Assessment ± In the Context of ABET Accreditation

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Abstract

In this paper a basic course embedded assessment strategy is discussed for programs in
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Assessment.

What Do We Measure?

We actually do not measure V W X G H Q W V ¶ outcomes directly. What we measure for a particular outcome is performance criteria related to that outcome. Degree of attainment L V based on V W X G H Q W V ¶ level of performance on performance criteria.

when students would have nough time to

tcome

When Do We Measure?

$ O O R X W F R P H V ... V K R X O G ... Also, most outcomes need to be measured at multiple points or at multiple courses. Most of these points of

measurement should be at the r level course

If there

this program for a number of years. At the same time, a short but effective assessment system hadto be adopted to satisfy mainly upcoming ABET evaluation. Due shortness of time there was no time to develop local assessment test or looking for an appropriate terminal assessment instrument. So, the program used course embedded assessment to minimize additional efforts. The assessment forms were adopted from previously implemented college wide assessment for general education and departmental assessment. The program assessed all the ABET General Criteria student outcomes (a thru k) and all the Program Criteria outcomes by using course embedded assessment. It was found out that in a few of outcomes the program needed immediate improvement to meet the standard. These improvements were carried out and re-assessment of the outcomes was satisfactory. The course embedded assessments have been accepted by the program faculty. The program received full six years accreditation from ABET the following year.

Conclusion

A key to learning is a well designed assessment process. The assessment, however, has no value ZLWKRXW VWXGHQW¶V DFWXDO OHDUQLQJ 3ODQ WKH VXEMHFW well-developed series of problems is actually the foundation of the assessment. Assignments must be supplemented by short and focused lectures. The assignment must be designed so that the students must spend some time outside the class working in teams. The other main FRPSRQHQW LV LQGLYLGXDO VWXGHQW¶V SUHSDUDWLRQ EH the beginning of the course must contain the relevant reading assignment for the students. One of the purposes of this non-traditional approach is to make the student more responsible for their learning.

References

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Amit Bandyopadhyay, Ph.D., PE is a SUNY Distinguished Service professor and Fellow of $PHULFDQ 6RFLHW\ RI &LYLO (QJLQHHUV 'U %DQG\RSDGK\D the area of construction management. He is a past chair of ETAC of ABET.

Appendix

Here is an example of setting up program level assessment using course embedded assessment:

ANNUAL ASSESSMENT PLAN
COVER SHEET

Construction Management B.S.

(Instructional Degree Program / Prof. Area) (Degree Level)

_____ Academic Year

(Submitted By and Date) (Assessment Period Covered)

Goal number 1. To foster teaching and learning in a supportive environment

Goal number 5. To involve students in solving problems of importance to local industries, government, and community organizations

3. Intended Outcome

Students will be able to apply creativity in the design of systems and components related to the discipline. (ETAC/ABET criteria 2d)

College Goal(s) Supported:

Goal number 1. To foster teaching and learning in a supportive environment

Goal number 5. To involve students in solving problems of importance to local industries, government, and community organizations

4. Intended Outcome

5. Intended Outcome

Students will be able to function effectively on teams. (ETAC/ABET criteria 2e)

College Goal(s) Supported

Goal number 1. To foster teaching and learning in a supportive environment

6. Intended Outcome

ANNUAL ASSESSMENT REPORT

Construction Management B.S_

(Instructional Degree Program / Prof. Area) (Degree Level)

May 20XX Academic Year 20**XX** -

(Submitted By and Date) (Assessment Period Covered)

Students will be able to apply current knowledge, techniques, skills and modern tools learned in the discipline and by adapting emerging application of mathematics, science, engineering, and technology to identify, analyze and solve technical problems. (TAC/ABET criteria 2a, 2b, and 2f)

1.

Assessment of Course Level Outcomes Fall XX

Course Number and Title – XXX 350 Intro. to Construction Eng.

Student Learning Outcomes: 1. An ability to identify, analyze, and solve broadly defined engineering technology problems. 2. Apply fundamental computational methods and elementary analytical techniques in sub-disciplines related to construction engineering. 3. Perform economic analyses and cost estimates related to design, construction, and maintenance of systems associated with construction engineering.

Performance Indicators	Percentage Exceeded Standard >85	Percentage Met Standard 70-85	Percentage Approaching Standard 60-69	Percentage Did Not Meet Standard <60	Assessed in/Comments
1. Students would be able to draw, interpret, and perform necessary calculations on Hay-Mass diagram					
2. Students would be able to exhibit competency in					

4. Students wilbe able performeconomic analysis of capital cost, equipment cost, labor cos for heavy construction activities	3%	77%	11%	9%	Quiz 11