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ABSTRACT

Healthcare technicians may receive their training in hospitals/clinics, community colleges/vocational-technical institutes, universities/medical schools, proprietary schools, secondary schools, or government institutions. Most allied health and nursing organizations also require continuing education for relicensure and certification; however, these courses usually do not lead to advanced degrees. Technicians desiring career growth beyond their job-entry level are often faced with three problems. First, because less than 35% of all technical program graduates are from universities/medical centers, their coursework may not transfer for university credit. Thus they are forced to start all over to complete bachelor's degree requirements. Second, many universities cater to the full-time, traditional student, while most technicians need to continue to work while learning or updating skills. A third problem exists in the lack of pertinent programs. In response to the need in all fields for an academic bridge from technical education to baccalaureate degrees, the Advanced Technical Studies Division of the College of Technical Careers at Southern Illinois University developed a 2 + 2 program in which only 60 semester hours, as opposed to the more traditional 120 hours, are required to earn a bachelor's degree after the associate degree is earned. Students are required to take general education courses, core courses, and electives focusing on specific career goals such as aviation management, electronics management, or healthcare management. Many of these classes are offered in the evenings or on weekends to accommodate the working student. (JMC)

BRIDGING FROM TECHNICAL TO ACADEMIC DEGREES

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Bridging from Technical to Academic Degrees: A Healthcare Example

Carnevale and Schultz (1988) concluded from their data analysis of the overall quality of technical education and training that, "There is simply not enough of it." Most technicians seeking further education would surely agree. This paper discusses the types of institutions in which technicians receive their initial training and what educational opportunities exist for advancement purposes. Specifically discussed are some problems and possible solutions for healthcare technicians who desire to complete a bachelor's degree.

Technicians are employees who work with technology that performs many tasks or a few complex tasks. There are 3.5 million technicians in the United States today. More than 1.5 million of these are health technicians, with 1.3 million technicians in engineering and the sciences; and another 800,000 are broadcast, computer and air traffic technicians. Next to professionals, technicians are the most highly educated and well-trained employees in the American workforce (Carnevale and Schultz, 1988). In the healthcare field, examples of technicians are nurses, physical therapists, dental technicians and hygienists, X-ray technicians, and other operators of diagnostic or treatment equipment.

Often healthcare technicians are referred to as "professionals" within their specific organizations, journals and the healthcare industry. However, in most training literature, the term "healthcare professional" does not refer to technicians but to employees responsible

for diagnosis and prescription of treatment to be provided by others and would include: physicians, dentists, veterinarians, pharmacists, etc. This paper does not discuss further education of these professionals.

Technicians usually receive training that applies directly to their employment. Most technical training is sequential and job-specific, and includes principles of new technologies (primarily equipment and process techniques) and new applications for existing technologies. Technicians also take special courses required for licensing or certification, or refresher courses required for license renewal or recertification. Carnevale and Schultz's (1988) study shows qualifying and upgrading training for technical and non-technical workers. This training was broken down into the percent obtained from educational institutions, the percent of formal employer-provided education, and the percent of informal employer-provided education. Of the fifty-two percent of the technicians who go back for upgrade training, 20% receive training from educational institutions, 18% from formal employer-provided training and 19% from informal employer-provided training.

For healthcare technicians, the Committee on Allied Health Education and Accreditation (CAHEA), an organization within the American Medical Association (AMA), collects data on the 26 CAHEA accredited programs. CAHEA's Allied Health Directory shows the type of institutions that provide training for each type of program. These totals show that 34.7% of the programs are housed in hospitals and clinics, 36.5% in community colleges and vocational-technical colleges, 25.2% in universities and medical schools, 2.3% in proprietary

schools, consortia, and secondary schools, and 1.2% in U.S. Government Institutions (Burrows and Hedrick, 1988).

The total number of graduates and enrollees in the different types of CAHEA-accredited programs during the academic year 1986-87 were recorded. Most (65%) of these healthcare technicians were not educated in medical centers or universities but received technical degrees or certificates from community colleges, hospitals, consortia, etc. (Burrows and Hedrick, 1988). The curricula of all CAHEA accredited programs within these institutions are tightly controlled by the professional organizations and licensing bodies.

Dental auxiliary graduates were not included in the CAHEA statistics because they are accredited by the American Dental Association (ADA). The ADA's Annual Report (1986-87) indicates the percent of these graduates from vocational/technical institutes and high schools, from community colleges and from universities/medical centers. Only 11% of the dental auxilary graduates received degrees from universities in 1986 (8% of the Dental Assistants, 16% of the Dental Hygienists, and 8% of the Dental Technicians).

Other technical education programs exist, such as Physical Therapy, Nursing, etc., that are controlled by other accreditation organizations within the healthcare field, but these will not be discussed in this presentation.

While most of the allied health and nursing organizations require continuing education for relicensure/certification, these courses/workshops do not lead toward an advanced degree. If the individual is staying within their specialty and if "career ladder" programs are available,

then that person should pursue a specialty/professional degree (Licensed Practical Nurse [LPN] to Associate Degree Nurse [ADN] to Bachelor of Science in Nursing [BSN], Medical Laboratory Technician [MLT] to Medical Technologist [MT], Respiratory Therapy Technician to Respiratory Therapist). These educational programs provide additional clinical skills/knowledge acquisition that is not available in the other educational options. These programs are needed to advance the body of knowledge within the specialty/profession and increase the level of healthcare delivery. Note that many of these professional organizations (allied health and nursing) are pushing for Bachelor of Science or Master of Science as entry level into their "profession."

However, many working, licensed individuals who have graduated from community college or hospital-based programs do not have access to such university-based programs or are not willing to discount all previous technical education. These baccalaureate level programs, in the past, have been quite traditional with low enrollment and high cost instructional units. Many are just now starting to make allowances for the non-traditional student who is already working in the specialty.

Whenever these technicians desire career growth beyond their technical, job entry level, other than continuing education, they are often faced with three basic problems. First they look to universities to provide further education, but they want to build upon the education they already have and not start over as many bachelor's degree programs might require. Because less than 35% of the CAHEA graduates and

less than 11% of the Dental Auxiliary graduates are from universities/ medical centers, the credit they have received from otner institutional types may not transfer for university credit. Thus the hour requirements for a baccalaureate degree may result in five or more years.

Another problem is that many existing universities cater mainly to full-time, traditional students whereas many technicians wanting further education need to continue to work while updating or learning new skills/knowledge. Courses are offered at times that conflict with work. While community colleges have recognized this and have responded to meet the needs of the adult population, universities have been slower to respond.

A third problem exists in the lack of pertinent programs. Ideally, whenever technicians want to advance or upgrade, they desire one of the following options: 1) preparation to teach or train in the field; 2) professional update of skills; 3) management training; or 4) education in a new career. Many baccalaureate programs exist in colleges of education or programs to change careers, but programs are not as plentiful in update of technical skills or the development of management skills (without a business degree).

If technicians are to continue to grow and advance up a chosen career ladder, universities must provide an academic bridge from earlier technical education to baccalaureate degrees. This academic bridge should be both convenient and valued to the working professional.

Consider first the career option to be a first-level manager in one's technical field. In some technical fields that are housed

in large organizations, management training is adequately provided on-the-job in either formal or informal programs. However, for the healthcare technician, there is rarely an opportunity for on-the-job management training, thus technicians look to universities to provide this training. However, many university management programs will not accept associate or technical credits. For example, to obtain a B.S. degree in management at Southern Illinois University, only 13 hours of the 120 hours required in the program are electives. General education requirements are 46 semester hours and the Business core and major courses total another 61 hours (SIUC Bulletin, 1989-90). Most of the college credit for the technical associate degree would thus not apply to the bachelor's degree from the management department.

The Advanced Technical Studies (ATS) Division of the College of Technical Careers at SIUC provides a more attractive option to many technical graduates in what is called a 2 + 2 program. Only 60 semester hours are required after the associate degree is earned. Of this 60, only 30 hours of General Education are required from all undergraduate work, rather than 46 hours, as long as the GPA is greater than 2.25 (out of 4.00). Students are required to take 12 hours of core courses consisting of 4 out of the following 5 courses: a first-level management course, an advanced technical writing course, a data interpretation/basic statistics course, a labor management course and a job search/professional development course. Also required is another 24 hours of guided electives that are chosen from the entire university offerings of upper level courses.

These guided electives are selected to move the individual toward a specific career goal.

Because many technical students want to advance to management level within specified careers, SIUC also offers in the Advanced Technical Studies Division the following specific management-oriented programs: Aviation Management, Electronics Management, and Healthcare Management. For example, the objective of the Healthcare Management program is to provide a broadly-based educational experience - oriented toward a professional management/administrative career in the healthcare field. This healthcare management option allows the individual to build upon their education necessary for entry level employment (licensure/registration). While it provides an opportunity to earn a bachelor's degree, it also provides the basic skills and knowledge to perhaps work more effectively with peers and patients. It also allows movement toward departmental management within the health care unit. This degree option might also provide a springboard into a different career.

Again only 60 semester hours above the Associate degree are required for the B.S. as long as all other university requirements are met. An associate degree counts for any general education courses taken in the associate degree, as well as 39 semester hours within the first major. Also if an associate was not received but technical coursework was taken, a total of 27 semester hours of technical coursework and 12 semester hours of internship can be accepted. SIUC currently offers many of these courses in the evenings or on weekends to accommodate the working student.

Many graduates of the Healthcare Management program feel as though they are well-prepared to be entry level managers without sacrificing the additional months or years to finish the typical baccalaureate management degree. Pertinent management courses include work center management, healthcare management, health economics, equipment and materials management, fiscal aspects of healtncare, legal aspects of healthcare, labor/management problems, technical report writing and data interpretation. Other specialization electives can be chosen from a wide range of courses in management, marketing, finance, health education, accounting, psychology, sociology, journalism, computer science, etc.

Unfortunately, university programs are still uncommon that permit the "2 + 2" process of totally accepting the associate degree or two years of technical training as two years of college. Even more rare are healthcare management programs, especially those that count all or most of the technical associate degree hours toward the baccalaureate degree.

Baccalaureate degree options at SIUC thus allow the individual to continue to work at his/her present technical level, or to move into management, or to work in continuing education within the healthcare unit. The baccalaureate degree would also allow the individual to teach the specialty subject matter at the post-secondary level in most states.

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