Professional Education in Urban Public Transportation

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In the rapidly developing field of urban transportation, the need for a practicing professional to continually update his or her knowledge and skills is critical. Those holding positions of responsibility, whether in the planning or operation of urban transit systems, are increasingly required to possess a knowledge of the latest methods of transportation planning and management, a familiarity with the latest technological developments, an understanding of the role played by transportation in the functioning of urban centers, and an awareness of modern methods of analysis and design. Yet the pressure of daily responsibility, the difficulty of initiating self study, the increased rate of growth of technical knowledge, and the change in character of technical and planning education make it difficult for the individual to fulfill these needs.

A 6-week course, developed by the Transportation Research Institute of Carnegie-Mellon University, offers the practicing professional a comprehensive overview of the urban transportation field and provides unique conditions for interacting with his peers. A wide range of topics is covered, much like those in a typical graduate program, but within a time frame that permits the participant to leave his or her place of employment on a full-time basis and return without excessively disrupting the continuity of work assignments.

There is recognition of the special need in urban public transportation for on-site study of new applications and practical results to supplement academic training. Accordingly, the program is structured in 2 parts. Part 1 consists of graduate level lectures and assignments, a series of seminars planned and conducted by participants, and several tours of local transit facilities. Part 2 consists of a lecture-study tour of major North American and European cities where significant transit developments are occurring.

The on-campus lectures in part 1 are grouped under 4 functional headings: planning, technology, management, and quantitative methods. The specific topical content of the 4 areas and the time devoted to each have been continually revised in response to detailed comments made by participants and to changing interests of the transportation profession. Instructional methods have also evolved. Seminars, panel discussions, and case study exercises provide opportunities for participant involvement.

On the lecture-study tour, the typical program in any city consists of a 2-day visit devoted to lectures and visits to transit systems. Examples include old systems in Paris and London, results of organization and integration in Hamburg and Munich, new

transit systems in Montreal and Rotterdam, transportation and land-use planning in Stockholm and Runcorn, bus and tramway system developments in Rotterdam, Munich, and Gothenburg, and transit solutions in medium-sized cities such as Gothenburg and Bremen.

First offered in the fall of 1970, the program has been given each year thereafter. As of 1973, there have been 176 participants, representing 87 public agencies and 5 private firms. The former have comprised state, local, and regional planning and operating agencies, and, together with the private firms, are located in 22 states, the District of Columbia, Puerto Rico, and Mexico. Participants have represented a broad range of planning and operating positions at predominantly middle and upper management levels of responsibility. Participation in the program has been largely supported by the Urban Mass Transportation Administration under Section 10 of the 1966 Amendment of the Urban Mass Transportation Act.

Program participants have responded favorably to various design features that allow for greater interaction among participants and faculty. Many have commented that the most educationally valuable experience was provided by the opportunities to share common interests and to learn about activities in allied disciplines from other practitioners, including fellow participants, on-campus faculty, and professional counterparts met during the lecture-study tour.

This points up again the need for mechanisms whereby professionals of various disciplines can work together over an extended period of time to better understand one another's perspectives, problems, and points of view. This cannot be overemphasized in an era when transportation solutions are no longer viewed in a technological framework but incorporate many viewpoints and are characterized by diversity. At the graduate level, universities attempt to simulate interdisciplinary teamwork through project courses and interdisciplinary research. The mechanism for accomplishing this at the professional level is demonstrated to be through academic programs that accept persons who have a wide variety of backgrounds but common objectives and needs for professional training.

The strong endorsement of the lecture-study tour segment by participants supports the original view of the program designers that field study of a practical nature, representing material that could normally not be furnished directly by a university, would be essential for a program of this type and that visits to principal cities where innovative work is under way in solving critical urban transportation problems would be an essential element of a successful program.

The major task in a program of this nature is improving communications between participants and lecturers and among participants so that each has the opportunity to express his or her views, needs, and desires and to fully contribute to the educational experience gained by all. Obviously a group of this type is highly verbal and represents a wealth of experience and a body of knowledge that should be incorporated within the program.

A program of this nature can be practical while retaining its academic integrity. There is no value in describing theoretical and mathematical models that neither work nor have direct applicability to specific problems or in describing theoretical methodologies when the participants are eager to learn new ways of solving their current critical problems.

Two devices that appear to be successful in further defining the application of fundamental areas to specific problem situations, as well as providing greater opportunities for communication, are the case study and the seminar. Case studies have been used, particularly in the management area, to supplement or replace classroom lectures. The seminars involve topical presentations and discussions by the participants with the assistance of faculty or other experts in the field.

During a time when graduate enrollments are declining and the need for individuals with advanced training appears to be diminishing, many practicing professionals can greatly benefit from advanced university training. Special academic programs designed to meet these needs are one of the responses of the university to its responsibilities of furnishing high-level academic training to all segments of society.