THE HISTORY OF THE FIRST CLINICAL HEALTH CURRICULA FOR STUDENTS WHO ARE DEAF AND HARD OF HEARING

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During the federal educational reform movement of the late nineteen sixties, there began an effort to develop post-secondary curricula for students who are deaf and heard-of-hearing in careers not previously open to them.

FEDERAL MANDATE

In response to urging of the deaf community for a post-secondary program that would prepare students for direct employment, the National Technical Institute for the Deaf (NTID) was enacted under the Lyndon B. Johnson administration to expand employment opportunities for the hearing impaired, to do research in education for deaf clients, and to provide access to post-secondary programs.

NTID was placed in an existing technical university, Rochester Institute of Technology (RIT), and ultimately evolved into one of the colleges of the university. It uses the facilities and the programs of the other colleges, and has created its own programs and facilities.

A National Advisory Group was established to oversee the activities and continues to meet regularly.

Congress supplies the budget through the United States Office of Education (USOE) to the host university. NTID uses the totality of that budget, and reports to the USOE.

THE DEAF COMMUNITY

Schools for the deaf throughout the country actively supported NTID and encouraged their students to attend both NTID and the liberal arts college, Gallaudet.[1] NTID drew much of its initial planning from deaf professionals and faculty.

FEASIBILITY STUDY

The first group of students were accepted directly into the colleges of RIT. Some had difficulties. The students arrived with uneven high school preparation for college level subjects in reading, English, science, and mathematics. They also brought individual communication needs which included American Sign Language, signed English, lipreading and combinations of these skills. The faculty was unprepared to deal with these needs. Therefore, NTID established support programs[2] and decided to proceed with associate degree programs.

The educational objective of the NTID's programs was to develop curricula in areas of employment not formerly occupied by deaf clients, and to prepare students for entrance into the baccalaureate programs of the other colleges.

NTID invited professionals to join the faculty to do employment feasibility studies to identify associate degree programs in business, arts, engineering, and science/technology which could lead to successful employment.

The feasibility study of the paramedical careers revealed a potential for a two-year curriculum for Medical Records and Medical Laboratory Technician. The Medical Laboratory curriculum will be used for this discussion.

RIT had an accredited baccalaureate program of medical technology. The traditional inter-disciplinary Medical Technology curriculum offered the first three years of courses and one year at an affiliated hospital school of medical technology. During the three years on campus, the curriculum included five biology and four chemistry courses plus physics, mathematics and general studies. The senior year, called an internship, was composed of eight or more specialized subjects:

Hematology,
Urinalysis,
Clinical Chemistry,
Bacteriology,
Immunology,
Histology,
Blood Banking
Medical Parasitology
Some hospital programs added Electrocardiology.

It was these subjects that became the central structure and content of the NTID Medical Laboratory Technician Program curriculum.

THE MEDICAL LABORATORY TECHNICIAN PROGRAM (MLT)

The new NTID Medical Laboratory Technician Program had to meet the approval of New York State Education Department, the dictates of the professional field, and the political realities of the university. It had to address the needs of the deaf student and assure their employability.

Professional Needs

To meet the professional demands and employment needs, a content list for the MLT program was developed using the essentials from the accrediting agency for each of the specialized courses shown above. Content from the disciplines such as Physics, was

infused into the content of the professional courses where appropriate. As an example, principles of light from physics were taught as part of the of the Clinical Chemistry, Microscopy and Electron Microscopy courses.

A summer ten-week cooperative experience was designed to give the student the opportunity to sample the work place and make a career change early in their college experience if desired. It allowed the faculty to assess the course content on an ongoing basis through professional input and to reflect upon the student's preparedness.[3] Wherever possible, the Co-operative experience was placed in the hometown hospital due to the fact that no compensation was required, and students could live in familiar surroundings. Upon completion of their program many students returned to their cooperative hospital for employment.

The program faculty was required to have certification in medical technology. This gave the program further professional legitimacy.

State and University Requirements

A multiple-exiting curriculum was designed to allow students to exit the college with employable skills at any time within the two years. Urinalysis, EKG, and histology were offered as qualifying diplomas early in the program to allow students to enter those jobs if they did not wish to finish the two-year associates degree.[4]

A certificate was granted to those successfully completing the first year of college and a summer of cooperative educational experience in a hospital laboratory. These students could be employed as Laboratory Assistants. Students who successfully completed two years with a summer cooperative experience could graduate with an associates degree and could be employed as a Laboratory Technician.

To meet university and New York State requirements, a liberal arts component was added to the professional curriculum. This included courses in each of these three areas: sociology, history and literature. English and communication courses were also added.

University concerns about duplication of programs was eased because the graduates from the associates program had the option of transferring to the baccalaureate program. The Medical Laboratory Technician Program thus provided a source of well prepared students for The Medical Technology Program.

Remedial Needs

To meet the uneven educational preparation needs of the entering students, a pre-technical curriculum was developed to assess and to remedy the students educational background. Faculty then developed educational plans for students.

Academic and personal counseling was provided for the students of the program. NTID also provided a summer program that introduced entering students to the college prior to beginning their first year.

Communication Requirements

To meet the communication needs, faculty were trained in sign language and finger-spelling so that they could deliver all lectures using communication appropriate for the students.

Learning Needs

To meet the special learning needs of deaf students, NTID provided an unlimited supply of visual aids, duplicating services, computers, films, projection, slide and graphics capabilities, and when necessary, taught faculty how to develop their own. The new building was designed as a high-tech educational facility with built-in technology and architectural designs specific for the learning needs of its clients. The institute provided employment counselling, initial placement, and follow-up for students.

Pedagogy

NTID's educational goals were explicit. There was to be no "revolving door." Student retention and success was imperative, employability was the objective. Faculty placed the students in their own profession thus instituting a degree of accountability for faculty. The profession required the graduates to be dedicated and to take serious responsibility. Students were informed of the program requirements, difficulties, and responsibilities prior to entering. They were shown films of the work place, and given tours of the hospitals. They sampled the work, and met with students in the second year of the program.

The MLT program pedagogy combined educational technology with the latest educational strategies of the time. The faculty devoted full attention to the learning needs of students. Research was a separate department. The faculty was encouraged to experiment with new ways of educating. At the time, Blooms Taxonomy, Mastery Learning, behavioral objectives, and experiential learning were popular. Student centered learning included active participation by students in their education. Behavioral objectives were written. Experiential learning was central to all subjects. Faculty met to develop special educational plans. The university's grading system of A-F was supplemented with written evaluations and numerous meetings between faculty and students. The courses were designed to meet the student learning pace and the content, thus requiring some flexibility in the traditional quarter system. When necessary, separate narrowly focused courses were developed in collaboration with other departments.

The Medical Laboratory Technician courses reflected the work place. Lecture and laboratory were integrated whereby the lecture led to an immediate laboratory

application. During the second year, each college laboratory experience was supplemented the next day with a hospital practicum. Hospital technologists worked closely with faculty to design and manage these learning experiences. Heavy home work assignments were replaced with materials design for the student which employed visuals, technology and application.

The laboratories and learning materials were open to the students day and evenings. All materials were always available except for those experiments that were dangerous or regulated by time. The students were responsible for conditions in laboratories. They learned about ordering, financial restraints, choice of instrumentation, hospital politics and the broader hospital environment. This sense of ownership prepared students for active participation and upward mobility in their employment.

Students paced themselves using faculty developed learning materials. Faculty coordinated information and analogies so that there was subtle reenforcement of primary content elements throughout the students tenure in the program. If the student was having difficulty with a concept, the other faculty would also work with that concept.

Primary emphasis was placed on ethics, honesty, teamwork and responsibility. The learning process included four steps. They included understanding of the concept, identification of errors, remedying underlying principles if needed, and providing the opportunity to repeat the activity without punitive action.

Competition among students was discouraged and team activities were components of the professional curriculum. Homework assignments were designed so that students were encouraged to meet and do homework assignments together. Students were taught how to help without encouraging dependency. Counsellors actively taught subjects involving interpersonal relations, ethics, and group responsibilities. Students were motivated by responsibility to the patients rather than one-upmanship, and evaluated the quality of their own laboratory performance using manufactured control materials.

If the student showed a lack of interest in the program, they were assisted in finding another program of their liking and every effort was made to transfer course credits. If the student was having a personal problem, counsellors were available within the department who were familiar with the program, the faculty, the students, and the university.

The one criteria for dismissal from the program was a breach of honesty specifically in reporting errors, reporting results, keeping records, completing ones own work. The laboratory experiments were designed to reveal breaches of honesty.

During the second year, courses in employment skills, and resume writing were added. All initial employment was arranged and the faculty remained in contact with graduates.

Outcome of the program

The program continued for twenty four years. Approximately 160 students have graduated from the program making a significant entrance of deaf students to the field of medical technology.

Historically, women have dominated the field of medical technology. The program has provided a rigorous science education for deaf women.

Graduates from the associates program have continued for a bachelors degrees in medical technology and other sciences.

Demise

The program will be terminated in 1995 as a result of the strategic planning movement sweeping the universities. The reasons given were low student numbers and the high cost of educating them. The uniqueness of the program, the enormous employment opportunities, the active professional support, the needs of deaf women, and the upward trend in student numbers (even though the AIDS epidemic had effected program appeal throughout the country), did not impact upon the decision of the strategic planning committee.

ENDNOTES

1. The Handicapped Education Act effected deaf education. Many of NTID students now come from mainstreamed programs in High schools.
2. NTID developed support services in every college of RIT for students admitted directly to those colleges. Those services have evolved into student note-takers, trained interpreters, facilitating transfer students, and NTID faculty who tutor and advise students.
3. Later, the faculty added an internship to the second year of the curriculum to meet professional requirements for more formal hospital based experience. This internship included twenty weeks of in-hospital learning, two days a week.
4. Currently electrocardiology is part of respiratory therapy and emergency room responsibilities. Histology is a degree granting program.