Web-based Course-exit Survey for ABET EC2000

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Abstract: *This paper describes the implementation of an on-line tool to support consistent student evaluation of instruction. The tool includes interfaces to support chair, faculty and student processes necessary to publish, collect, and report survey information on learning outcomes from individual courses. This work includes tracking relationships of these course outcomes to departmental and program outcomes in the support of continuous quality improvement. The paper describes the design of the web-based course-exit survey and the data collection and analysis processes supported by the tool.*

Introduction

The Department of Electrical and Computer Engineering at Gannon University has developed a web-based course-exit survey in support of its EC2000 evaluation efforts. The department has recently completed a major effort in restructuring and refining its departmental goals and objectives, catalog, and operations in preparation for its next ABET visitation using EC2000 criteria [1]. This effort includes consistent communication and measurement of department outcomes. A key component of this effort is the measurement of course outcomes by identified program constituents.

Among the constituents the department has identified are faculty and students. The department recognizes that there are vast amount of effort needed to collect data from these constituents, let alone getting results analyzed and available to constituents for evaluation in a reasonable time with the limited resources available. These resource constraints are one of the consistent factors in encouraging programs to utilize on-line survey systems [2].

Keys to success in the EC2000 process include involvement and communication, assessment and evaluation, and closing the loop with constituents [3]. Well-designed on-line systems can play a key role in this success, as they support consistent reporting and tracking of student and faculty involvement in the assessment process, provide one means for program evaluation, and provide

reporting mechanisms useful for closing the loop in a continuous improvement process. Making the survey results available in a timely manner is crucial to meaningful evaluation for ensuring consistent program quality measurement and thus facilitating continuous program improvement.

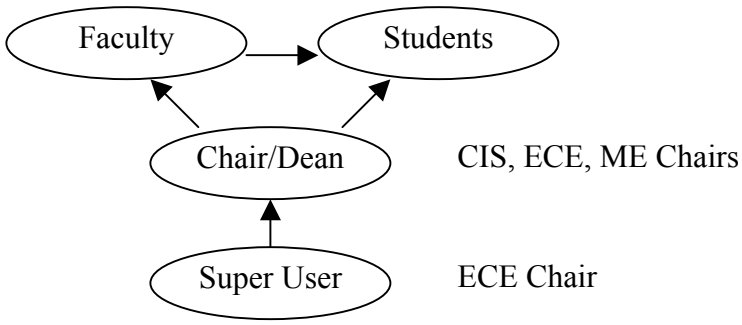
In order to streamline the process of data collection, the department developed a web-based course-exit survey to collect feedback data from faculty and students for every course taught. This system was designed to minimize the effort needed to compile the data for regular analysis. Following other successful assessment models [4], department policies and procedures were enacted to ensure consistent data collection and timely analysis.

Gannon's School of Engineering has formed an ABET committee which consists of the faculty primarily from the ECE and Mechanical Engineering (ME) departments, as these two departments support ABET-accredited programs. Representatives from the Computer and Information Science (CIS) department also participate in this project, as they plan to seek ABET accreditation in the near future. The committee is responsible to evaluate the process in place for departments and to ensure consistency between departments in meeting the ABET's criteria. The committee developed a common format for end-of-semester course (*e.g.* course-exit) evaluations that pertain to ABET evaluation. It consists of the course name, instructor information, course objectives, assessment methods, a qualitative questionnaire section, a quantitative questionnaire section, and an ABET criteria section. This web-based course-exit survey facilitates the process in collecting the data in a timely manner. The web-based tool was implemented and adopted by the ECE, ME, and CIS departments during the spring 2002 semester.

The web-based course-exit survey consists of information on course objectives, assessment methods, and textbooks/tools used for each course as well as the pertinent qualitative and quantitative means of data collection. The survey site also provides means to track course objectives in relation to program outcomes.

Design philosophy:

The web-based course-exit survey design was conceived to help the department Chair reduce the effort required to (a) assist faculty in collecting objective evident to satisfy ABET EC2000 criteria, (b) maintain and track objective evidence. Other design goals include (c) automating parts of the faculty members' ABET documentation process and (d) improve on student's feedback rate relevant to program goals assessment. Since the Chair has the primary duty in overseeing the operation and process of program evaluation, and given the size and limited resources of the program, the web-based tool was designed to center around the Chair as the primary administrator of the ABET process. Figure 1 depicts the relationship as seen from the perspective of the Chair.



Note: the arrow indicates "forward relations" between bubbles, such as the Chair/Dean can view information entered by the faculty and students, whereas the faculty can view only information entered by students.

Figure 1: General relations for the web-tool setup

The super user, the ECE Chair in this case, is responsible for (a) setting up the site for use at the beginning of the semester, (b) website maintenance and update, (c) email generation, and (d) system administrative functions. The next level of administrative function is at the Chair or Dean level. The Chair and the Dean share the same privilege in accessing the database and information. At this level, each Chair can oversee his/her own departmental activities related to the web-based surveys (such as viewing survey results for each course, printing reports, etc.) as well as others'. At the faculty level, each is responsible for his/her own course information setup, self-evaluation, and report generation for the courses taught. At student level, he or she is to answer the necessary course-exit surveys or to view any course-exit survey information. Following subsections describe the flow of actions pertain to this web-based survey starting from the beginning of the semester.

Faculty Site:

In the beginning of each semester, the Chair sends out a general email to remind faculty to setup their course information for the survey. The system enforces a limited time-period for entering course information, typically three-weeks. The email includes the URL of the site and general instructions the faculty might need to setup their course(s). Faculty members can access the site using their university ID and password. There is no difference from the way of accessing their daily email. Once entered, he/she will see a page like in Figure 2.

Home Past Courses Taught Past Course Info

General greeting/info/instructions…faculty name

Setup status	**Select**	**Course Names & Section Numbers**	
√	○	Course 1	print
	√	Course 2	print
	○	Course 3	print

continue

Home: link to login home page

Past Courses Taught: link to courses taught by the faculty. He/she can view his/her own past courses information and survey responses.
Past Course Info: link to all courses offered in the past. He/she can view only the course information setup but not the survey responses.
Setup Status: an indicator for a completed course information setup
Print: generate report on the course information and survey results for that course

Figure 2: Faculty site course selection page

Figure 2 shows the courses assigned to the faculty for the semester. Once a faculty selects a course, he or she is presented with a course setup page. Figure 3 shows the subsequent course setup page.

	Home Past Courses Taught Past Course Info
Course Name/Section Number Instructor name Term	
Course Objective/Assess Methods	This option is always available
Setup Course-Exit Survey	This option is available from date to date
Assess Course-Exit Survey	This option is available after setup is done (from date to date)
View Instructor's Response	This option is available after Assess Course is done (from date to date)
View Student's Response	This option is available after Assess Course period is over (from date to date)

Course Objective/Assess Methods: link to view course information that is setup
Setup Course-Exit Survey: link to setup the course objectives, assessment methods, ABET criteria, etc.
Assess Course-Exit Survey: link to Faculty self evaluation
View Instructor's Response: link to view faculty's own evaluation response
View Student's Responses: link to view students' overall responses.

Figure 3: Faculty site – a specific course page

The "Course Objective/Assess Methods" is generally available at all time once it is setup via the link "Setup Course-Exit Survey ". The "Setup Course-Exit Survey " link is made available at the beginning of the semester as specified during the period set by the super user. By clicking on this link, faculty is lead to the following three pages in sequence: Course objectives and assessment (Page 1), Qualitative and quantitative assessment (Page 2) and Criteria fulfillment (Page 3). Each of these pages is discussed in order.

Home Past Courses Taught Past Course Info

General instructions…

Or use past course template

← link to edit course objectives

Course Objectives:

Obj1: …

Obj2: …

← link to edit assessment methods

Assessment Methods:

Homework: …

Examination: …

← dynamic displayed table

Assessment Methods	Obj1	Obj2
Homework	√	
Examination		√

edit

← link to edit textbook & tools

Textbook & supporting tools:

Text: …

References: …

Software: …

Continue to page 2

Figure 4: Page 1 --- course objectives and assessments

In Page 1 as shown in Figure 4, there are three components to be completed. They are course objectives, assessment methods, and textbook & supporting tools. Links are underlined texts provided in the page to enter all three components. To enter course objective descriptions, the link "Course Objectives" will lead to a page where faculty can enter each objective in sequence in its own text box. A "more" link is provided to give more text boxes if needed. The faculty enters the components of the assessment methods in a similar manner. Instead of having "obj1" or "obj2" as the textbox titles, the titles are pre-defined as "Homework", "Examination", "Project" and "others". In addition to the "more" feature, a provision is also given to edit the textbox's title if desired. By doing this way, we maintain the flexibility of supporting custom assessment methods for each course.

After identifying the objectives and assessment methods to be used in the course, a table is dynamically displayed with the objectives across the top row and assessment methods on the right column as indicated in Figure 4. The faculty then marks the relationship between the objectives defined against the assessment methods. An "edit" feature is also provided if faculty choose to edit the relationship at a later time. Similarly, the faculty can fill in the section on "Textbook & supporting tools" in a manner similar to the "Assessment Methods" section. The pre-defined textbox titles are given instead as the "text", "references", and "software", respectively. If this course has been offered before, the past course objectives and assessment methods will appear as a link as "use past course template" at the top of the page. By selecting

this link, the past information will be imported to the current page for further edition if desired. Once completed, the faculty is ready to proceed to the second page as follows:

Home Past Courses Taught Past Course Info

Instructions…

Quantitative Section:
Please rate this group of students' ability to the following aspect of the course

Obj1: … 1 – 5 scale rating and a button for "not applicable"
Obj2: … 1 – 5 scale rating and a button for "not applicable"

Rate how much each of the following course items contributed to their learning so far:

Presentations/class notes
Homework & project assignments
Textbook(s)
Software resource(s)
Other resource(s)
} 1 – 5 scale rating and a button for "don't know"

Qualitative Section:

1. Comment on any material you feel should be omitted from the course in the future
2. Comment on any material whose presentation you feel should be shortened
3. Comment on any material that should have greater coverage in the future semesters
4. Comment on any material that was not covered but should be included in the future semesters.
5. Comment on how the textbook supported the learning in the course
6. Suggested comments for future improvements

Continue to page 3

Figure 5: Page 2 --- quantitative and qualitative section

In Page 2, there are two major sections, quantitative and qualitative sections, as shown in Figure 5. Here the tool automatically ports the previously defined course objectives to the quantitative section. Each objective is scaled with a rating 1 – 5 of "strongly disagree" to "strongly agree" accordingly. Each objective (indicated as underlined text in Figure 5) is also a link to allow faculty to further define sub-objectives if desired. If doing so, the sub-objectives will appear dynamically under the corresponding main objective with the same rating scale. An additional quantitative section is pre-defined to rate on the course items such as (a) presentations/class notes, (b) homework & project assignments, (c) textbook(s), (d) software resource(s), and other resource(s). Each course item is given a rating 1 – 5 of "not at all" to "extensively" accordingly. A pre-defined qualitative section is added here as well to include questions which the ABET committee believes will benefit the evaluation process for each course offered. At this point, the pre-defined quantitative and the qualitative sections are not editable. If the faculty did not define any sub-objectives, then the course setup is nearly complete. The last page is to complete the section on ABET criteria as depicted in Figure 6.

Home Past Courses Taught Past Course Info

Instructions…
Identify how this course contributes to the program objectives:

Criteria Fulfillments:	**Obj1**	**Obj2**
ABET Criteria:		
a) Apply knowledge of Mathematics, Science, and Engineering	√	√
b) Ability to design and conduct experiments; Analyze and interpret data		
c) Design system, component, or process to meet needs	√	
d) Function on multi-disciplinary teams		
e) Identify, formulate, and solve engineering problems	√	
f) Understanding of professional and ethical responsibility		
g) Ability to communicate effectively		
h) Broad education necessary to understand impact of engineering solutions		
I) Recognition of need to engage in lifetime learning		
j) Knowledge of contemporary issues		
k) Ability to use techniques, skills and modern tools	√	
IEEE competencies for ECE department related degree programs:		
Knowledge of Probability & statistics & applications		
Knowledge of Discrete Mathematics		
Knowledge of mathematics through diff. & integral calc		√
Knowledge of Computer Sciences		√
A&D of Complex electrical & Electronic Devices		
A&D of Software		
A&D systems containing HW & SW components		
Department specific competencies:		
Leadership roles on projects, teams, or in society		
Development of an appreciation of diverse cultures and societies		
Informed literary and aesthetic judgments		
Able to handle the requirements of Grad School or Professional work		
Values Liberal/Diverse Education		
Sound preparation and adaptation for exciting, rapid changing area of technology		

Final submission

Figure 6: Page 3 -- criteria fulfillments

Figure 6 shows how the previously defined course objectives satisfying (a) the a – k ABET criteria, (b) the IEEE competencies for departmental related degree program, and (c) the department specific competencies. As shown in Figure 6, the section on IEEE competencies and department specific competencies are tailored for the ECE department. The ME and CIS departments have different sets of criteria displayed accordingly. Faculty are to mark the corresponding relationship between the course objectives defined against the criteria accordingly. Once completed, a final submission will end this session.

Once the course survey information is setup, faculty are allowed to modify the information anytime within the time frame specified, by going thru the same process laid out earlier. Once the setup period is over, the "Setup Course-Exit Survey" feature in Figure 3 is disabled. Only the "Course Objective/Assess Methods" feature is on (an always available feature) when the faculty returns later to the site for viewing. In addition, only the Page 1 information is made available for viewing. A "check" mark is also made on the corresponding course in Figure 2 to indicate its setup status. The faculty can then proceed to complete the rest of his/her course survey setup. At this point, Page 1 information is made available for both the faculty and students at any time. Page 2 information, however, is the actual course survey page will only be available towards the end of semester when it is time for course evaluation. The faculty himself/herself as well as the students in his/her class will assess the same information setup on Page 2 as shown in Figure 5.

Towards the end of the semester, each faculty will receive emails alerting him/her that (a) to complete his/her own course survey, (b) the available period for evaluation, (c) list of courses they teach for the semester that needs evaluation. The faculty also receive separate emails that list all students who have not yet completed their online course survey for each course taught. The email is setup by the super user and is sent out on a regular interval to the faculty to alert him of his own course survey status as well as the class standing on the corresponding survey. This approach gives faculty a chance to inform his/her students in class to complete the necessary survey.

Even though the faculty receive emails informing them about which students have not completed their survey(s), the system provides no mechanism to identify which survey corresponds to which student. Thus, privacy of the student feedback is consistently maintained.

Students are not the only constituents who need to complete the survey. At the same time when the "Assess Course-Exit Survey" feature is turned on in Figure 3, faculty can gain access to this page by following the same process as described earlier (See Figure 2). Like students, faculty have only one chance to submit the complete self-evaluation survey. Once submitted, the "Assess Course-Exit Survey" feature is immediately turned off to ensure data integrity. The "View Instructor's Response" feature is turned on following the disabled of "Assess Course-Exit Survey" feature. However, the "View Students' Responses" feature will only be turned on after the grade is submitted to further ensure confidentiality of students' identity in data entry even though students' identity flag was not implemented in the design.

From a faculty perspective, some of the benefits of the tool are:

1. *Ease of access*: Faculty can fill out information from anywhere in the campus network. Similarly, faculty have access to past information, supporting their ability to recall what both their and their students' thoughts were about a particular run of a particular course/section. "Past Course Info" links will also allow faculty to minimize retyping on repeated courses.
2. *Tracking Support*: The system automatically provides information about which students have not completed the process, so faculty know the response rate in near-real time (and can thus respond to encourage timely responses).

3. *Timeliness*: Information from the on-line assessments is available to the faculty shortly after the close of the semester, rather than months later. This can be particularly helpful for courses that are run every semester.
4. *Improved Security*: Since the site is password and ID protected, faculty only have access to their course information. All unauthorized access to any survey data is central to the system.
5. *Minimal lost information*: Since the information is saved in a regularly backed up database, there is little chance for faculty or staff to lose survey results of any term.

Student Site:

Toward the end of the semester, each student receives email containing (a) a request to complete his/her survey form(s) online, (b) the available period for evaluation, (c) a list of current courses that need evaluation. The 'please fill out your survey' email setup by the super user is sent out daily to each student until he/she has completed all the evaluations for his/her courses during the period. The email contains a list of courses that the student needs to submit. Once a student completes a course evaluation, that course is removed from the list sent to the student; thus the student knows exactly how many more courses left to be done evaluation accordingly. This approach appears to be annoying at first, but the response rate suggests an otherwise effective approach.

Students gain access to the site using their university user ID and password. Thus far, students are comfortable with such an approach and raise no complaint on security issues yet. As a student is logon, he/she sees a page containing information similar to that contained in Figure 7.

Past Course Info

Select	Course Names & Section Numbers
○	Course 1
√	Course 2
○	Course 3

continue

Figure 7: Student-site course selection page

Students select one of the courses for which they still have to fill in a survey, and then click on "continue" to move on to next page. The "Past Course Info" provides a link to all the past courses offered and their course objective/assessment methods (Page 1) information. Figure 8 shows the page after a course is selected.

This page is similar to Figure 3, the faculty specific course page, except that the features on "Setup Course-Exit Survey", "View Instructor's Response", and "View Students' Responses" are removed. The "Assess Course-Exit Survey" provides a link to the Page 2 survey information (Figure 5) for that particular course that was setup earlier in the semester. Students then enter the

quantitative and qualitative data accordingly at their own time. However, students have only one chance to submit a completed form. Once submitted, that particular course is removed from the course selection list (Figure 7) to ensure data integrity. From the students' perspective, the survey site is quite simple and straightforward.

Home Past Course Info

Course Name/Section Number
Instructor name
Term
General instructions…

Course Objectives/Assess Methods	This option is always available
Assess Course-Exit Survey	This option is available from date to date

Figure 8: A specific course page

From the student perspectives, on-line surveys possess several advantages:

1. *Ease of access*: Students are not required to fill out the form during the class time but the survey form can be accessible from any location on the campus network at any time. Thus they get more time to reflect on the questions (days/weeks as opposed to 10 minutes with no time to prepare). This encourages more honest, thoughtful (and occasionally long/detailed) answers.
2. *Improved Privacy*: Since all responses are typewritten, the ability of faculty to identify comments with a particular student is lower. Students know that faculty only know if they have filled out a survey or not – but not who's response belongs to whom. This encourages more active student participation.
3. *Participation in the process*: As constituents in the improvement process, summary information from the tool is presented to them as a group, including faculty action items in response to the summary information.

Chair/Dean Site:

The Chair and the Dean share the same privilege in accessing the site. They all have the same privilege to see each other departmental course information and survey results. By doing so, it helps promote consistency in monitoring the information being setup. Figure 9 shows what the Chair will see once logged on.

The Chair has the primary oversight function. The interface depicted in Figure 9 is very similar to the standard faculty page, except that it includes the "Past Course Info" link. This link not only allows the Chair to view the past course information, but also to view the past survey results. If the Chair has any current teaching responsibility, the "View my course" will be active, and provide a link to the faculty page described in Figure 2, for filling out/viewing information for the Chair's current courses. Figure 9 also depicts the 'Chair-only' feature: The "View survey

results" link. This link leads to a page where all courses offered that semester are displayed for monitoring. Figure 10 depicts this Course Monitoring page.

Home Past Courses Taught Past Course Info

General greeting/info/instructions…faculty name

Select	Departments
○	CIS
√	ECE
○	ME

View survey results
View my course

Home: link to login home page
Past Courses Taught: link to courses taught by the Chair. He/she can view his/her own past courses information and survey results.
Past Course Info: link to all courses offered in the past. He/she can view **not only** the course information setup but also the survey results.
View survey results: link to overseeing all course information/survey results.
View my course: link to a page similar to Figure 2.

Figure 9: Chair's main page

Home Past Courses Taught Past Course Info

Instructions… Department Name

Select Course	Course/Section number	Setup Status	Assess Status	Date Extend	
○	Course 1			change	print
√	Course 2	√		change	print
○	Course 3	√		change	print
	⋮				

Continue Department List

Department List: link back to Figure 9.
Print: print the particular entire course information and survey results.

Figure 10: Course monitoring page

In Figure 10, the "Setup Status" and "Assess Status" provide indicators as to whether the faculty have completed the corresponding tasks in setting up the course survey in the beginning of the

semester and in performing his/her own self-evaluation at the end of the semester, respectively. This feature allows the Chair to remind (when necessary) any faculty if email messages have been ineffective when submission deadline is close. The "change" feature is in place for a situation when a faculty requests for deadline extension for either the survey setup or the self-assessment period. This feature is intended to be used discretely, and there are restrictions in place to avoid abuse that would invalidate the survey. For example, the Chair may not extend the survey setup date once the assessment period begins. Several of the features listed in Figure 10 are conditional. For example, the "View Students' Responses" feature is available once the assessment period is over, but is automatically turned off once the assessment period is extended. The "print" feature in this page is the main printing feature for the entire report on each course for that semester. After semester is over and when it comes time to review all courses for action items for improvement, the Chair will print out all the information at this page. In our program, we reduce the burden on the Chair by granting the departmental secretary chair-level access rights to the site. The secretary can then print out and collect all the results into a folder for review.

The benefits of the chair interface are multifold:

1. *Easy access to survey*: Again, the chair may access the information from anywhere within the campus network.
2. *Tracking Support*: The system automatically provides information about not only which students have not completed the process, but also which faculty have not completed the process, so that chairs can respond to encourage timely responses. Since timely faculty responses are key to making the assessments and reports work, this is particularly important to the success of this aspect of the EC2000 assessment process.
3. *Efficiency:* The online tool will considerably save department chairs' time to administrate the survey and report the survey result. In addition, the survey results will come back to the department and faculty quickly enough to be used to support that the faculty's performance evaluation.
4. *Improved Security:* Due to the different security levels of users within the system, only authorized personnel can access proper information.
5. *Minimal lost information*: Since the tool automatically saves the information in a regularly backed up database, there is little chance for faculty or staff to lose survey results of any term.

Super User Site:

The super user (in our case is the ECE Chair) is responsible for setting up the site at the beginning of each semester. Figure 11 shows the features available to the super user.

Figure 11 describes the key features of the super user. One of the key uses is to initiate a new survey. The "Setup New Survey" feature automatically archives last semester's survey results before initiating the new survey. Archiving allows a much more manageable database for the current semester. The setup process asks only the new survey start date and end date. Once it is setup and ready. The ITS (Information Technology Services department) technician will begin importing the university's relevant database to our Microsoft Access database. To make the site ready for use, the current courses offered by the three departments, students' class registration,

students' names and IDs, etc. are imported accordingly. The tool implements this import operation seamlessly using an SQL query. As the university data drives part of the process, the database needs to be updated to reflect any changes in registration, etc. To maintain the accuracy of students' records and class information we perform this import operation twice a semester: once at the beginning of the semester and again towards the end of the semester.

Administrator Home Page:

Functions:

Setup New Survey
Modify/edit Survey Dates
Setup/edit Email Preferences
Edit User's Right
Modify/edit User's Course Access

Figure 11: Super user's features

The "Modify/edit Survey Dates" allows super user to change the survey date as well as the deadlines for features "Setup Course-Exit Survey", "Assess Course-Exit Survey", "View Instructor's Responses", and "View Students' Responses" as indicated in Figure 3. The "Setup/edit Email Preferences" provides link to setup emails to both faculty and students for reminder. It provides features to define interval, frequency, and target dates. The "Edit User's Right" is where the super user modifies and/or adds a new user to have the Chair privilege to the site. The "Modify/edit User's Course Access" is similar in function to the "Date Extend" feature in the Chair's Course Monitoring Page in Figure 9. The main difference here is the ability to extend deadlines for courses relevant to a single faculty from any department. These modifications override the Chair's privilege for his/her department.

The benefits of the Super User site is that it provides a simple mechanism to manage the survey process, as the whole survey process is under control of administrator from one web page.

Conclusions:

This paper describes the implementation of an on-line tool to support consistent student evaluation of instruction. The tool includes interfaces to support chair, faculty and student processes necessary to publish, collect, and report survey information on learning outcomes from individual courses. There are many benefits to the web-based approach described here. Specifically, the benefits from the perspective of the Department Chair include:

- *Efficiency*: The web-based survey tool has undoubtedly provided a more efficient way of collecting data, monitoring course information and tracking survey records in support of department processes to improve the quality of the programs.

- *Response Rate*: The email alert features for faculty and students facilitates achieving a 100% response rate if implemented properly.
- *Tracking*: The continuous tracking of course objectives, return rate for courses, and access to survey responses support the Chair in (a) assisting or coaching faculty in established courses the faculty have not taught before, (b) improving communication and consistency in managing/measuring the objectives for courses that have multiple sessions or instructors.

Future Work:

Two major areas that need improvement and work are program criteria/course objective matching and report management. Firstly, the current "criteria fulfillment" page, as shown in Figure 6, requires each faculty to identify the relations between his/her own course objectives and all criteria, which thus far serves only for the bookkeeping purpose. To better facilitate the effort in consistent communication and measurement of department outcomes rather than individual course outcomes, a general matrix that shows all correlations among all course objectives and criteria is needed. This linking of program objectives and course outcomes by faculty essentially 'closes the loop' for outcome assessments. All of the course objectives' correlations with the criteria as entered by the faculty can be summarized into a single course entry in a program-wide matrix for a better tracking of how each department is fulfilling its own program goals. This global view will further streamline a more efficient data collection and evaluation process for continuous improvement in curriculum and instruction.

Secondly, the report management is not as complete as it could be. The current feature does not include the ability to plot trend lines for multi-semester analysis of repeated courses. A trend line analysis would be useful for a faculty's overall course evaluation for a given semester or the past semesters and might be useful in instructional improvement process. Similarly, we plan to include features such as "exporting" the survey data to the Microsoft Word format or Excel so that the data can be more easily integrated into annual program assessment reports.

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