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IS Faculty Perceptions of ABET Accreditation

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ABSTRACT

This paper gives an overview of the processes that are available to assist faculty in developing and evaluating their Information Systems programs. A summary is provided of the IS2002 Model Curriculum, the CCER assessment test, and ABET accreditation. This paper also presents the results of a survey that explored the attitudes and interests of schools in achieving ABET accreditation.

Keywords: ABET, IS accreditation, CCER, IS2002, IS Model Curriculum, IS program quality

1. OVERVIEW

The Information Systems field is maturing as a discipline. To promote and ensure the quality of educational Information Systems programs three important guiding and evaluating bodies have been developed:

- 1) The IS2002 model curriculum
- 2) The ABET / CAC / IS accreditation
- 3) The Center for Computing Education Research (CCER) IS assessment test

This paper will focus on IS accreditation, but will blend the other two important processes to further explain the process for ensuring a high quality information systems program.

2. HISTORY

Computing is a relatively new field. With the first working computer in 1947 and the first commercially available computers in the 1950's, the field is only slightly over 50 years old. Computer Science was the first major academic thrust, developing the algorithms, operating systems and efficient and effective processes needed for computing. Information Systems, the discipline for applying computing technologies for businesses and competitive advantage, did not

appear until the late 1960's and early 1970's.

3. CURRICULUM MODELS

The goal of IS curriculum models is to provide guidance to academic programs in developing courses that are consistent with regional and national employment needs and with the common body of knowledge of the IS field (IS2002 Model Curriculum).

Some of the more significant IS curriculum models include:

1981 – DPMA Curriculum for Undergraduate Information Systems Education (DPMA 1981)

1986 – DPMA Model Curriculum for Undergraduate Computer Information Systems (DPMA 1986)

1991 – DPMA IS'90 Curriculum for Undergraduate Programs in Information Systems (Longenecker and Feinstein, 1991)

1997 – ACM, AIS, AITP IS'97 Model Curriculum and Guidelines for Undergraduate Programs of Information Systems (Davis, et al 1997)

2002 – IS'2002 Model Curriculum and Guidelines for Undergraduate Degree Pro-

grams in Information Systems – ACM, AIS, AITP (Gorgone, et al 2000)

Each of these models has exhibited a maturing in the field. From the IS'97 model to the IS2002 model, two new course concepts were introduced: Electronic Business (IS2002.2 E-Business Systems) and an Emerging Environments course (IS2002.9 Design and Implementation in Emerging Environments). In the early days of the IS curriculum model, there was more of an emphasis on programming (most likely with COBOL). Now, the business world needs information systems (and information technology) for a competitive advantage, and has implemented ERP (enterprise resource planning) systems (such as SAP and Oracle), global systems, and complex information exchange systems (such as EDI and EFT). Security, privacy, information access, and speed of implementation are high priorities in today's IT world.

It is anticipated that the IS2002 curriculum model will continue to be tweaked, with versions that reflect the current work environment, such as a push towards global outsourcing and a fuller grasp of the management of information systems, while the development and programming concepts may become less important. [Authors note: IS students will still need to understand the programming paradigm in order to manage information systems.]

4. ABET ACCREDITATION

A second recent trend in IS education is that of accreditation of IS programs. ABET (originally an acronym for the Accreditation Board for Engineering Technologies) has taken on the role of accrediting IS programs, with the first IS program accredited in 2002 (Pace University in New York). The IS Accreditation follows from the merger of ABET with the Computing Sciences Accreditation Board (CSAB), which started accrediting computer science programs in the mid 1980's.

Accreditation Overview

In the United States, almost all colleges and universities are accredited by a regional accrediting association. These are:

- New England Association for Schools and Colleges (NEASC)

- Middle States Association of Colleges and Schools, Commission on Higher Education (MSA-CHE)
- North Central Association of Colleges and Schools, The Higher Learning Commission (NCA-HLC)
- Northwest Commission on Colleges and Universities (NWCCU)
- Southern Association of Colleges and Schools, Commission on Colleges (SACS-COC)
- Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities (WASC-ACSCU)

While non-accredited institutions do exist, many employers will only hire graduates of a regionally accredited institution.

A second level of accreditation is School level accreditation. Many Business Schools are accredited by either AACSB (the Association to Advance Collegiate Schools of Business) or ACBSP (Association of Collegiate Business Schools and Programs). Likewise, Schools of Education are accredited by NCATE (National Council for the Accreditation of Teacher Education).

In recent years, there has been more interest in accreditation in specific disciplines. For example, most health science programs can be accredited, and Engineering programs have been accredited since the 1930's.

ABET Organization

ABET was founded in 1932 as the Engineers Council for Professional Development (ECPD).[ABET History]. The organization functions with four accrediting commissions, which formulate appropriate guidelines for accreditation of programs in their specific discipline. The commissions are: CAC – computing accreditation commission; TAC – technology accrediting commission; EAC – engineering accreditation commission; and ASAC (Applied Science Accreditation Commission). The CAC has recently added the accreditation of IT programs to their Computer Science accreditation and Information Systems accreditation. You can see the specific guidelines on the ABET website (www.abet.org). Each of the commissions have a controlling board of directors – in the case of information systems accreditation, it

is the Computing Sciences Accreditation Board (CSAB).

5. IS ACCREDITATION

The current standard for IS accreditation has eight criteria:

- I. Objectives and Assessment
- II. Students
- III. Faculty
- IV. Curriculum
- V. Technology Infrastructure
- VI. Institutional Support and Financial Resources
- VII. Program Delivery
- VIII. Institutional Facilities

The accreditation criteria have standards that need to be met for the program to be accredited. For example, for the curriculum standard, there are sixteen standards – broken into five categories: General, Information Systems, Information Systems Environment, Quantitative Analysis and Additional Areas of Study. It should be noted that ABET, as an organization, has been working towards a more flexible accreditation philosophy.

Why be accredited?

In the United States, it may be voluntary for an organization to be accredited by NEASC or North Central (and the other regional accreditation agencies), but in reality if the institution is NOT accredited it will adversely affect graduates and funding for students.

Accreditation is an indication of quality, and has received increasing emphasis, not only at the university level but also at the individual program level. In 2002, the Computing Accrediting Commission of the Computing Sciences Accrediting Board (CSAB) of ABET began accrediting programs in Information Systems. Currently, ten campuses and eleven programs have received accreditation by ABET (one campus has both a Bachelor of Arts and a Bachelor of Science in Information Systems).

The NEASC (New England Association of Schools and Colleges) states: "Accreditation is a status granted to an educational institution or a program that has been found to

meet or exceed stated criteria of educational quality. In the United States, accreditation is voluntarily sought by institutions and programs and is conferred by non-governmental bodies." [NEASC Role]

As accreditation is voluntary, there are institutions that are not accredited. But, as stated by the Michigan Department of Civil Service "Degrees from these institutions [non-accredited] will not be accepted by the Department of Civil Service as satisfying educational requirements indicated on job specifications." [Michigan Statement on Non-accredited schools] Accreditation implies a stamp of approval that the institution has undergone a rigorous analysis and review and has met or exceeded the stated criteria.

Program accreditation is especially voluntary. At the time of submitting this paper, there were only sixteen campuses with accredited IS programs, as compared to 202 campuses with computer science accreditation. Two germane reasons for the large difference are: (1) computer science programs started to be accredited in 1986 and information systems programs in 2003; (2) there are more computer science programs. As you will see in our survey results and analysis there are campuses that are looking at accreditation and others that are not. According to our survey results, the primary reason for considering accreditation was for quality, with public relations and administrative reasons second and third. The reasons for not considering accreditation are spread over more areas, with "not sure of the value" as the leader.

Accreditation process

The ABET IS accreditation process has two main parts: self-study and campus visit. The self-study forces the program administrators to reflect on the criteria (mentioned above) to see if the program delivers a program worthy of accreditation. Through the self-study process, the organization can identify problem areas that need to be addressed prior to bringing in a team. Some schools may stop after this introspective program self-study and not continue in the accreditation process while they determine goals and work on deficiencies. For example, in the faculty criteria, faculty need to be up-to-date in the field, and if the department finds that the faculty are not current,

they may invest in projects and activities to bring an acceptable level of currency.

The second part of the accreditation process is the on-campus visit. This generally consists of a team leader and two team members who meet with faculty, students, and administrators as well as review course materials and program details. Generally, this is a three-day visit during the fall semester. The final activity for the accreditation review team is a presentation of their findings to the President and other administrators of the campus. The findings are forwarded to the Computer Accreditation Commission who ultimately grants accreditation.

6. CCER ASSESSMENT

One significant step in the assessment process has been the CCER assessment test. The CCER Exam was developed with the purpose of assessing the readiness of IS majors to enter the job market and to improve IS courses and curricula. The intent of the CCER exit assessment exam was "to assess the knowledge and practical readiness of IS students and professionals and to evaluate, improve, and accredit undergraduate information systems degree programs" (Reynolds et al.2003).

Assessment is an ongoing process on many campuses. The regional accrediting agencies have made assessment part of their accreditation process. In the standards for ABET IS accreditation, the intent for criteria I Objectives and Assessments reads:

"Intent - The program has documented educational objectives that are consistent with the mission of the institution. The program has in place processes to regularly assess its progress against its objectives and uses the results of the assessments to identify program improvements and to modify the program's objectives." (ABET Criteria - 2006-2007)

There are many ways to assess if a program is meeting its educational objectives. Some of these include:

- Advisory boards
- Senior portfolios
- Senior exit surveys
- Graduate surveys

- Exit examinations
- Alignment to curriculum standards (like IS2002)
- Informal assessment through conference presentations

The CCER test was developed by IS professors and is closely aligned with the IS2002 model curriculum. The test gives statistics in three main areas: Information Technology Skills; Organizational and Professional Skills; and Strategic Organizational Systems Development with IS.

7. SURVEY

Demographics

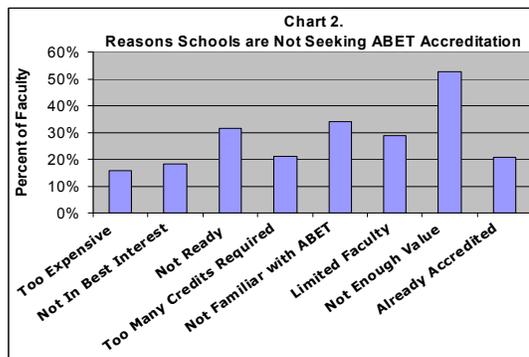
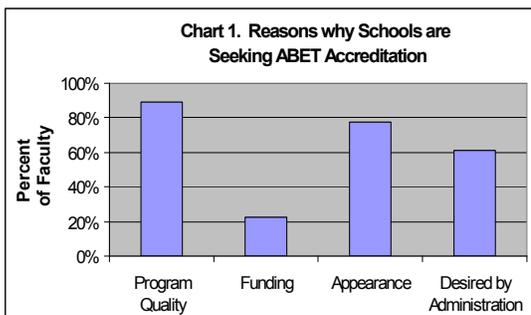
Surveys were distributed to IS faculty to determine the attitude and interest of IS faculty in ABET accreditation. Requests for faculty to complete the survey were distributed to the 2005 ISECON attendees and the request was posted in ISWorld. Responses were collected from sixty-six faculty members nationwide, all from four-year institutions and from departments in the information systems field. Approximately fifty percent of the faculty were from public universities, twenty-six percent from private universities and the remaining twenty-four percent were from public and private colleges. While the departments varied in title from Computer Information Systems to Management Information Systems, the majority (seventy percent) of the departments were housed in the Schools of Business and were from accredited institutions.

Results

Approximately one-third of the faculty surveyed were from ABET accredited schools or schools that planned to seek accreditation. These faculty cited a variety of reasons for seeking ABET certification (Chart 1), with the highest response rate (89%) given to the perceived quality that ABET accreditation brings to a program. In addition, sixty-one percent stated that their administration desired the official recognition. When asked what hurdles that faculty have encountered or perceived encountering when applying for accreditation the responses were regarding the evaluation process itself or were focused on the requirements. Some of the responses included:

- Large commitment in faculty time and effort.
- Revisiting curriculum to define a process for documentation.
- Very difficult to meet AACSB standards and ABET standards -- only 10 courses total in the ISM major.
- Enormous amounts of paperwork.
- The assessment cycle is tough to complete.
- Scheduling just two preps for faculty, since we all must teach four courses per semester. Also, ensuring that all faculty produce pubs.
- Outcomes assessment requirements. Identifying artifacts, collecting and analyzing data, and maintaining a focus on the entire process. There is a tendency to act immediately to solve a problem when it is detected rather than waiting for data to be collected and analyzed. This leads to unsubstantiated and undocumented modifications.
- Calculus requirement.
- The accreditation is relatively new. We have been waiting for the criteria to stabilize.

Two-thirds of the faculty surveyed indicated that their schools were not planning on seeking ABET accreditation (Chart 2). Over half of these schools stated that the reason they were not applying for it was that there was not enough perceived value in attaining accreditation. Just over a third were not familiar with ABET accreditation. Additional reasons given by faculty were the lack of funding, number of faculty, and the number of required credits.



8. CONCLUSION

I.S. programs now have three processes available to them to help ensure and demonstrate that their program is a high quality one.

The IS2002 Model Curriculum offers I.S. faculty a guideline for program development that enables them to develop a curriculum that meets industry needs and is current in the I.S. field.

The CCER exam provides I.S. programs a mechanism to evaluate the outcome of their programs by evaluating what their students have learned. The last process ABET accreditation ensures that the I.S. Program is a high quality program. ABET accreditation is slowly gaining popularity. A third of the programs surveyed indicated that they were interested in attaining ABET accreditation.

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