Assessment Activities Used by Industrial Hygiene Faculty in ABET Accredited Programs

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Education Assessment Methods in IH Master's Degree Programs

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Purpose

To explore perceptions of industrial hygiene faculty at many different universities across the United States regarding importance and use of a variety of education outcomes assessment methods in IH master’s degree programs.
Problem Statement:

Research question:

- What assessment methods are currently favored and used at most US institutions having graduate academic programs in industrial hygiene?
Research Procedures:

- Lit review, questionnaire design, and selection of participants.

- Ranked various assessment methods as to degree of importance in assessing IH masters degree programs and to what extent used.

- Also asked questions about degree programs and experiential backgrounds.
Literature Review:

Revealed variety of perspectives supporting need for established set of assessment methods that meets standards of federal and state governments and needs of industry and society in IH higher education.
Survey Design:

- Online web-based descriptive survey polled current faculty of ABET accredited IH higher education curricula across the nation.

- Educators asked relative value & importance they placed on selection of different assessment methods.

- Also asked to identify what assessment methods they are actually using.

- Assessment methods selection and associated definitions adopted from literature review.
Sample Selection Method:

Obtained permission from AIHA Academic SIG Chair to select AIHA members from the membership directory who were also identified as faculty at ABET accredited universities having Master's Degree programs in IH.
Selection Criteria

- **Demographic Characteristics:**
  - Full time faculty *(PhD, EdD, ScD, or MS with CIH/CSP/CHMM certification).*
  - AIHA members at universities with **ABET accredited IH graduate degrees**.

- **Number of Subjects Selected:** 104

- **Time Frame:** Fall 2005 & Spring 2006 semesters
How Results Were Recorded and Analyzed:

- Questionnaire response data recorded electronically via computer database.
- Analyzed using built-in basic statistical analysis software.
Results Summary:

- **Response Rate:** 47.5%.

- **Demographics:**
  - Predominant age group: *50-59 years old (52%)*
  - Majority held doctorates *(89%)* and were CIHs *(83%)*
  - 44% of the respondents’ departments had *10 – 25 IH master’s degree students*
  - 40% had *less than 10* students in their departments
Results Summary:

- Assessment Methods Preferred by the majority of IH faculty (overall 71.3%):
  - Locally developed exit exams (55%)
  - Student portfolios (61%)
  - Field evaluations of student internships (72%)
Results Summary:

- **Assessment Methods Preferred (Continued):**
  - Faculty perception of student performance (68%)
  - National certification board exam pass rates (64%)
  - Student exit interviews/evaluations (57%)
  - Surveys of alumni (92%)
Results Summary:

- **Assessment Methods Preferred (Continued):**
  - Surveys of employers (85%)
  - Advisory board feedback (85%)
  - National program reviews (87%)
  - Internal academic program reviews (55%)
  - Reviews by accreditation bodies (89%)
Results Summary:

Assessment Methods Preferred (Continued):

- Most notable comment for open ended question on other assessment methods preferred:

  “A combination of methods because each look at different aspects of a program.”
Results Summary:

- Assessment Methods **Always** Actually Employed by the majority of IH faculty (77.6% overall):
  - Faculty perceptions of student performance (66%)
  - Surveys of alumni (62%)
  - Advisory board feedback (81%)
  - National program reviews (81%)
  - Reviews by accreditation bodies (98%)
Results Summary:

- **Assessment Methods** *Almost Always Employed* by the majority of faculty (60% overall):
  - Field evaluations of student internships (60%)
  - Student exit interviews/evaluations (60%)
Results Summary:

- **Assessment Methods** *Never* Employed by the majority of faculty (68% overall):
  - Commercial, norm referenced, standardized exit exams (85%)
  - Locally developed exit exams (51%)
Conclusions

- Methods considered important and commonly used:
  - Field evaluations of internship performance,
  - Exit interviews,
  - Faculty perceptions of performance,
  - Alumni surveys,
  - Employer surveys,
  - Advisory board feedback,
  - National program reviews, and
  - Reviews by accreditation bodies.
Conclusions

- Methods not always being used:
  - Locally developed exit exams,
  - Commercial, norm referenced, standardized exit exams,
  - National certification board exam pass rates,
  - Internal academic program reviews,
  - Student portfolios

- These may need to be used more widely to further improve student outcomes assessment.
Limitations/Recommendations

Recommendations for further study:

- Future studies could include faculty who are not members of the AIHA and who are at non-ABET accredited institutions.
- Also, exploration of reasons why some institutions do not employ the assessment methods considered important is a subject for further research.
Discussion

It's QUESTION TIME!!