Creating an Online Course Evaluation Website

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Abstract

Courses have been offered "online" at the University of Wisconsin Stevens Point for a number of years, but to date have been evaluated using traditional paper and pencil methods. This paper describes the development of a prototype website for online course evaluation done as an individual student project in a web programming course. Issues considered in the paper include security, user interface, storage of results, and reporting mechanisms. The limitations of the current project are briefly discussed.

Introduction

The University of Wisconsin Stevens Point has been engaged in distance education for many years. Since 1996 many of the courses have been offered "online", i.e., via the Internet. Course evaluations continue to be done, however, with paper and pencil forms and relying on snail-mail for the return of the documents to campus.

Having taught several online courses and realizing this discrepancy, the instructor offered the concept of an online evaluation site as an individual student project for his web programming course in the Fall Semester 2001.

This paper describes the development of an online site for course evaluation and the parameters and constraints encountered in the initial iteration of creating the site. Issues covered include various design aspects, security (password protection of the site), user interface, storage of data, and reporting mechanisms. The paper also describes features desired in a functional online evaluation website but not included in a one-semester project for time reasons.

The Design

Early in the process some guidelines were discussed that dictated much of the design. As a pilot, the first iteration of the site would consist of "webizing" the paper-and-pencil evaluation (see Appendix A) of online courses instrument developed by the instructor.

Because the goal was to create a survey instrument rather than a survey development tool, evaluation questions would be entered directly into a database. (Eventually individual faculty members would need the ability to customize their own instrument and that would require a form for submission of additional questions.) The initial questions taken from the existing instrument were based on a Likert-scale, which are easy to respond to and easily represented on the web form by radio buttons. Two input boxes were added to allow for adding text comments on the instructor and the course.

Each student may only submit one evaluation. While the database of answers should not keep track of who submitted what, it is necessary to restrict access so only legitimate students respond, and to "check off" the student from the "class roster" in order to prevent them from submitting again. This was achieved by developing an "invitation" system, which served the dual purpose of notifying a student of the availability of the survey instrument as well as supplying them with the url containing their username and password as described in the next section. Rather than send an e-mail message containing the link, username, and password, all three were wrapped together using the "querystring" method shown in Figure 1.

From the point in the course where the instructor wishes to administer the online evaluation, the following sequence of actions takes place:

1. The instructor logs in to the online course evaluation system. (The network administrator responsible for the evaluation system establishes that username/password.)

2. The instructor makes a request to administer the online course evaluations.

3. The system asks the instructor to supply a list of student e-mail addresses.

4. The instructor submits the class list of e-mail addresses. (Ideally, this list is provided by the network administrator or university information system – in order to avoid keying in lots of addresses!) The list can be copied and pasted into a text box on the submission form.   The addresses should be arranged one per line.

5. The system sends an e-mail message to each student on the list.

6. The body of the message contains an invitation to take part in the course evaluation and a link that includes the complete address for the website – including the student's username (e-mail address) and a password that has been generated by the system.

7. The student visits the site by clicking the link.

8. The system verifies that the student is authorized (legitimate username, password, and has not already filed an evaluation) and presents the evaluation form.

9. The student completes the evaluation form, and submits it.

10. The system tallies the results, and makes note of the student's submission.

11. The instructor can run reports at any time.

Security

Security is achieved through the development of an "invitation-only" approach. Instructors "invite" students to complete the evaluation by submitting student e-mail addresses in a text box from the faculty web page (also password protected). The system then sends each student an e-mail invitation that includes a URL to the evaluation website. The body of the message includes a description of the intent of the message and the link containing the address of the online evaluation website. The address would include the student's e-mail address and a password, as follows:
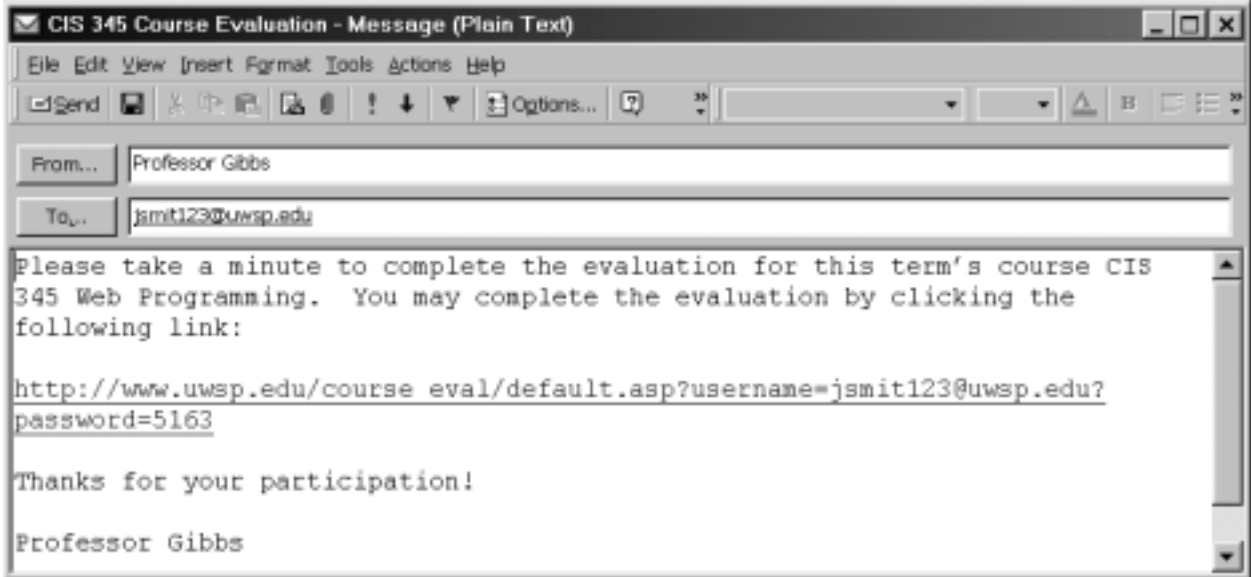
```
CIS 345 Course Evaluation - Message (Plain Text)                    _ □ X
File  Edit  View  Insert  Format  Tools  Actions  Help
⊟Send  ▣  ✂ ▥ ▨  ▧ ❶  ! ↓  ▼  ▤ Options...  ▨    »
From...    Professor Gibbs
To...    jsmit123@uwsp.edu
Please take a minute to complete the evaluation for this term's course CIS
345 Web Programming.  You may complete the evaluation by clicking the
following link:

http://www.uwsp.edu/course eval/default.asp?username=jsmit123@uwsp.edu?
password=5163

Thanks for your participation!

Professor Gibbs
```

Figure 1: e-mail message generated by the system

The password is a random sequence of digits generated by the system. Once the student completes the evaluation their submission is noted by the system and they are prevented from submitting again.

The User Interface – the Front End

The interface of the survey includes questions based on a Likert-scale, which are easy to respond to and easily represented on the web form by radio buttons. Students need only mark their selections and submit the form. Text boxes allow the submission of general comments about the instructor, or about the course.

Data Tables – the Back End

The back-end of the system includes four database tables: a table containing the survey questions, a table of the descriptors of the Likert scale (e.g. strongly agree, agree, disagree, strongly disagree, not applicable), a table for student responses to questions, and a table to maintain student information (username, password, submitted, date submitted). A report of the number and percent of respondents in each category of the ordinal scale for each question is generated upon the request of the instructor.

Comments on the Code

The only error checking built in (client side) is to alert the student to their submission of an "empty" form – that is, a form with no entries checked. (They are free to do so if that

is their intention.) A student may opt to look at the survey and cancel out to return at a later time, using the same link provided via e-mail.

Summary

At present, the system includes these items:
- Password protected login for faculty access.
- Invitation-only access for each student participating in the evaluation.
- A text field for the submission of comments.
- Evaluation questions are maintained in a database, rather than hard-coded into the pages, for maintenance and re-use.
- A report of the number and percent of respondents in each category of the Likert scale.

The project does not include these items, which obviously need to be part of a comprehensive system:
- The ability to obtain student e-mail addresses from the university's mail system, to avoid the need for keying them in.
- An evaluation creation module for use by individual faculty.
- A form for the submission of additional evaluation questions.
- Statistical analysis of the results

The website will be demonstrated to the UWSP office of Extension and Outreach with the intent of serving as a "prototype" or first iteration of a site they may wish to use for their online courses. (The online evaluation demonstrated here could also be used in evaluating traditional face-to-face courses, but to do so would require overcoming decades of inertia using a paper-based system – something not likely to happen any time soon.)

References

Kalata, K. *Internet Programming with VBScript and Javascript – Web Warrior Series: Comprehensive*. Course Technology, Cambridge, Massachusetts, 2001.

Ullman, Buser, et al. *Beginning Active Server Pages 3.0*. WROX Press Ltd, Birmingham, UK, 1999.

Appendix A
University of Wisconsin Stevens Point: Student Evaluation of an Online Course

Course: CIS 300   **Term: Spring 2001**   **Instructor: D. Gibbs**

Please answer each item honestly and thoughtfully. Your responses are anonymous and no results will be released until after grades have been filed. Your feedback is very important in decisions relating to course offerings, format, and instruction.

Part I: Overall Course Evaluation - please use the following scale.

A	B	C	D	E	N/A
strongly agree	agree	uncertain	disagree	strongly disagree	not applicable

A B   C   D   E   N/A   1. I really wanted to take this course.
A B   C   D   E   N/A   2. I worked harder on this course than on most of my other college courses.
A B   C   D   E   N/A   3. Compared to my other college courses, I feel I learned a great deal in this course.
A B   C   D   E   N/A   4. The text(s) and readings were useful in helping me learn.
A B   C   D   E   N/A   5. The assignments (homework, reports, and projects) were useful in helping me learn.
A B   C   D   E   N/A   6. The activities (discussions, small groups and problems) were useful in helping me
                                        learn.
A B   C   D   E   N/A   7. The course was one of the most difficult college courses I have taken.
A B   C   D   E   N/A   8. The tests, assignments and projects focused on the objectives of the course.
A B   C   D   E   N/A   9. The instructor was fair and reasonable in grading exams and assignments.
A B   C   D   E   N/A   10. The instructor and/or syllabus provided an adequate description of the course
                                        and its requirements.
A B   C   D   E   N/A   11. The instructor provided material beyond that offered in the text or readings.
A B   C   D   E   N/A   12. The instructor seemed enthusiastic about the subject matter.
A B   C   D   E   N/A   13. The instructor introduced stimulating ideas about the subject.
A B   C   D   E   N/A   14. The instructor was available to help with questions or homework.
A B   C   D   E   N/A   15. Overall, I consider this instructor to be an excellent teacher.
A B   C   D   E   N/A   16. Overall, I consider this to be an excellent course.
A B   C   D   E   N/A   17. I had the appropriate advising to assist in course selection.

Part II: Evaluation of Aspects of the Distance Learning Experience - please use the following scale.

5	4	3	2	1	N/A
always	usually	sometimes	rarely	never	not applicable

Course Design and Equipment Integration - The instructor:
5 4 3 2 1 N/A   1. designed and integrated interactions that supported the course.
5 4 3 2 1 N/A   2. used the web environment effectively.
5 4 3 2 1 N/A   3. selected appropriate supplementary materials to aid learning.
5 4 3 2 1 N/A   4. presented ideas and information in a variety of ways.
5 4 3 2 1 N/A   5. incorporated appropriate assignments.

Course Process - The instructor:
5 4 3 2 1 N/A   7. introduced the learners to the appropriate use of equipment.
5 4 3 2 1 N/A   8. established realistic goals and objectives.
5 4 3 2 1 N/A   9. encouraged learner interaction.
5 4 3 2 1 N/A   10. used e-mail effectively, when appropriate, to communicate with learners individually and as a group.
5 4 3 2 1 N/A   11. provided prompt and constructive feedback.
5 4 3 2 1 N/A   12. explained grading procedures at the beginning of the course.

Course Presentation
5 4 3 2 1 N/A   13. The class web environment was easy to navigate.
5 4 3 2 1 N/A   14. The class web environment was well organized.
5 4 3 2 1 N/A   15. Web visuals were appropriate to the course.
5 4 3 2 1 N/A   16. Online video clips, if used, were effective.
5 4 3 2 1 N/A   17. Online audio clips, if used, were effective.
5 4 3 2 1 N/A   18. Online testing, if used, was fair.

1. Please check your overall rating of the various aspects of taking this on-line course

	Excellent	Very Good	Good	Fair	Poor	Not Applicable
The registration process	❑	❑	❑	❑	❑	❑
Taking the course over the Internet	❑	❑	❑	❑	❑	❑
The interaction with the professor	❑	❑	❑	❑	❑	❑
The overall learning experience	❑	❑	❑	❑	❑	❑
The interaction with other students	❑	❑	❑	❑	❑	❑

2. What did you like <u>best</u> about taking an on-line course?

_____

_____

_____

3. What did you like <u>least</u> about taking an on-line course?

_____

_____

_____

4. Would you enroll in an on-line course in the future?

  ❑   Yes   ❑   No

5. Why or why not?

_____

_____

_____

6. Overall, how would you rate your educational experience in the web-based course taught over the Internet?

❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor