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NEW YORK
HALL OF SCIENCE

Annual Progress Report to the Department of Energy

SET Careers Program: An Interactive Science, Engineering, and
Technology Career Education Exhibit
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ABSTRACT

The New York Hall of Science, in response to the national crisis in education and employment in science and engineering, is developing and pilot testing a unique, interactive, video-based, hypermedia series on energy-related and other science and engineering careers for middle and junior high school students.

Working in collaboration with the Consortium for Mathematics and its Applications (COMAP) and the Educational Film Center (EFC), this pilot-demonstration phase will last 14 months, during which time the basic design, production, and testing of eight science and engineering career modules (video and software) will be completed and installed as an interactive educational exhibit at the New York Hall of Science. This career education package will then be distributed to other science technology centers nationwide.

Following this pilot phase, the Hall, in collaboration with EFC and COMAP, plans to produce an additional 22 interactive science and engineering career profiles and a computer data base of related science and engineering occupations, with support from foundation, corporate, and other government sources for national distribution to science museums, community youth organizations, and school science, math and guidance departments. Partial support for the pilot phase provided from the Department of Energy's Science Education Program will assist in the development of energy-related career profiles.

SET CAREERS PROGRAM

The project was launched with a meeting of the Advisory Board in September. Results of a Career Survey of Middle School Students, conducted in June 1992 with 7th and 8th graders from six sites were presented by project evaluator Barbara Flagg. Dr. Flagg's study indicated the top 8 careers from a total pool of 30 that were of highest interest to the students surveyed: cosmetology, architect, visual artist, electronics engineer, sports statistician, computer programmer, veterinarian, robotics engineer.

General approaches to the project were discussed with the Advisory Board. The software development team presented a sample cut of the approach they were considering, the video profile team presented clips from similar work, and guidelines for profile selection, and evaluation were discussed.

During the fall and early winter the software development team worked on several approaches to the shell including: an overall view of careers with selection of a specific career, presentation of a career by user interest, links among careers, and interviews with the profiled people.

Evaluator Dr. Barbara Flagg completed a second formative evaluation in early January in order to guide decision making about which careers to implement in the prototype; to learn what curiosities students have about these careers; and to uncover students' career aspirations. The SET Careers team located professionals in each of the 8 categories for possible inclusion in the pilot profile group. They looked for a balance among women, men, minorities, and the disabled. Eight written profiles were developed and presented to students to read one at a time. Profiles were rated and ranked according to student interest. The same profiles were shared with the Advisory Board and project team. Four profiles were selected for production in the pilot phase: veterinarian - Lisa Tell, computer designer of robots - Pete Bonasso, emergency medical technician - George Diaz, and mechanical engineer working with electric vehicles - Susan Fancy.

The production team shot footage on Lisa Tell, veterinarian at the National Zoo in Washington. This footage was used by the software development team to produce a still prototype for testing of the shell with museum audiences. The tape was also sent to evaluator Barbara Flagg for testing at the middle school level.

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The shell was tested at the New York Hall of Science during late February with the target audience. Evaluators were looking for: interest, access and the ability of students to use the program independently. Students also made suggestions which were sent back to the software development team.

The testing indicated that the format worked well with the target audience, that student interest was high. Refinements on the still version were made and work began on the interactive, moving version.

During mid-March the production team continued shooting on site. They shot footage of Susan Fancy - mechanical engineer, Pete Bonasso - computer scientist, George Diaz - paramedic/emergency medical technician, and Lisa Tell - veterinarian.

In March consultants working with the New York Hall of Science team began to develop a plan for the data base and on-screen self-assessment components of the program. The profiled careers will be the focus of the data base, organized around content hubs. Each profile will be connected to 4-5 careers in the same area as the profile; i.e. Lisa Tell veterinarian - working with animals will be the content hub. The 4-5 careers will be arranged in a hierarchy established by amount of formal training required ranging from high school through college training. The on-screen self-assessment component will be a short interview which will lead the user to either the profiles or the data base.

The next few months will be spent refining the shell, producing an exhibit kiosk and on-screen module for early summer testing at the New York Hall of Science, developing the data base format to support 8 profiles, and the revised on-screen and print version of the self-assessment components of the workbook.

Additional funding from the National Science Foundation has been obtained to support the addition of 22 profiles. The three project funders are: The Alfred P. Sloan Foundation - grant to the Consortium for Mathematics and Its Applications, the United States Department of Energy - grant to the New York Hall of Science and the National Science Foundation - grant to Education Film Center.

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