

# Invited Editorial

## Why Certification in Information Systems?

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Certification of business professionals is a hot topic. A major conference entitled *Technical Certification Expo 2000* was conducted in Las Vegas in May 2000. The governors of 32 states endorsed March 2000 as Certification Month. More than four hundred business certifications are available, and the process involves more than forty vendors. Dozens of recent book titles describe certification exam content and preparation procedures. World Wide Web sites track the status of exams and identify procedures for becoming certified. With increasing frequency, employment ads specify preference for those holding certifications.

While the certification frenzy swirls about them, information systems professionals and educators continue to struggle with certification. For educators and business professionals involved with end-user information systems, certification is an issue—an issue that was settled long ago for professionals and educators in other areas. Many professions are involved with assessment of practitioners' knowledge and skill. For critical professionals, such as those who work in medical and health care fields, assessment may be mandated by law. Dozens of specialists are "credentialed" in one way or another through formal examinations or other assessment procedures. From medicine to real estate; from teachers to trainers, employers reward certification and educators assess the rigor of their programs by the success of graduates who sit for certification examinations. For business, the CPA is probably the most recognizable certification.

### THE ISSUE

If certification is so honored and rewarded in some professions, why is it such an issue for the

information systems field? Is it good for the profession to debate such issues publicly in professional journals such as this?

Three or four conditions contribute to the debate. First, in some areas of the discipline, the absence of unbiased, neutral groups for determining examination content, creating examinations, and sanctioning examiners may create some doubt about certification value. The involvement of vendors may cause some critics to believe that certifications merely tout commercial products. Second, the rapidly changing knowledge base required for success in this field causes some to question the sustained value of certification. Third, educators may be uncomfortable with the pressure to maintain their own proficiency levels and certification status when they teach students who will be seeking certification. Finally, educators may be uncomfortable with the thought that certification examinations, rather than theory and principles, drive the content of courses and academic programs—an admirable concern.

Is debate and discussion of this issue healthy? Yes, for this issue and in this field—in any field. Only through such discourse does a field achieve professional status. However, such discussions are never intended to "win" debates. Rather, they stimulate inquiry, formal research. In this case, perhaps it will propagate research problems that will lead to enhanced methods and techniques for measuring employee knowledge and skill. Exploration of this topic is not new to

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end-user information systems. Researchers such as Evans and Henry (1998) and forums at professional conferences have presented advantages and disadvantages of certification and provided resources for investigating its value.

## THE CASE FOR CERTIFICATION

Having identified the issues and recognized possible concerns, there are ample reasons for educators to become involved with certification and for employers to reward current and prospective employees who earn certifications related to their work. The remainder of this manuscript presents reasons for such involvement, identifies certifications especially related to end-user information systems, and identifies sources of additional information for those who decide to become involved.

## BENEFITS OF CERTIFICATION

Who benefits from information-systems-related certifications? Employers benefit through improved employee recruitment and employee development. Educational institutions and educators benefit through improved program content and assessment capability. The greatest benefit comes to students who are more marketable and earn higher salaries because of certification.

*Employer Benefits.* Certification credentials give employers another criterion for selecting the most capable employees—always a recruitment and hiring goal. Their current employees who update their knowledge and skills through certification are more valuable employees because of the strength they bring to the job (Martinez, 1999).

According to a study by IDC, Incorporated (1999), 92% of the managers surveyed said they realized all or some of the benefits they expected from their certified employees. The top five benefits expected of certified employees are:

- Greater knowledge and increased productivity
- A certain level of expertise and skill
- Improved support quality

- Reduced training costs
- Higher morale and commitment

*Education Benefits.* For educators, certification examination objectives and content reviews provide an additional assessment tool for evaluating course and program content. By no means should it be the only tool, however. When educators themselves become certified in the fields in which they teach, assess course content to confirm that students are prepared for certification, and provide information about exam preparation, students will reap the benefits that come with certification. Student accomplishments on certification exams provide valid measurements of student competencies—a factor in assessing courses and programs.

*Student Benefits.* Students are marketable when their programs of study include content considered valuable by employers. Certified students also benefit financially because employers relate certification to evidence of skill and reward persons with those skills. DataMasters Business Solutions (1999), an information systems support and training firm, and National Computer Associates, a trade association of information systems firms, conduct an annual salary survey for information systems managers and professionals. Their 1999 survey reported a 14 percent increase in base pay for persons holding the MCSE certification, just one of many information systems certifications available, and “generally higher salaries” for Novell and Microsoft certifications. No hard data are available regarding the value of other certifications, but the increased prevalence of phrases such as “A+ Certification Preferred,” “MOUS Certification a Plus,” and “Preference for Network Certification” in job announcements suggests that employers are rewarding applicants who have earned the certifications.

A second financial benefit comes to students who study in institutions that become official test centers for certification programs. Examination fees are likely to be significantly lower if offered by the school, compared to private testing agencies.

## NATURE OF RELEVANT CERTIFICATIONS

Among the hundreds of certifications relating to information systems professionals, three categories (software, hardware, and networking) deserve special attention for educators and business professionals working with end-user information systems. Networking certification and an additional category (systems analysis and design) are important for those who also work with management information systems. Many of the certifications are associated with products of the Microsoft Corporation—the vendor for the most prevalent operating system in desktop computing and the most popular end-user suite of applications.

### SOFTWARE

Many certification exams are available for applications software packages (spreadsheets, database management systems, word processing, and presentation graphics). The Microsoft Office User Specialist (MOUS) certifications cover popular applications. For most applications, more than one certification (core and expert) is available. In addition, operating system software certification, e.g., Windows 2000, involves operating system basics and various levels of server technology.

### HARDWARE

More than 120,000 professionals hold the A+™ Certification, which assesses desktop computer service and repair technology skills. The exam is developed and administered by the Computing Technology Industry Association (CompTIA), an association representing over 7,500 hardware and software firms. While the certification is designed for hardware technicians, it is considered valuable for anyone who will support computer end users.

### NETWORKING

Microsoft Corporation, Novell Corporation, and CompTIA offer certifications that deal with computer network technologies. Network+™, a

product- and vendor-neutral certification, is the most recent certification examination to be developed by CompTIA. Novell and Microsoft certifications require expertise in vendor-specific networking software/hardware solutions.

### SYSTEMS ANALYSIS AND DESIGN

More than a dozen certifications associated with Microsoft BackOffice software, the software that powers networks, Internet servers, and various databases, are offered. The most popular of these certifications are Microsoft Certified Professional (MCP), Microsoft Certified Systems Engineer (MCSE) and Microsoft Certified Solution Developer (MCSO). All of these certifications involve multiple examinations in various specialties.

## LEVELS OF INVOLVEMENT FOR EDUCATION

Potential levels of involvement with certification have been well-documented (Evans & Henry, 1998; Green, 1999). At the low end is teaching students about values and availability of certification, available study courses for preparation, and examination sites. Mid-range involvement would involve all of the previous activities plus administration of one or more of the available examinations for assessing student readiness for certification exams. High-end involvement could involve all of the previous activities plus exam center status for the institution. For example, Microsoft Corporation makes such designations. The latter usually requires that one or more instructors at the institution become certified themselves. Some schools may actually require that students attempt one or more certifications. That level of involvement does not appear to us to be necessary or desirable for most institutions.

Information systems educators, and particularly those in end-user information programs, must get involved with certification at some level. Given a rigorous program of study that includes the breadth and depth of coverage suggested by OSRA's OEIS curriculum model,

the benefits of certification can be realized without sacrificing other values.

## SOURCES OF INFORMATION

In addition to sources cited in this manuscript, the following sources provide excellent information about certification. Specific URLs for the web sites may change from time to time, so conducting a web search may be necessary to locate Internet resources.

- **www.certification.com.** This site, sponsored by about.com reviews publications, offers current news, and presents dozens of vendors, training providers, salary surveys, and general information about computer certification.
- **www.certifiedcomputerpro.com.** Primarily links to certification-related sites, this site contains links to news groups. Its Certification Program Counts section lists the number of people certified in each program.
- **www.gocertify.com.** An EarthWeb site, this resource organizes information by certification vendor and by topic. Its Reading Room lists articles and white papers related to certification.
- **www.comptia.org.** This is the site of the Computing Technology Industry Association,

the organization that develops A+ hardware and A+ networking certification examinations.

*Publishers and Software Vendors.* All major publishing houses that publish computer-related materials also offer certification-related publications that are matched to objectives and examination content for coverage.

## REFERENCES

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