THE SCIENCE AND TECHNOLOGY CAREER LIBRARY CORNER

Final Report

February 1, 1995 - January 31, 1996

Peggy Ruth Cole, Ph.D.

March 1996

Prepared for

THE U.S. DEPARTMENT OF ENERGY
AWARD NO. DE-FG02-95TE00049

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.
Table of Contents

Project Summary .................................................. 1
Installation of the SET Career Library Corner ............... 2
Summative Evaluation .............................................. 3
Dissemination ....................................................... 4

Appendices
A. List of Careers in the Information Bank
B. New York Hall of Science Career Resource Center Bibliography
C. Evaluation of the SETQuest Program: A Comparison Between Floor and Library Use
D. List of Science Museums and Centers Using SETQuest
E. List of Institutions Involved in the Parent Outreach Science Career Education Program
F. SETQuest Exhibit Floor Background
THE SCIENCE, ENGINEERING AND TECHNOLOGY CAREER LIBRARY CORNER

PROJECT SUMMARY

The New York Hall of Science received a grant of $159,954 over one year to install and pilot-test the Science, Engineering and Technology (SET) Career Library Corner at the New York Hall of Science. The SET Career Library Corner is located in a multi-media library setting where visitors can explore careers in a quiet, uninterrupted environment in contrast to the original installation designed as a museum floor exhibit.

SET Careers is a museum exhibit featuring SETQuest, a new CD-ROM/Videodisc, interactive multimedia and video series on science, engineering, and technology career exploration for science museums, tech centers, schools, libraries, and other educational settings.

The actual program, which is computer screen-based is identical in both the library and museum floor setting. On the exhibition floor are two exhibit kiosks, back to back with a large display panel between them, each running the SETQuest program. Each kiosk contains a "repeat monitor" allowing visitors to view an identical screen to the one visible at eye level where a visitor is working with the program.

The Library Corner was installed on the premise that privacy would be a factor in the use of the program since it contains a personal self-assessment component. We suspected that a busy on-floor museum setting, with a repeat monitor allowing strangers to see the on-screen choices of a user, might be inhibiting. A secluded library setting might be more conducive to long term commitment to the program.

The SET Career Library Corner includes: the SETQuest program, (an interactive multi-media platform presenting careers in science, engineering, and technology); print materials including reference and trade books, pamphlets, and handouts; and career-related videos.

The Educational Film Center developed two new career-related profiles, bringing the total number of career profiles to eight (forensic medical technician, and ecologist). They also expanded the data base with an additional eight energy-related careers.

An independent evaluation firm, The Scarsdale Group, compared visitor use of SETQuest on the exhibit floor and in the library to quantify differences in the usage of the program as a result of different physical environments and record differences in the learning experiences of the visitors. These findings have provided insight as to how to best present career information and the most effective means for disseminating this method of presentation.

Four museums including the Hall are currently using SETQuest; five institutions have committed themselves to installing the program. The establishment of a Parent Outreach Program and Family Library Centers will allow for further dissemination of the SET Career Library Corner.

Changes in the personnel of the U.S. Department of Energy, the closing of the Office of Science Education, and the physical expansion of the Science Access Center where the SET
Career Library Corner is located, resulted in slight delays to completion of this project and this report.

THE SCIENCE, ENGINEERING AND TECHNOLOGY CAREER LIBRARY CORNER

INSTALLATION OF THE SET CAREER LIBRARY CORNER

SETQuest Software

The Educational Film Center developed the interactive components of the SET Careers Library Corner, called the SETQuest program. To date, visitors who use the program can interact with eight people on the job in a multi-media format by selecting questions which are answered by the profiled person.

There are three components to the SETQuest program. Career Profiles provides users with opportunities to meet people on their jobs, interact with them through questions, work-related simulations, and to observe typical aspects of the profiled person's day. Profiles include: Mechanical Engineer, Emergency Medical Technician, Computer Scientist, Ecologist, Aerospace Engineer, Rehab Engineer, Veterinarian, and Forensic Scientist.

The Information Bank is a database which allows users to explore five additional related careers for every profiled career ex. for the veterinarian there are four other careers involving working with animals. The careers in the Information Bank are arranged in order of formal training, from high school to graduate school. Users can obtain information about a particular career, the work setting, necessary skills and abilities, required education and training, employment outlook, and where to go for further information. Currently, 40 different careers in the database complement the profiles (See Appendix A for List of Careers in the Information Bank). Printouts are available to take home.

The Career Match Self Assessment presents users with a series of questions about their interests, skills, and abilities. Based on user response, the program leads users to the profiled people whose work best matches the results of the self assessment. The Career Match Self Assessment is also connected to the Information Bank so users can learn more about careers related to their interests.

Storage System and Surround

The multi-media platform was modified and refined for handicap access and installed in the Science Access Center, the Hall of Science's library. The New York Hall of Science had, in the period between developing the proposal for the SET Careers Library Corner; and installing SETQuest, installed four other computers in the Science Access Center. Staff reported no vandalism of theft of the computers or software, since the library is always staffed when visitors are present. We therefore decided to install two computer stations, rather than one, as originally projected because we did not require extensive cabinetry to protect the computers. In this way we were able to offer more visitors access to the SETQuest program.
The SET CAREERS Library Corner consists of the following elements:

Mural - a large background mural using the same colors as the SET CAREERS panel on the exhibit floor.

Signage - a large sign suspended from the ceiling identifies the area as "CAREER DISCOVERY."

Customized Table Top - A table top, designed to fit into a corner and provide seating for up to 8 visitors.

Computers - Three computers (2 running SETQuest, 1 running another career-related program, Collegetown).

VCR - Set in the table is a VCR for running career-related videos.

Books - A large bookcase of filled with career-related books and publications.

Library Rack - A large wire rack contains career-related phamplets, magazines and other publications.

Videos - A series of career-related videos are available in the area.

The corner is set up facing away from the rest of the library and exhibit floor to minimize visual and aural stimulation. Three chairs are positioned at the SET CAREERS Library Corner with ample room for another 5 people to pull up chairs.

Career-Related Print and Video Materials

With the installation of the SET Career Library Corner, many new reference materials related to educational and career opportunities were added to the library's collection. From biographies of famous scientists to several series on various career opportunities to videos promoting area colleges and universities, the career-related print and video materials fully complement the SETQuest program (See Appendix B for New York Hall of Science Career Resource Center Bibliography).

Summative Evaluation

An independent firm, the Scarsdale Group developed a survey to compare and evaluate visitor use of SETQuest on the exhibit floor and in the library. The intent of the study was not to assess the value of the program itself, but to find out whether the physical placement of the computer (in the library as opposed to the exhibit floor) resulted in differences in how the program was used and consequently affected the user's learning experience (See Appendix C for Evaluation of the SETQuest Program). In focussing on the effectiveness of the SET Career Library Corner, findings will be used to determine the most effective way of presenting this method of career exploration.

The Hall's undergraduate floor staff (Explainers) were trained by the evaluators to collect
observational data. The Scarsdale Group analyzed the data and came to the following conclusions:

- While visitors did not come to the Hall of Science with career exploration in mind, the amount of time spent (a median of 13 minutes in the library as opposed to 5 minutes on the exhibit floor) and the number of decisions made throughout their interaction with the program (a median of 12 decisions per user in the library versus 7 decisions per user on the exhibit floor) is indicative of the appropriateness of the library environment for visitors to explore careers in science and technology.

- Usage varied greatly by age. Visitors under seven years old used exclusively the exhibit floor installations (28% of total exhibit floor installation users). Visitors eighteen years or older frequented the library installation more than any other group (40% of total library installation users).

- The project's target audience -- the junior high school age group -- was split less by differences in the physical environment and more along gender lines. Females in both the elementary and junior high school age groups expressed a steady interest in the exhibit floor installation (20% and 22% respectively). Unlike the behavior of their female counterparts, a marked shift in usage takes place for males between the elementary and junior high school age levels. Their interest in the exhibit floor installation drops from 45% of total user usage to 5%. Significantly, their interest in using the program in the library remains steady in both the elementary and junior high school groups (27% and 23% respectively).

Conclusion: Because usage was different in each setting based on gender and age level, particularly with regard to the targeted junior high school audience, both settings are appropriate in order to reach the broadest audience. The extensive time visitors spent using the library installation as opposed to the platform on the exhibit floor and the contrasting usage patterns according to gender and age level, particularly with regard to this project's targeted junior high school audience, together underscores the importance of both types of installation.

Dissemination

The utility of both installation methods of SETQuest -- in a library and exhibit floor setting -- is exemplified by the interest displayed by a wide array of institutions. Four science museums including the Hall are currently using SETQuest; five others will be installing the program soon (See Appendix D for List of Science Museums and Centers). SETQuest is also being disseminated through a Parent Outreach Science Career Education Program. The interactive multimedia and video career education components have been installed in a quickly expanding 15 city network of quite different institutional settings: science museums, public libraries, community youth and family service organizations, and schools (See Appendix E for List of Institutions involved in the Parent Outreach Science Career Education Program). Permanent Family Science Career Education Centers are in the process of being created in Baltimore, Chicago, El Paso, Miami, Dallas, New York, Phoenix, and Detroit.
Appendix A

List of Careers in the Information Bank
List of Careers in the Information Bank

Building Things:
Tool and Die Maker
Engineering Technician
Mechanical Engineer*
Marine Engineer
Human Factor Engineer

Working With Animals:
Animal Breeding Worker
Veterinarian Technician
Zoo Educator
Wildlife Research Biologist
Veterinarian*

Using Technology:
Line Installer/Cable Splicer
Nuclear Medical Technologist
Computer Software/Applications Designer
Computer Scientist*
Astrophysicist

Helping People in Emergencies:
Emergency Medical Technician*
Surgical Technician
Anesthetist Nurse
Critical Care Nurse
Industrial Hygienist

Working in Flight and Space:
Aircraft Mechanic
Aerospace/Aeronautical Technician
Commercial Pilot
Aerospace Engineer*
Satellite Engineer

Protecting the Environment:
Fish Culture Technician
Environmental Technician
Environmentalist
Hydrologist
Ecologist*

Fighting Crime:
Firearm and Fingerprint Technician
Medical Crime Lab Technologist
Polygraph Examiner
Computer Programmer Security Specialist
Forensic Scientist*

Helping People with Disabilities:
Rehab Technician
Physical Therapy Assistant
Rehab Engineer*
Landscape Architect
Audiologist

* Profile exists for this career.
Appendix B

New York Hall of Science
Career Resource Center Bibliography
New York Hall of Science
Career Resource Center

Bibliography

Career Opportunities and Information:


B363  Cei

B331  Cor

B371  Cut

B502  Eas

B370  Ede

B610  Eps

B363  Fan

B331  Haw

B658  Hoy

B610  Kar


Swa

B620  VGM

B574  Win

B540  Woo

**Biographies and Other Information:**

B610  Aas

B609  Aas

B630  Ada

B591  Bai

B359  Bil


B610 Kro


B509 Laf


B629 Lev


B574 Man


B502 Med


B509 Mus


B731 Nav


B720 New


B509 OHe


B509 Opf

Sab

Ser

GENA  Shelton, Mark L.  Working in a Very Small Place: The Making
She

GENA  Spock, Benjamin, M.D. and Mary Morgan.  Spock on Spock: A
Spo

GENA  Stearner, S. Phyllis.  Able Scientists -- Disabled Persons.
Ste

Van

Wad

GENA  Warner, Deborah Jean.  Graceanna Lewis: Scientist and
War  Press, 1979

War
Career Book Series:

- VGM Professional Resumes Series (12 Titles)
- VGM Opportunities Series (105 Titles)
- VGM Career Series For You (18 Titles)
- VGM Career Portraits (12 Titles)
- VGM Handbook Series (4 Titles)
- Great Jobs Series (5 Titles)
Education/Career Videos:

Phillips Beth Israel School of Nursing
Polytechnic University
Queensborough Community College
Kingsborough Community College
St. John's University
City College
Working It Out
Biotechnology – On the Cutting Edge
Medical Technology Careers
Careers in Robotics
Appendix C

Evaluation of the SETQuest Program:
A Comparison Between Floor and Library Use
New York Hall of Science
EVALUATION OF SETQuest PROGRAM

A COMPARISON BETWEEN FLOOR AND LIBRARY USE

THE NEW YORK HALL OF SCIENCE

Prepared by:
THE SCARSDALE GROUP
February 18, 1996
Comparison between floor and library use of SETQuest

Introduction

This is an evaluation of an interactive computer program, entitled the SETQuest Program, dealing with the subject of science careers. The program is interactive in the sense that the direction and use of the information are completely under the control of the user. Interactive media provide the visitor with the opportunity to shape the program and, consequently, the learning experience. Two learners may be able to traverse the same instructional materials, perhaps even with the same objectives, yet not share a common experience. By its very nature, this program is intentionally designed in segments, in which the visitor responds to each segment. This influences the sequence, time spent, and thus learning of the participant.

A further difference in the experience of the learner is related to the placement of the computer. At the Hall of Science, there are three computers that run this program continuously. Two of the computers are placed on the exhibit floor, near each other, where floor traffic is constant. The third is placed in the library and is part of a general exhibit dealing with the subject of career exploration.

The question addressed in this evaluation is not the value of the program itself, but whether the physical placement of the computer, that is, library versus floor, results in any differences in the usage of the program and the resultant experience of the visitor. In order to examine this difference, a survey approach was used, where recorded data drawn from a series of survey samples were collected and analyzed in an attempt to find consistent patterns.

Methodology

A draft survey instrument was developed and then refined through interviews with museum personnel familiar with both the program and the pattern of traffic in the Hall of Science. This instrument was then pilot-tested at the museum and further refined.

Data were recorded in half-hour blocks randomly distributed throughout the day and week, by direct observation. There was closer observation and a simple interview for a selected group.

A group of "Explainers," students who are employed by the Hall of Science to act as floor explainers, were trained in collecting data and how to use the survey instrument. These Explainers then collected the data.
The data collection schedule consisted of randomized half-hour blocks developed on the basis of information supplied by Hall of Science personnel to insure appropriate sampling of identified target populations. The schedule was modified to accord with various circumstances, in an attempt to maintain the principles of representative sampling in the collected data. Data were collected for four days of a holiday week, three weekend days, and six weekdays of a normal work/school day. Survey sheet data were tabulated and analyzed to enable conclusions to be drawn from the arithmetic data and from the more open-ended questions. In the analysis of the data, it became obvious that the pattern of holiday usage and of weekend usage was the same, and consultation with Hall of Science personnel confirmed that traffic patterns for weekends and holidays are generally consistent. Data for weekends and holidays were then pooled.

Data analysis

The data collected were separated into two groups, that collected for the computers located on the exhibit floor and that collected for the library unit. These groups were then analyzed for differences as to day of collection, that is weekend/holiday and weekday. The data were also sorted by age and by gender. Information collected included the amount of time each participant spent using the computer and the number of decisions made within the program itself. The following table gives the medians for time spent and decisions made, by location. The median was chosen as a more appropriate measure, to avoid skewing the data because of extreme values from just a few users.

<table>
<thead>
<tr>
<th>Location</th>
<th>Minutes</th>
<th>Decisions</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekdays (all)</td>
<td>5.0</td>
<td>11.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Floor</td>
<td>5.0</td>
<td>7.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Library</td>
<td>13.0</td>
<td>12.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Weekend/Holiday (all)</td>
<td>5.0</td>
<td>5.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Floor</td>
<td>5.0</td>
<td>5.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Library</td>
<td>5.0</td>
<td>7.0</td>
<td>15.0</td>
</tr>
</tbody>
</table>

An examination of Table 1 shows that those participants using the library computer during the week tend to spend considerably more time and make a corresponding greater number of decisions throughout the program. An examination of the ages of the participants also makes obvious the fact that the library tends to attract the older group, both during the weekday and the weekend/holiday period, although the weekend difference is greater. The disparity between medians and means on weekend days indicates that a small number of older subjects, particularly in the library, made a large number of decisions.
Table 2
Medians For Time Spent and Number of Decisions Made—By Age Group

<table>
<thead>
<tr>
<th>Age</th>
<th>Minutes at Computer</th>
<th>Number of Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;7</td>
<td>4.4</td>
<td>5.7</td>
</tr>
<tr>
<td>7-11</td>
<td>7.8</td>
<td>10.6</td>
</tr>
<tr>
<td>12-14</td>
<td>7.3</td>
<td>12.1</td>
</tr>
<tr>
<td>15-18</td>
<td>12.1</td>
<td>24.1</td>
</tr>
<tr>
<td>&gt;18</td>
<td>7.8</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Table 2 shows the not unexpected result that the very young children spend only a minimal amount of time using the program. However, the amount of time and corresponding number of decisions by the 15 to 18 year old population is notable.

Table 3
Number of Users of Different Ages, at Both Locations

<table>
<thead>
<tr>
<th>Location:</th>
<th>Age:</th>
<th>&lt;7</th>
<th>7-11</th>
<th>12-14</th>
<th>15-18</th>
<th>&gt;18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor (98)</td>
<td>&lt;7</td>
<td>27</td>
<td>34</td>
<td>12</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>Library 35</td>
<td>0</td>
<td>10</td>
<td>7</td>
<td>4</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

Because the total number of users on the floor far outnumber the number of users in the library, comparison of data here must be across rows, rather than columns. Given that, it can be concluded that the program is used most by the elementary school children and less by the older students. Adult usage is significantly large, since 31% of all the users were estimated to be 15 or older (See Graphs 2 and 3). For the older (>15) group, 65% of these made five or more decisions throughout the program. This compares to 52% of those under 15 who made five or more decisions.

Table 4
Comparison by Location, Age and Gender

<table>
<thead>
<tr>
<th>Location:</th>
<th>&lt;7</th>
<th>7-11</th>
<th>12-14</th>
<th>15-18</th>
<th>&gt;18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>8</td>
<td>9</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>26</td>
<td>3</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Library</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Male</td>
<td>0</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

An examination of Table 4 suggests that males at the elementary school level use the program comfortably, with less interest by females. This seems to change considerably for the middle school years. The library setting does not show this phenomenon. In an effort
to explain this shift, a median was calculated for the number of peers working together in groups for each of the elementary and middle school, male and female populations. These calculations show that the median number of girls in the elementary group is two, while the median for the boys of this age is only one. The peer group median for the middle school groups is the same for both girls and boys, and equals one. This suggests that the age 7-11 group of girls tends to be more social in the use of the program than the boys are (See Graphs 4 and 5). Overall, females represented only 39% of the users, rather than the expected 50%. However, of all the users making five or more decisions throughout the program, 43% were female, indicating more intense use of the program.

One question of interest within the program itself was the use of a self-assessment program designed to permit the users to examine their own career direction. The program was designed so that, as a new user came up to the computer, that user could continue the program where the previous user left off, return home to the beginning of the program, or use the self-assessment. The self-assessment could also be accessed while working through the program. There were no users who accessed the self-assessment while working with the program, and the number beginning the use of the program with the self assessment was only 2% of the total (see Graph 1).

**Graph 1**

**Computer Position at Initial Contact**

On weekdays, there were 2.33 times as many users at the floor stations as there were at the library station during the sampling periods. On weekends and holidays, there were 2.71 times as many users on the floor as at the library, and overall, the floor to library station usage ratio was 2.62. This is not unexpected since the computers located on the floor are in a much heavier traffic area than the computer in the library.

The difference between average time spent at the library unit (7.64 minutes) and at a floor unit (7.29 minutes) is not statistically significant even at low confidence levels.
The ratio of male to female library users was 1.85, while the male to female floor user ratio was 1.49. Boys were 2.42 times as likely to use a floor station than the library station, and girls were 3.00 times as likely to do this.

Using median group size data, it appears that there is a predominance of single users for the floor units during weekdays, and a predominance of single users for the library unit on weekends and holidays. The one exception to this is the weekday use by girls aged 7 to 11.

Using median estimated age data for all locations, the typical user during school days was 10 years old, while for weekends, the typical user was 12 years old. The difference is greater when looking at floor and library users on weekends, where the typical estimated age for floor users was 10 years, compared to 15 years for library users.

In operating the SETQuest program, the user makes a number of decisions by clicking on the appropriate buttons. On weekdays, the median number of decisions made at the floor units was 7.0, compared to 12.0 at the library unit. On weekends and holidays, the median number of decisions made at the floor units was 5.0, compared to 7.0 at the library unit. The mean number of decisions at the library unit on weekends, however, was 16.3, indicating that a few weekend users made heavy use of the program.

The median time spent by users at either location on weekends was 5.0 minutes. On weekdays, the median floor unit time was also 5.0 minutes, but at the library unit it was 13.0 minutes.

At the library, there were auxiliary materials available for further information, as well as another computer with a program which gave further information concerning careers. In examining whether or not the SETQuest users in either setting went on to use other print materials, the data indicate that, of the group surveyed, none did so. As to use of the other computer program, only one individual, a 10 year old girl, went on to use the second program.

The three careers on which the most time was spent, on the average, were those of Veterinarian, Medical Technician and Mechanical Engineer. The answers to the question of which career interested the user most and what was the most important thing the user learned indicate that, within this program, those careers have the most exciting simulations.

The most important thing noted by the users tended to be facts related to the careers themselves. Only a small minority of users indicated that they had learned any information that related to a career choice for themselves.
Conclusions

Given the setting of the SETQuest program, that is, in a science museum which emphasizes hands-on experimentation, the program is being used as a hands-on exploration. The pictures that run continuously do intrigue possible users who then begin the program, primarily at the place in the program where the previous user left off (64%), or a smaller group starts the program over (34%). Most of the users than find the program sufficiently interesting to continue to use the program for some time, defined as at least two minutes (80%). The length of time spent by the participants, even the youngest, indicates that they find the program of interest.

Answers to questions indicate that the Hall of Science attendees are using the program primarily for entertainment and only incidentally for information. The users are not thinking along the lines of career exploration and did not come to the Hall of Science with career exploration in mind. This does not negate the value of the program, since the amount of time spent and the number of decisions made do, in fact, suggest that they have gained information regarding specific careers although they may not be relating those careers to their own aspirations at that particular time.

The number of decisions made throughout the program also indicates a high interest, but again, the interest is in the simulations themselves, rather than assessment of their own careers, and it is the simulation that is the target of interest.

An examination of the number of users who began their use of the program where the previous user had left off (64%) further substantiates the fact that Hall of Science visitors generally did not come to see this program specifically. It is also true that users do not move from the floor computers to the library for more information. That finding, coupled with the lack of usage of the pamphlets, printouts, etc., available in the library, indicates that visitors do not initially think of the Hall of Science as a source of career information, even for those careers in science and technology. It would be interesting to examine computer usage in the library a year later, to see if those who did use the program came back to use the materials at a later date.

The profile of the user in the two different settings is different. Most obviously, the 30% of the floor users who are under seven are not found in the library. The largest number of users in the library are those over eighteen. The largest number of users on the floor are the seven to eleven elementary age children. The children are probably not viewing the program in the sense of examining their own careers, but they are getting information regarding the different careers available to them. The twelve to fourteen year old middle school users view the library and the floor setting differently. It is either of more interest to girls than to boys or, one suspects, more socially permissible for girls of that age to use the program than for boys, since the number of males is considerably greater in the library, whereas the females predominate on the floor. In fact, in examining the high school age data, no girls were found to have used the program in the library.
The large number of adult users in both settings is an interesting phenomenon. The number of women using the program is larger in both settings. The average ages of men on the floor and the library are, respectively, 30.1 and 30.4, which indicates no particular preference. The average ages of the women on the floor and in the library were, respectively, 32.8 and 34.3, not enough, given the size of the sample, to make any generalizations. It would seem, though, that the women users tend to be older than the men when both groups are over eighteen.

Given that the careers mentioned in the SETQuest program are not those that traditionally attract women, it is not surprising that 61% of the users, rather than the expected 50%, were men. However, it is worth noting that an examination of the number of decisions made throughout the program indicates that the women are the more serious users.

A comparable examination of age versus the number of decisions indicates that those users 15 or older are, not unexpectedly, the more serious users.

Recommendations

The SETQuest program is presently serving a dual purpose. It gives the viewers information regarding what is involved in specific math and science careers and it gives information for those interested in exploring a specific career for themselves. For the first purpose, it is very successful. The amount of time spent by a broad age range of individuals, across both sexes, serves as an indicator of its success. The number of decisions made by all groups shows a strong involvement with the program. Its appeal is broad and fairly universal.

For the second purpose of career decision-making vehicle, as it is presently structured, the program is not as successful. The self-assessment portion of the program is not being used, possibly because its existence within the program is not noticed by the user. Also, the public does not seem to think of the Hall of Science as a place in which one searches for information of that sort. Since this evaluation was conducted at the very beginning of the exhibition, it is possible that, given time and the continued of this and other career materials, this could change.

If making this a career decision-making center is the direction the Hall of Science wishes to pursue, then the library exhibit seems to be the place favored more by both the older visitors and the more serious younger users who intend to spend more time looking at such materials. The support materials in the library need to be more evident and should be targeted to the older audience using the program there. Better lighting would also help.
In order to increase the number of users in the library, it would be helpful if the floor exhibit could be structured to send the individual who wants more information to the library. This could be done using some type of signage near the floor computers, or a note could be added to the end of each career module in the program, directing the user to the library, where more information is available. Since there are a number of adult users, there could also be signs at the entrance of the Hall of Science directing the interested user to the library.
Graph 2
Use of Floor Computer by Age

Graph 3
Use of Library Computer by Age
Graph 4
Use of Floor Computers by Gender

Graph 5
Use of Library Computers by Gender
Questionnaire for all users:

1. Date ____________
2. Location: Floor____ Library____

3. Session time 11-11:30 _______ 11:30-12 _______ 12-12:30 _______ 12:30-1 _____ 1-1:30____
   1:30-2 _______ 2-2:30 _______ 2:30-3 _______

4. Total time spent at the computer (Set stopwatch) ___________

5. Total number of decisions made (red “button” clicks) __________

6. Sex: M _____ F _____
7. Approximate age of primary operator __________

8. Number of people in the group (a group is defined as an interacting set of individuals where one is the primary operator) __________
9. Is the group a: Family Group ____ Peer Group ____

10. How did the operator use the program?
    Picked up where last user left off? _______ Returned to home and clicked on pictures? _______
    Started with the “self-assessment” portion _______ If so, give number of clicks in that portion _______
    Started with the “information bank” portion _______ If so, give number of clicks in that portion _______

For every fifth person or group:
(If exhibit is so busy that the sixth group is already using the exhibit and you have difficulty doing both
the sixth group and the following questions, these questions take precedence. Just note “busy” on the
sixth questionnaire.)

11. Number of careers “visited” _______

12. Time spent on each career

<table>
<thead>
<tr>
<th>Career</th>
<th>a lot</th>
<th>a little</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinarian</td>
<td>_____</td>
<td>_______</td>
</tr>
<tr>
<td>Forensic Scientist</td>
<td>_____</td>
<td>_______</td>
</tr>
<tr>
<td>Medical Technician</td>
<td>_____</td>
<td>_______</td>
</tr>
<tr>
<td>Rehab Engineer</td>
<td>_____</td>
<td>_______</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Career</th>
<th>a lot</th>
<th>a little</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineer</td>
<td>_____</td>
<td>_______</td>
</tr>
<tr>
<td>Computer Scientist</td>
<td>_____</td>
<td>_______</td>
</tr>
<tr>
<td>Aerospace Engineer</td>
<td>_____</td>
<td>_______</td>
</tr>
<tr>
<td>Ecologist</td>
<td>_____</td>
<td>_______</td>
</tr>
</tbody>
</table>

13. Number of times operator left a career and then returned to it later _______

14. [For library users] Did the individual also use the “Passport to Your Future?” Yes ____ No ______

15. [For library users] Did the individual
   examine any of the pamphlets or books? Yes _____ No _____
   read any of the pamphlets or books? Yes _____ No _____
   take home any of the pamphlets or books? Yes _____ No _____
   request any photocopies? Yes _____ No _____

16. [For everyone] Has the person used the program before? Yes _____ No _____
    If yes, where? Floor exhibit ______ Library exhibit ______

17. [For everyone] Ask “When you came to the Hall of Science today, did you plan to look for career
    information?” Yes _____ No _____

18. [For everyone] Ask “Which career interested you the most? _______

19. [For everyone] Ask “What was the most important thing you learned?” (answer on back)
Appendix D

List of Science Museums and Centers Using SETQuest
Science Museums and Centers Using SETQuest

The New York Hall of Science (Queens)
The Arizona Science Center (Phoenix)
The California Museum of Science and Industry (Los Angeles)
The Miami Science Museum (Miami)

Science Museums and Centers Soon to Install SETQuest

The El Paso Science Museum (El Paso)
The Tech Museum of Innovation (San Jose)
The Columbus Center (Baltimore)
The Field Museum of Natural History (Chicago)
The Smithsonian Museum of American History (Washington)
Appendix E

List of Institutions Involved in the Parent Outreach Science Career Education Program
Parent Outreach Program and Family Library Center Institutions and Locations

Phoenix - Arizona Science Center
Miami - Miami Science Museum
Los Angeles - California Museum of Science & Industry
San Jose - Tech Museum of Innovation
Seattle - Public Library System
Milwaukee - School
Columbus (OH) - School (Pickerington, OH)
Chicago - Rush Presbyterian Hospital
Cleveland (MS) - S.E. Regional Lab
Rio Piedras (PR) - ASPIRA
Philadelphia - ASPIRA
Bridgeport - ASPIRA
Houston - M.A.E.S.
New York City - Job & Career Center
New Orleans - Church/Housing Project
Appendix F

SETQuest Exhibit Floor Background