Experiences of an ABET Accreditation Evaluator

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Abstract

Each year, ABET member organizations invite applications and nominations for prospective accreditation evaluators. Those selected serve five-year terms, and may make an evaluation visit each year. The author, who has served as an evaluator selected and trained by IEEE, shares his experiences from five accreditation visits, under both the conventional and the new EC2000 criteria, and including general, focused and first accreditation visits. In these comments, the author does not represent ABET or IEEE, but does offer observations on his accreditation experiences for the benefit of other educators and evaluators, and to encourage others interested in engineering education to apply to become evaluators themselves. After many years of experience as one being visited by ABET, the author's experiences as a visiting evaluator have given him an increased respect and appreciation for the accreditation process and its thoroughness and objectivity. It is not a secret or mysterious process, but one offered by the profession to help institutions improve their engineering programs.

Introduction

The steps for becoming and serving as an ABET evaluator are reviewed in chronological order and include application or nomination, selection, training, selection as a campus visit team member, preparation and conducting a campus visit, completing reports and following the results through the steps of review and final action--almost a two year process for a new evaluator. Prospective evaluators may be surprised by the rather sophisticated process and relationships between ABET and its respective member societies. ABET has four separate accreditation units: Engineering Accreditation Commission (EAC), the Technology Accreditation Commission (TAC), the Applied Science Accreditation Commission (ASAC), and its newest unit, the Computer Accreditation Commission (CAC). Since the author was selected and served as an IEEE representative and served for the EAC, the following information and comments are from that perspective.

ABET Evaluators

Application and Selection

New ABET/EAC evaluator candidates are solicited each fall by the ABET member societies that have oversight for the respective curriculum areas. For IEEE, this has been Electrical or

Proceedings of the 2002 ASEE Gulf-Southwest Annual Conference,
The University of Louisiana at Lafayette, March 20 - 22, 2002.

Electronics Engineering, Computer Engineering and Bioengineering (the latter may be transferred to BMES in the near future). Applications are due in November. The application provides the prospective evaluator's biographical information to confirm the experience and qualifications that are considered important for an ABET evaluator. Also, previous affiliations or relationships that might represent potential conflicts of interests as an evaluator are reported. For IEEE, the Committee on Engineering Accreditation Activities (CEAA) has the responsibility for recruiting and selecting new evaluators. The review is completed by the end of February, and the new evaluators are announced by March 1. Approved evaluators generally serve for a five-year term, and may serve again for another term by a new application.

Training Workshops for New or Continuing Evaluators

New evaluators are expected to complete an evaluator training workshop before serving on their first campus visit. IEEE generally offers these workshops at the annual Electrical and Computer Engineering Department Heads Association (ECEDHA) meeting in March, immediately preceding the annual ASEE annual conference in June, and at other times as needed. These full-day training workshops provide an excellent orientation to the structure and terminology of the accreditation process, the accreditation criteria and their application, an evaluator's preparation for and conduct of a visit, and the subsequent reporting requirement and procedures. Many extra training opportunities were provided during the accreditation process transition from the Conventional criteria to the EC2000 criteria. Established evaluators are also encouraged to attend training periodically to refresh their perspective and to gain insight into the evolving interpretations of the criteria and assessment expectations. Workshops are very helpful, candid, open and practical.

Accreditation Process

Preparation for a Campus Visit

While there are some exceptions, most campus visits are scheduled during September, October and November. By early Summer, the team chairs are selected for the campus visit to be held that year. Team chairs are experienced visitors and are members of the ABET/EAC. The team chair and school agree on prospective dates for the visit. Then, the team chair selects and contacts the prospective program visitors, often with the help of the sponsoring societies (as in the case of IEEE, for example), to confirm their availability for those dates and that visit. The team chair and evaluators generally receive the considerable institutional materials by late summer. These materials include the completed ABET institutional self-study documents (volumes), catalogs, sample transcripts and other supporting materials.

The training workshops and the printed policy and instructional booklets for evaluators emphasize the importance of preparation before the campus visit. There is not enough time during the visit to do the reading and preparation that was supposed to be done before the trip, the things that can only be done in person during the visit, and the things that surface only during the visit. Current procedures expect that many of the accreditation forms are completed in draft before the visit and that nearly all of the evaluator's reports are completed (in some form) before the campus exit interview with the engineering and institutional administration.

Campus Visit Schedule

Team members frequently arrive in the area of the campus on Saturday, and begin the team's work with a meeting on Sunday morning. Sunday afternoon is usually spent on campus, visiting labs and reviewing course materials. There is probably a team meeting on Sunday evening. Monday involves meetings with the program faculty members and students, and supporting departments and services. There is a team meeting on Monday evening, as the forms and conclusions settle toward their final form. Remaining details are explored on Tuesday morning, and then the team's attention turns toward preparing the revised versions of the many reports in preparation for the summary report that will be read by each team member at the exit interview on Tuesday afternoon. Even if the individual evaluators come to campus well prepared and work hard during the visit, this Tuesday session is frequently one of the most harried periods of the entire process, making sure that everything is completed and that the various team members have consistent interpretations of findings and recommendations.

After the Campus Visit

There are still many steps to be completed before the ABET accreditation action letter is mailed to the institution's president in August or September of the following Fall. After the team members share the report of their findings (but not accreditation recommendations) at the exit interview, the institution has a 14-day period to correct matters of fact. Then, a few months later, the institution receives a draft report from ABET and has a 30-day due process period to supply information that might change the final report. Many of the team chairs share these supplementary reports with the team members, and seek their recommendations on the appropriate response. Some accreditation shortcomings may be resolved through these steps. Also, during these steps, several people are involved in reading and editing the draft report for clarity and consistency and compliance with accreditation terminology and criteria. Eventually, the team chair presents the team's report to the ABET/EAC meeting the next Summer and the full group votes on the accreditation action for each program and institution. Then, before it is considered final, a "consistency" committee reviews the actions of the meeting for consistency for findings and actions among different schools.

ABET Accreditation Criteria and Evaluation

Accreditation Criteria

Most of the attention in recent years has been directed toward what has come to be known as the ABET criteria (a)-(k). Actually, they are only one of eight areas of evaluation. Under the EC2000 Criteria, these are:

1. Students
2. Program Educational Objectives
3. Program Outcomes and Assessment (where (a)-(k) are listed)
4. Professional Component
5. Faculty
6. Facilities

7. Institutional Support and Financial Resources
8. Program Criteria

Evaluation Information and Forms

Depending on the sponsoring society, there are 16-20 pages of forms used during an accreditation visit and subsequent reports. These are the evaluator's primary worksheets. Awareness of these forms could be an aid to programs preparing for accreditation and conducting their self-study. These forms indicate the information the evaluator must have available for a successful accreditation visit and a favorable report. This information should be an aid for programs that are anticipating ABET visits in the near future. Special complexities of accreditation under the new EC2000 criteria are outlined, and suggestions from an evaluator's perspective that could aid a program in presenting its materials more effectively are given. All eight ABET criteria are important and are reviewed. Special emphasis is given to the process and content of program objectives, outcomes, assessment and continuous improvement required under EC2000 and to the "degree of compliance" evaluation.

ABET Materials

The following ABET documents are available at http://www.abet.org/info_prgs_eac.html.

ABET Accreditation Policy and Procedure Manual (changes as of Nov. 3, 2002) - 24 pages
ABET Request for Evaluation Form - 3 pages
ABET/EAC 2002-03 Engineering Criteria - 24 pages
ABET 2002-03 EAC Self-Study Questionnaire - 39 pages
ABET Code of Conduct - 2 pages
ABET Conflict of Interest Policy - 2 pages
ABET Program Evaluator Training (schedule) - 2 pages
ABET Engineering Criteria 2000 Manual of Evaluation Process - 8 pages
ABET Program Evaluator Report (Engineering Criteria 2000, 2001-02 Visit) - 15 pages
- Identification of Institution, Program and Evaluator
- List of Persons Interviewed
- Program Audit Form, Transcript Analysis
- Recommended Accreditation Action Form
- Level of Implementation Form
- Matrix for Implementation Assessment
- Program Audit Form (summary)
- Program Audit Form - Evaluation of Shortcoming - 2 pages
- Program Exit Statement

ABET EAC Program Audit Form - 2 pages
ABET Travel Policy and Procedures Manual - 8 pages

IEEE Materials

Similarly, http://www.ieee.org/organizations/eab/apc/overview.htm gives IEEE documents for prospective EAC program evaluators.

IEEE EAC Call for Program Evaluators
2002 IEEE EAC Program Evaluator Application
IEEE EAC Program Evaluator Qualifications
IEEE EAC Program Evaluator Nomination Form

and for current EAC program evaluators:

IEEE Program Evaluator Survey - 2001 visits
Engineering Criteria 2000 Checksheet
Engineering Criteria 2000 Checklist for EE/CpE Programs
Engineering Criteria 2000 Checklist for Bioengineering Programs
Compendium to Engineering Criteria 2000 Checksheet
Instructions for Engineering Criteria 2000 Checksheet
Area of Opportunity for Improvement of Visit Reports

Observations of an Evaluator

Evaluator training workshops are really quite effective in preparing even a novice evaluator for the first accreditation responsibility. In addition, the team chair readily provides requested guidance. Still, one might hope that the first assignment is for a school that is in good shape.

The accreditation documents and forms listed above provide a clear, if somewhat daunting, picture of program evaluation under EC2000. It is believed that the institution could prepare more effectively for a successful visit by being aware of the list of areas the evaluator is expected to evaluate during the pre-visit preparation and subsequent campus visit, especially those related to the new assessment component. An especially good example of this is the ABET Level of Implementation Form, which identifies five different levels of implementation for each of six different areas (educational objectives, constituents, processes, outcomes assessment, results, and system), and the Engineering Criteria 2000 Checksheet, which comprises over three pages (42 items related to the assessment of the eight EC2000 accreditation criteria). The latter also asks that the evaluator evaluate each of the program outcomes (ABET a-k and additional institutional outcomes) separately with regard to four areas:

Is there a documented, working process to produce the outcome?
Are metrics in place and documented measurement results available?
Are the results being used to improve the outcomes?
Do student work and other evidence demonstrate the outcome is being achieved?

giving an array of 4 times 11 (or more) assessments.

ABET does not require that institutions describe their program objectives and related outcomes one-to-one according to ABET's terminology (specifically, outcomes a-k). However, the evaluator must evaluate the assessment process compliance for each of the a-k criteria. This means that the evaluator may be left with the task of terminology translation and the dissection and tracking of outcome data organized with a different compilation basis. Coupled with the checklist expectations described in the prior paragraph, what may be quite familiar and clear to

the institution can easily be a major trauma for the evaluator. Institutions will help the evaluator and the evaluation if they to take this into account in preparing their assessment documentation for the accreditation evaluator. A simple (hopefully) chart that traces institutional objectives to their related program outcomes and the assessment sources, then linking these to ABET's specific a-k outcomes, in which the evaluator must cast his evaluation, would be an invaluable aide. If the evaluator cannot follow these relationships and verify the degree of compliance, it may be necessary to indicate a shortcoming.

By the time the evaluators have absorbed the institution's self-study materials and had some interchanges and perhaps received additional information as requested from the school prior to the visit, the evaluator prepares a pre-visit analysis. Still, there are almost always some areas of concern that cannot be settled before the visit, and others that arise during the visit. At the completion of the intense period on campus, the team generally feels that they have a good perspective on the conditions at the school. Program reviews use the terminology of strengths and shortcomings (the latter, in order of severity, are concerns, weaknesses and deficiencies). The evaluator's goal is to resolve all of the issues but, if they cannot be resolved, then the report will describe any criteria shortcomings. Perhaps the most challenging circumstance is when the institution does not seem to take the accreditation review as seriously as does the visiting team, leaving the team to do what should have been the institution's work and to do so under very short time constraints.

The accreditation team really is a team. Each time they meet during the visit, they share their findings and current judgments. This information helps each evaluator understand the institutional context more fully. It also provides some check and balance on each evaluator's thinking and interpretation, and helps the team maintain consistency in their evaluation. While each specific program evaluator has the primary responsibility for the analysis, interpretation and judgment that lead to the program evaluation, identification of shortcomings, and accreditation recommendation, the entire team shares in this information and judgment, and seeks to achieve common support for all of the recommendations. When the team provides the exit report, it is a team report.

This evaluator's experience through a total of five program reviews (for initial accreditation, interim focused review and general review) has greatly increased his confidence in the quality and consistency of the ABET/EAC accreditation process. The selection and training of evaluators, the teamwork among the evaluators under the leadership of the team chair, and the number of other experienced individuals who contribute to the final result represents a professional and careful process. The attitude of evaluators is to try to resolve shortcomings by giving the institution every opportunity to clarify areas of concern and provide additional information where it would be helpful.

However, it is also acknowledged that EC2000 has significantly increased the overall workload of an accreditation review for both the institution and the visiting team. Nearly everything that was present before EC2000 is still present, plus everything that was added by EC2000. A complete and thorough assessment process for the full scope of the accreditation review and careful documentation to demonstrate its effectiveness to an evaluator is not a trivial task.

Hopefully, this will improve as schools become more effective and as additional best practices develop.

Conclusion

The experiences of an ABET accreditation evaluator have been described, as the basis for the confidence in the accreditation process. Also, the documents and forms used by evaluators have been cited, with the suggestion that attention to them by institutions being evaluated could improve their institutional self-study and campus visit.

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Jim Farison is Professor of Engineering and chair of the Department of Engineering at Baylor University. He joined Baylor in August 1998, after serving in Electrical Engineering (1964-96) and as a founding member of the Bioengineering program and department (1996-98) at the University of Toledo, including a period as Dean of Engineering (1970-80). His BSEE is from the University of Toledo, and MSEE and Ph.D. are from Stanford University. He is a registered P.E. (Ohio, Texas), a senior member of IEEE, ISA and SWE, and a member of ASEE (campus representative), ASME, SPIE, SME/MVA and NSPE/PEE. He has served as an ABET/EAC evaluator for IEEE.