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Towards Improving Quality -- A Comparison of MIS Master's Degree Programs in the United States

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Introduction

In recent years, more emphasis has been placed on improving the quality of MIS degree programs around the country. Several attempts have been made to rank these programs. Students are often interested in knowing the ranking and/or quality of a program before pursuing the degrees offered by that program. Potential faculty are interested in knowing something about a program's quality before joining its faculty ranks. There are several outstanding, well established and highly reputable master's degree programs in the U.S. and elsewhere. There are other programs, however, that are not as well established. Can information technology be used by these programs to improve their standing by learning from the experiences and utilizing the resources of the more well established programs? ISWorld Net (a network of IS academicians and professionals around the world), for example, is playing a major role in providing various teaching/research and other information for IS professionals to MIS faculty, scholars, practitioners and students.

A component of program quality assessment consists of a comparison between them. The purpose of this paper is to look at the existing MIS master's degree programs in the U.S.; to highlight the similarities and differences among these programs; and to generate some ideas on ways to potentially measure the quality of an MIS master's program.

Program Quality Assessment

A problem with the assessment of program quality is in the word "quality" itself and in understanding what to assess to determine a program's quality. As Melvin George (George, 1982) puts it: "Academic quality [is] a concept difficult to define." A program's reputation is often mistaken with its quality. Further, a program's reputation may lag behind its current quality.

Quality is often cited as a measure of effectiveness (Caruso, 1985). Further, quality should be looked at as a relative term. We often talk about programs with higher or lower quality. Qualitative and/or quantitative measures are needed to evaluate quality. Quantitative measures are often concerned with numbers and are easier to deal with. Qualitative measures, on the other hand, which are not as specific and deal with

measuring the quality of faculty and students, for example, are much harder to define and assess.

Several recent articles have attempted to rank IS master's programs (Earls, 1995), rank the more technical MBA's (Maglitta, 1995), or rank the business schools (U.S. News and World Report, March 20, 1995). In general, studies of the quality of higher education have been conducted since the early 1900's: (Hughes, 1925 and 1934), (Keniston, 1959), (Cartter, 1966), (Roose and Andreson, 1970), and (Lawrence and Green, 1980). Most of these studies are reputational types of studies and several biases have been associated with them. For example, the "alumni effect" (Lawrence and Green, 1980) occurs when high marks are assigned by the raters to their alma maters. This problem may be further exaggerated by large institutions who produce a larger number of doctorates and subsequently a larger number of potential raters. The age of the institution may also create a bias in reputational ratings.

Methodology

Program reviews are often used to assess the quality and effectiveness of a degree program (Caruso, 1985). To assess program quality, (George, 1982) suggests a three step process: i) program goals identification; ii) program goals process and resource establishment; and iii) program goals variable measurements determination.

In other words, a "practical" approach to quality assessment is to compare the appropriate goals of an academic program with its actions and determine the degree of correlation between them.

The program's goal identification can be made from its published literature. The number of degrees granted and the scholarly and professional activities of its faculty and students could be considered as program goals. In a recent study (Trower, 1995), ranked twenty-four institutions based on the number of publications of its information systems faculty in two top journals (MIS Quarterly and Information Systems Research).

Information technology has revolutionized business functions and operations. Its impact on the delivery of higher education has been limited, despite recent encouraging findings such as: "the final test grades of the group of students who were exposed to GDSS-supported collaborative learning were significantly higher than those of the other group of students who participated in the experiment" (Alavi, 1994).

For step ii; process and resource establishment, we suggest concentrating on processes such as teaching methodology and admission policies. As for the resources, we can concentrate on human resources, such as faculty, and material resources such as the availability of and access to information technology.

A number of reports: (George, 82) and (Lawrence and Green, 1980), have identified various variable measurements. These are classified under "material resources" such as: institutional size, library size, available research funds, size of endowment, and condition

of physical plant; "human resources" such as: number and qualifications of faculty, and background and qualifications of students; and "educational experience indicators" such as: faculty interpersonal relations, and the academic climate of the institution.

For step iii; variable measurements, we can concentrate on quantitative variables such as faculty/student ratio. Other measurements could include the existence of an active relationship between a program and various industries.

Data Collection and Analysis

Data was collected for this study from various university print and electronic publications. Telephone interviews and/or other communications was established with programs, when necessary, to verify and clarify published data.

A total of 227 programs in the United States are currently listed in the MIS faculty directory (DeGross et. al., 1995) which offer a master's degree program in MIS, either as a separate degree program or as a concentration as a part of an MBA degree. Although the majority 59% of these degree programs are listed as MBAs with a concentration or option in MIS, some variations exist in the titles of the degree programs. The titles of these programs, with geographical distribution, are shown in Table 1. Note that not all of the MIS master's degree programs are housed at schools of business.

Characteristics of these 227 degree granting programs vary greatly. As an example, the number of faculty listed in the 1995 and 1992 editions of the Directory of MIS Faculty (DeGross, et. al., 1995, 1992) varies from 1 to 17 and from 1 to 18, respectively. Table 2 shows the summary distribution of number, rank, and field of study for these program faculty.

Table 3 summarizes the entrance requirements to a selected number of MIS master's degree programs. Note that a good amount of variations exist in these requirements. Some require competency in programming languages such as COBOL, and/or C/C++, while others do not require competency in any programming languages. Only a small number of programs require a specific background in information systems, business or computer science as a condition for entrance. Some programs are quite weak on the business core while others have an extensive list of business core courses as a part of the entrance requirements.

Table 4 summarizes the degree requirements for a selected number of programs. Note that with the exception of a few course titles such as systems analysis and design, database, and telecommunications, the titles of courses required for the degree vary greatly. The number and type of elective courses also vary among the degree programs. There is not a consistent sequence for the required courses.

Although the external job market has changed greatly over the years, the new course offerings and degree requirements have not followed this pace. For example, there are not many specific courses in the areas of client/server systems, data warehousing, object-

oriented database systems, intranets and office systems, and network management strategies.

Conclusion

It is apparent that a good amount of variations exist among many of the MIS master's granting programs in the U.S. in terms of admission and degree requirements, titles of the degrees, number of faculty, and the number of degrees granted annually.

The basic curriculum guide for many MIS master's degree programs has been the 1981 ACM model curriculum which is now about fifteen years old. Although the course contents in many instances have changed over the years, curricula are often not updated quickly and frequently to reflect technological changes and market demands. We may have reached a point where a standardized curriculum needs to be developed every couple of years.

Although information technology has changed many products and services, it has not been used significantly, with some exceptions, in the education and training of MIS master's candidates. In many instances, they are educated similarly to the way they were five or even ten years ago.

The teaching function should be incorporated into any quality assessment of the Master's programs. Information technology could be utilized in proven ways to improve the quality of the MIS Master's education. Enterprises such as ISWorld Net could serve as an excellent vehicle for this purpose.

By the year 2000, the size of library holdings, for example, should not be as highly correlated with an institution's rank or reputation as it was in the 1970's. Various resources of well established institutions, including their distinguished faculty, could potentially be tapped by other institutions using information technology. Collaborative learning seems to have a lot of potential.

The following characteristics can potentially be considered to assess program quality: frequency of curriculum updates; program, faculty and student relations with industry; teaching quality; a balance between business and technology emphasis in the curriculum; an appropriate course sequencing; number and quality of faculty; and quality of entering students, to name a few.

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Tables are available from the author upon request.

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