73%) compared to the other three departments. Although presentations that included ways to increase student participation and instructional demonstrations were made to faculty in each of the four departments by OIRA staff (in some cases more than one presentation/demonstration was made), practically none of the participating faculty attended the presentation/demonstration made in the journalism department.

Student Response Valences on the IAS versus the MOCES

A concern of the faculty was that student course evaluations collected online would be on average more negative than those collected using the paper and pencil method. Specifically, many faculty were concerned that both fewer students would respond using the online MOCES and that of those who did respond would be substantially more caustic and negative in their

responses. The results did not support this concern. The valence of the student ratings on the four core questions used at Marquette for faculty personnel decisions was comparable between the MOCES and the IAS (no significant difference). Results of the MOCES should serve to calm concern regarding overall student response rates as well as anxiety about whether negative or disgruntled students respond disproportionately on the MOCES

Table 5. Mean Course Ratings on the Four Core Questions on the IAS and MOCES

Department	Adjusted* IAS				MOCES
	FALL 2006	SPRING 2007	FALL 2008	AVERAGE	SPRING 2008
Biomedical Sciences	4.8	4.6	4.9	4.8	5.1
Civil & Environmental Engineering	4.8	4.7	4.7	4.7	4.8
Journalism	4.8	4.7	4.7	4.7	4.9
Theology	4.7	4.8	4.8	4.8	4.8
OVERALL	4.8	4.7	4.8	4.8	4.8

* The IAS used a 0 to 5 scale whereas the MUOCES used a 1 to 6 scale. Therefore for comparison purposes IAS scores were adjusted to a 1 to 6 scale, to be similar to the MOCES scores.

Summary and Conclusions

Both the qualitative and quantitative results from the spring 2008 pilot of the online MOCES indicate that the online course evaluation method was successful in terms of: (a) being viewed favorably by students and most faculty instructors compared to the paper and pencil IAS method, (b) the overall student response rates were more than adequate, and (c) response scores on the four core course evaluation questions appear to have both reliability and validity with the prior instrument delivered by paper and pencil. It is recommended that Marquette University switch to an online course evaluation system using the product CourseEval given the distinct advantage in ease of administration and the comparability of psychometrics.

Cost Analysis

Based on available actual expenditures for the administration of the IAS and the estimated costs to administer the MOCES online with the CourseEval software system we can anticipate budgetary savings of over \$15,000 per year plus savings in OIRA exempt staff time of 175 hours. Additional savings in cash and staff time will be achieved in subsequent years as all set up and installation will have been achieved.