

"Traditional and web-based course evaluations – comparison of their response rates and efficiency"

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Abstract

The majority of researchers consider that students' evaluations are valid, reliable, and suitable method of evaluating university teaching. With the rapid development of Internet-based technology there has also been an increased focus on reducing the cost and time required to administer and record these evaluations. These online course evaluations of teaching have the potential to provide the more sophisticated survey processes since they allow refined screening, skips, and fills. The layout and design can be made very attractive so that the survey process can seem less burdensome to the students. However, the major concern in Internet surveying is coverage bias or bias due to sampled students not having or choosing not to access the Internet. In other words, web-based survey could elicit lower student response rates. To investigate this, a pilot study was conducted at the Faculty of economics at the University of Belgrade comparing the qualities of two modes of an identical survey. Two randomly chosen groups of students were surveyed. One group received a "paper-and-pencil" version of the survey; the other group was directed to a Web-based version of the survey. This paper compares efficiency and student response rates between these two modes. We conclude that online evaluations appear to provide more effective methods of gathering constructive feedback than traditional paper-based methods. The question remains how to motivate students to complete the online survey.

Keywords: course evaluations, online evaluation, Internet survey, response rate

1 Introduction

Most universities ask their students to complete course evaluations as part of the institution-wide assessment process. Haskell (1997) states that student evaluations of faculty members were first used at the University of Wisconsin in the early 1920s primarily for "informational feedback so that faculty might be more aware of student needs." However, in the 1960s as more universities began to use these instruments in their curricula, the purpose clearly changed to a decision-making tool regarding salary, promotion, and tenure. Presently, these types of surveys probably constitute the most widely used form of teaching evaluation in higher education.

Student evaluations of teaching (SET), properly constructed and administered, provide valid and reliable data for improving teaching as well as for documenting teaching performance for administrative review. This claim is supported by a large body of research (e.g., Aleamoni, 1981; Centra, 1989; Doyle, 1975; Marsh, 1992; Theall et al, 2001). For example, in the U.S. student ratings are currently used in over ninety-five percent of postsecondary institutions (Trout, 2000). These ratings are: 1) multidimensional, 2) reliable and stable, 3) relatively valid against a variety of indicators of effective teaching, and 4) relatively unaffected by a number of variables hypothesized as possible biases.

Because of their widespread use and influence on promotion and tenure decisions, it is not surprising that in higher education the most prevalent area of research has revolved around the question of whether SET are valid measures of teaching effectiveness. Over 2000 articles and books have been written on this topic over the past 70 years (Wilson, 1998, Ory, 2001).

Usually SET is conducted at the end of the semester. The majority of faculties use "paper-and-pencil" evaluation systems. However, with the rapid development of Internet-based technology, recently there has also been an increased focus on reducing the cost and time required to administer and record these evaluations. A report on higher education conducted by Hmieleski (2000) noted that of the 200 institutions ranked as the most "wired," only 2

reported institution-wide uses of online evaluation systems. At an international conference in 2002, Thorpe stated, "The use of online course evaluation systems is relatively limited in higher education. However, this approach is gaining momentum".

The literature about online student course evaluation (OSET) indicates advantages and disadvantages of using this approach. Advantages include: OSET provide rapid feedback, is less expensive to administer, the layout and design can be made very attractive so that the survey process can seem less burdensome to the students, is less vulnerable to professorial influence, allows students as much time as they wish to complete and allows students multiple opportunities to evaluate faculty members. Disadvantages to this mode are: OSET requires computer access and is considered less accurate by faculty unfamiliar with online methods that prefer the traditional in-class paper version. However, the major concern in Internet surveying is coverage bias or bias due to sampled students not having or choosing not to access the Internet. In other words, web-based survey could elicit lower student response rates.

The next section of the paper provides a summary of the literature on the use of online course evaluations versus traditional paper evaluations in higher education. The second section describes a pilot study conducted at the Faculty of economics at the University of Belgrade that compared online course evaluations with traditional paper-based evaluations, and summarizes the findings.

2. Comparison of Traditional versus Online Evaluations

In one of the earliest studies on the topic, Woodward (1998) compared traditional course evaluations with online evaluations at Rutgers College of Pharmacy. Students in one 3-credit hour course were randomly divided into 2 groups. Using the same course, a comparison was made between fall semester 1996 with fall semester 1997. Demographics for the 2 groups were similar, evaluation rates were not statistically different (97% paper and 88% online), and response rates to open-ended questions were relatively similar (45% versus 33% respectively).

Layne (1999) conducted electronic and paper course evaluations to a sample of 2,453 students at a large southeastern university in the U.S. whose students were considered computer literate. The students were randomly assigned to either the traditional paper group or the web-based group and the same survey instrument was used in both groups. Students were more likely to evaluate their professors when the evaluations were conducted in class (in-class response rate of 60.6% versus online response rate of 47.8%). The average ratings did not differ between methods. The authors also stated, "An unexpected finding of the study was that students who completed the survey electronically were much more likely to provide comments about their course and instructor than were students in the paper-and-pencil group."

Ravelli (2000) administered a pilot study of an online assessment with 5 volunteered faculty courses. Separate focus groups of the students and faculty members were also conducted in this study to further explain the findings. Fewer than 35% of students completed the online survey. Researchers discovered the students' favorite instructor received the lowest number of assessments. However, student focus groups provided the authors with an explanation for this behavior: "Students expressed the belief that if they were content with their teacher's performance, there was no reason to complete the survey [in any format]." Thus, it was interpreted that the lack of student participation may be an indication that the teacher was doing a good job and not the reverse. During the faculty focus groups, the authors found "faculty were equating the number of assessments with their teaching performance, and this interpretation may have been misguided." The authors assert that the qualitative findings

support that a low student response rate does not diminish the value of providing students access to the assessment.

Baum et al., (2001) found that average scores are the same or slightly higher when on-line evaluations are used. However, response rates were significantly lower when evaluations were done online, unless a grade point bonus was given to students who had completed online evaluations. If this was done, there was no significant difference between the response rates for the two methods.

Kasiar, Schroeder and Holstad (2002) compared the traditional paper and pencil format with online evaluation in a study consisting of 169 students in a multiple-lecturer pharmacotherapy course. Fifty students were randomly chosen to complete the exact same survey online, and the remaining 119 students completed the traditional paper evaluation. The authors concluded that "the web-based process yields quantitatively and qualitatively superior student comments, enhanced student satisfaction, and more efficient use of faculty and staff time".

Dommeyer, Baum, Chapman and Hana (2003) performed a study comparing student response rates on paper course evaluations with those that were collected online. The instructors were randomly assigned to 1 of 3 online treatments or to a control group. The online treatments were: (a) a very modest grade increase (a fourth of a percent) for completing the online evaluation; (b) an in-class demonstration of how to log on to the website to complete the online evaluation (although participants completed it outside of class); and (c) early feedback on their course grade (by postcard and/or posting grades online) if 67% of the class completed the online method. The use of the online evaluation mode was lower (29%) than use of the in-class evaluation method (70%). However, when any type of grade incentive (grade increase or early grade reporting) was used, the online response rate was comparable to the response rate by the traditional method.

Anderson, Cain and Bird (2005) discuss a pilot study that was conducted at the University of Colorado College of Pharmacy (UKCOP) in fall 2003 to compare online course evaluation with traditional paper format. The study yielded response rates of 85%, 89%, and 75% in the respective courses. Moreover, comments provided in the online evaluations were on average more frequent and lengthy than those handwritten on the paper forms. Following the success of the, the faculty of the UKCOP voted to conduct all course and instructor evaluations online for the spring 2004 semester. Furthermore, as a measure to ensure that response rates remain high for future course evaluations, faculty members decided to make completion of the course evaluations mandatory for each class. They included this requirement in their syllabi for spring 2004 and indicated that noncompletion of an evaluation would result in a grade of incomplete (I) for the course. They concluded that when a completion incentive was implemented, student response rates improve dramatically over those for traditional evaluation methods.

3. Pilot Study

In this section we discuss a survey conducted in May 2006 at the Faculty of economics, (University of Belgrade) that compares traditional paper-based SET with Internet-based evaluation.

3.1 Methods

A webpage was designed in which the same questionnaire that was used for the traditional paper evaluation system was placed on the Internet (see Appendix). Using their students' identification numbers 800 first-year students were divided into two equal groups. One group has received paper-based questionnaire, and the second was asked to fill out the web-based form. The evaluation paper included four sections: (1) one question requested from students

to express their opinion on the textbook, (2) five questions were related to the quality of lecturer, (3) four questions were associated with the quality of tutorials and (4) one open-ended question titled "additional comment/suggestion". Each question from the first three sections was based on the Likert scale, and scores labeled from 5 to 10 (in the same way as the student mark).

Quality of comments were designated and evaluated by course coordinator and placed in one of six categories: (a) constructive criticism, (b) positive feedback on things that worked well, (c) ideas of ways to improve lecture, (d) ideas of ways to improve the course, (e) negative comments and (f) vulgarity. All students had previously used only traditional methods in past courses.

3.1 Results and discussion

Out of 400 students in the "paper-and-pencil" group, 370 filled out the questionnaire (92.5%) during the normal lecture time. The response rate for the online group was very poor at first, only 18 students (0.045%) responded during first several days after they were asked to participate. Only when they were promised that the exam questions for the oral part of the exam would be posted on the web if they took part, the response rate dramatically increased to 52% (180 students additionally responded to the survey questions during the weekend).

The result for each of the question (apart from the comments) is shown in the next table.

Table 1 Average scores of the traditional and web-based course evaluation

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Paper-based	7.24	8.72	9.75	9.83	8.85	9.34	9.17	8.62	8.06	8.67
Web-based	7.80	8.94	9.61	9.74	8.83	9.25	9.30	9.37	8.76	9.12

The correct interpretation of the above results requires one clarification. Both student groups had the same lecturer, but different tutors (more precisely there were four tutors). Therefore, the students' responses on the tutorials quality are not directly comparable. Still, there exists extremely high correlation between two sets ($r = 0.9927$, p -value = 0).

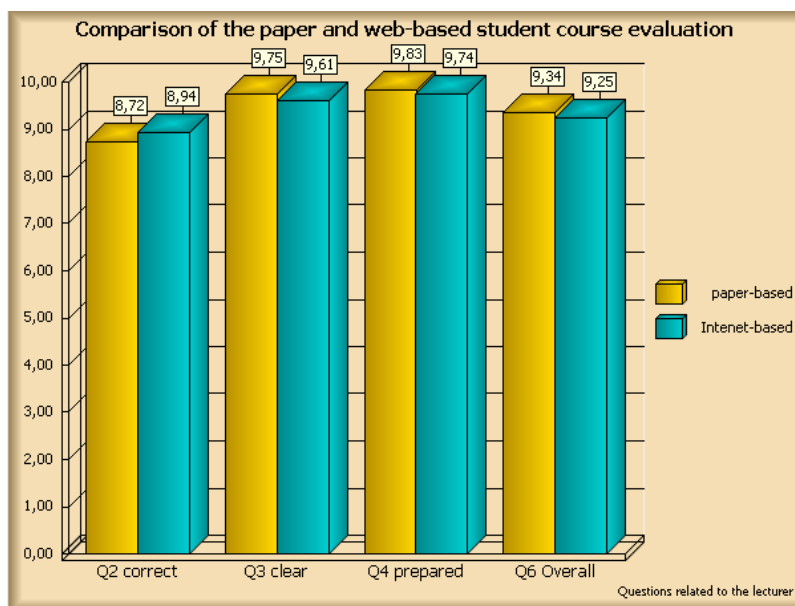
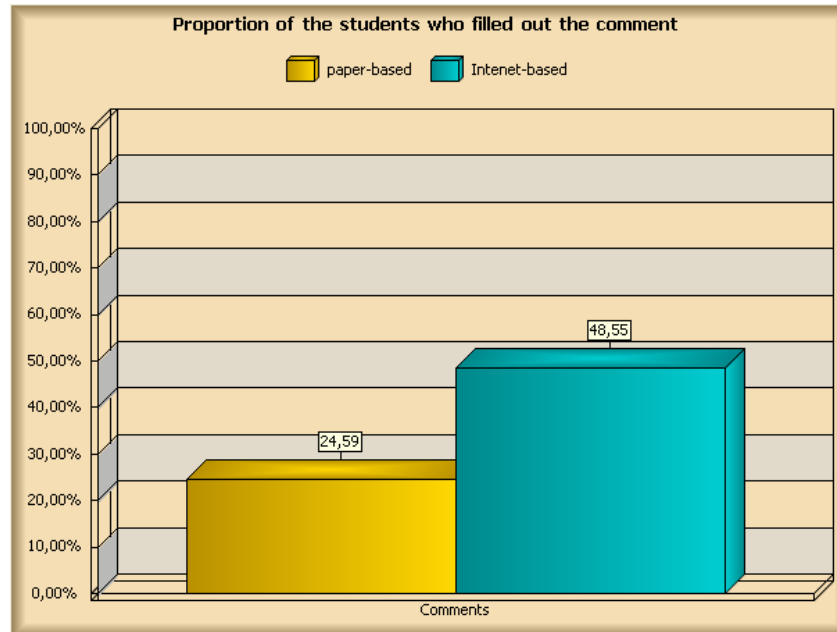


Figure 1 Comparison of the traditional and Internet based results for the questions on the lecturer

From the practical point of view, for the course coordinator there are two important issues to be tackled: lower average mark for the tutorial questions of the paper-based group and the apparent inconsistency in the student opinion in respect to the quality of the textbook. More importantly, however, this study confirms that the students more freely respond to the web-based open questions. This can be clearly seen in the next diagram.



The following table depicts the structure of the comments in accordance with the above mentioned scheme.

Table 2. Comment content and quality (percentage)

	Paper-based	Internet-based
Constructive Criticism	19.44	21.31
Positive Feedback	45.83	47.54
Lecture Improvement	13.88	13.11
Negative Comments	12.50	13.11
Vulgarity	0.00	1.63
Other	8.33	3.28

3.2 Study Limitations

Several limitations to this study exist. First, only one course was involved in the study (The basis of statistical analysis); however, there is no reason to believe that these results cannot be replicated in other courses. The second limitation is that the two groups of students were not randomly divided. Finally, the information on the Internet availability among the student population was not previously obtained. As a consequence, it is not feasible to derive conclusions about the structure of the students who did not respond. We do hope, however, that this study will encourage other Belgrade university staff to conduct similar studies and introduce web-based evaluations for their courses.

4 Conclusion

Internet surveys are clearly going to continue to grow in popularity as the problems of coverage bias and unfamiliarity with the Internet subside. In addition, the tools for conducting

Web-based surveys will continue to grow in sophistication and ease of use as will our knowledge on how best to employ this survey methodology.

It is our hope that the web-based technology will expand the utility of the evaluation system to improve teaching and learning. In the future, such evaluation tools could be used to provide immediate student feedback via automated results, report individual responses rather than "class average" responses, and present student comments in an organized format such that they can quickly be addressed.

However, the key question regarding the response rate remains – how to stimulate and motivate students to participate in the online SET.

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Appendix

Questions for the Bases of the Statistical analysis course evaluation

A) Textbook						
Q1 Rate the quality of the textbook	5	6	7	8	9	10
B) Lecturer						
Q2 The lecturer has correct relationship with the students	5	6	7	8	9	10
Q3 Lecture content was presented in an understandable and clear manner	5	6	7	8	9	10
Q4 Lecturer is well prepared	5	6	7	8	9	10
Q5 Lecturer stimulates critical thinking	5	6	7	8	9	10
Q6 Overall lecturer rate	5	6	7	8	9	10
C) Tutorials						
Q7 The tutor (assistant) has correct relationship with the students	5	6	7	8	9	10
Q8 Tutorials were presented in the understandable and clear manner	5	6	7	8	9	10
Q9 Tutor (assistant) provides active learning environment	5	6	7	8	9	10
Q10 Overall tutorial rate	5	6	7	8	9	10
D) Q11 Any additional comment / suggestion						