

## CHAPTER 4

### PRESENTATION & DISCUSSION OF DATA (THE ORACLE)

Three Delphi rounds were used to identify the substantive issues and critical problems with incorporating AT in academic libraries and guidelines addressing these issues were also identified. The Delphi Technique was used with a selected panel of experts who were asked to develop a list of issues, problems and guidelines for providing AT services in academic libraries. To achieve the purposes of this study, the following research questions were addressed:

1. What is the consensus of a panel of AT, library and disability services experts concerning the specific AT issues and problems in academic libraries?
2. What is the consensus of a panel of AT, library and disability services experts about the guidelines that should exist for implementing and evaluating AT in academic libraries?

A summary of the participation of the panel of experts and the results of the three Delphi rounds are included in this chapter.

#### Summary of Participation of the Panel of Experts

An expert panel of 12 postsecondary assistive technologists, academic librarians and disability service providers were selected to identify issues and problems with library special services and to suggest guidelines for addressing these issues. A listserv message was submitted to the following library or disability services listservs: Easy Access to Software & Information (EASI), American Library Association-Special Division (ASCLA) and Disability Services for Students in Higher Education (DISSHE) requesting participation and nominations for potential participants. Three experts were identified

from this listserv query. Other experts were sent individual messages requesting participation in the study. Seven of the individuals who were sent individual notices agreed to participate. One of these individuals nominated two other panelists. These individuals were contacted and also agreed to participate. Seven panelists were academic librarians, four were AT experts and one was a disability services provider.

These 12 experts were asked to identify exhaustively the critical problems and substantive issues involved with providing AT in academic libraries and to develop corresponding guidelines for these issues and problems for the first round. Two of the panelists could not participate in the first round.

Nine panelists participated in the second round. Seven of the panelists who participated in the second round were academic librarians and two were AT experts.

Six panelists participated in the final round. All of these individuals were academic librarians. The analysis of the data for Rounds 2 and 3 is based on the modal responses of those responding to each item.

#### Data Collection

The return rate for Round 1 was 83%, for Round 2, 75 % and 50 % for Round 3. The percentages are based on the original number of panelists. All of the panelists indicated a strong positive interest to participate initially in the study and in knowing the final results. Vacations and professional obligations were the most often cited reasons for not participating in a round. Most responses were delayed for the first round because of vacation plans.

### Findings: The Identification of Guidelines Using the Delphi Technique

Ten experts identified a list of critical problems and substantive issues involved with providing AT in academic libraries and developed corresponding guidelines for these issues and problems for the first round.

#### Delphi I: Data Analysis

Round 1 generated 55 issues and problems and 23 guidelines for AT services in academic libraries. The panelists mentioned relevant issues and problems that were blended into the following categories: equipment and training needs, accessibility issues and funding and marketing problems.

The most frequently suggested guidelines in Round 1 by the panelists were: following an ADA compliance plan; collaborative planning with university AT services; student disability services; establishing a consumer advisory committee with individuals with disabilities; networking guidelines for networking library databases with other campus resources; and guidelines for purchasing electronic materials so they are compatible with AT software.

#### Delphi II: Data Analysis

Data analysis for each of the 55 issues and 23 guidelines are included in the following section. The panelists were all given their own Round 2 responses and the group responses for each item. The categories identified in the first round are shown below with the issues rated most important by the panelists.

#### Equipment

Some of the issues that were regarded as important in the second round included: having the space to house AT; AT maintenance; identifying appropriate AT; the need for

real time print text alternatives; screen reading navigation tools for the on-line card catalog; and incompatibility between AT and library electronic systems.

### Training

Finding AT consultants and trainers, hiring support personnel, institutional support for AT training, and using AT that is user-friendly rated as the most important issues for AT training.

### Funding

The panelists agreed unanimously that funding for AT services was a primary concern in academic libraries. They pinpointed some of the following specific issues and problems related to funding: providing adequate funding for AT, AT personnel, training, upgrades and AT maintenance. Additionally, they suggested the following guidelines for addressing these issues: Line item budgeting, AT personnel and services should be included in the library budget and collaborative planning should occur between departments and with Student Disability Services and establishing both internal and external budget reporting for AT within one department.

### Accessibility

The availability of AT services to students with disabilities, having AT and study tables that are accessible, providing AT in a non-stigmatizing way, clear signage and making sure that individuals are available to help patrons with AT were the key important issues identified in Round 2.

### Marketing

The most important issues with regard to marketing identified by the rating exercise and also with regard to narrative responses were: involving patrons with

disabilities in AT decisions, marketing AT services, and appointing a consumer advisory committee to market AT services.

### Guidelines

The guidelines identified as being the most important for implementing AT services were having an ADA compliance plan, appointing a consumer advisory committee with individuals with disabilities, providing user instruction materials in accessible formats, providing staff sensitivity training and headphones should be available for AT in open areas.

### Delphi III: Data Analysis

Items receiving less than a two-thirds majority rating from the second round were included in the third round in an effort to reach consensus regarding the items that were most important as guidelines for providing quality AT services in academic libraries. Each panel member was instructed to compare personal responses to Round 2 items with group responses. Panelists were told that consensus was the objective of the final round. Panelists were asked to provide reasons for their responses if they chose to maintain their original vote and it was different from that of the group. The mode was calculated for Round 3 to determine if consensus had been reached. The data were analyzed, the findings of the study were tabulated and sent to individual members of the expert panel. An analysis of the Round 3 responses, by category is included in the following section.

### Equipment

The main problems indicated were: identifying appropriate equipment; incompatibility between AT and library electronic systems such as on-line card catalogs; screen reading navigation tools for the card catalog; and real time print captioning.

### Funding

Since consensus was reached in Round 2 regarding funding issues, there were no changes in this category in the final round.

### Training

Inadequate training of AT staff in libraries and inadequate training opportunities for students with disabilities who need to use AT equipment was a paramount concern for members of the Delphi panel. The panel suggested some of the following guidelines for providing training for these individuals: Regularly planned technical and sensitivity training for librarians, AT training accountability should be built in to staff performance evaluations, collaborative agreements should be made with other institutions to share AT knowledge and resources, guidelines should be developed cooperatively between vendors, Student Disability Resource Centers and others participating in AT training.

### Accessibility

Providing AT equipment in the most integrated setting possible during regular library hours was a primary concern in the area of accessibility for the panelists. Specifically, the panelists noted insisting on the availability of AT services, accessibility of study tables and AT stations, book and material retrieval services, access to reserve materials and providing help for patrons in a non-stigmatizing way as being the most important issues. Some of the guidelines suggested by the panelists for providing accessibility included developing an ADA compliance plan, user instruction materials should be accessible in necessary formats, library databases should be networked with other campus resources.

### Marketing

One concern voiced by the experts was that many students are not aware of AT services that are available in the college library or with the process involved with obtaining access to these services. The panelists suggested that campus and library awareness of AT needs and issues should be promoted and that patrons with disabilities should be involved in planning and marketing AT services. The main guideline that the panelists suggested for facilitating marketing AT services was the commitment from the library director. This could include a commitment to provide AT advertisements and appointing a consumer advisory committee as well as planning other AT campus and library awareness strategies.

### Consensus on Disagreement

There were specific issues and guidelines introduced in the first round that panelists did not reach consensus on by the final round including: providing real time print captioning on video materials, accessibility options on all library computers and AT ownership issues.

Using even numbered scale values and modal responses eliminated the possibility for impartial consensus. Mean responses can negate outlier responses. Odd scale values can show a middle-of-the-road effect.

### Summary

This chapter presented the data of three Delphi rounds conducted to identify issues, problems and guidelines for developing and evaluating AT services for academic libraries. The information was analyzed according to the categories within the Round 2 and Round 3 questionnaires. The responses from the separate groups—AT, academic

librarians and disability services providers and the views of the total panel were presented in table form for Round 3 data.

The findings from the data furnished by the Delphi panel were collected, analyzed and presented as part of this study. These findings addressed the research questions presented in this study. Table 2 illustrates the important issues and guidelines that should be included in providing AT services in academic libraries.



## CHAPTER 5

### SUMMARY OF PREDICTIONS

This chapter summarizes the study and the findings. Recommendations are suggested for using the results in academic libraries.

The predictions of this study are based on concurrence with current literature and relevant educational theory. There are several predictions that resulted from this study that are of importance to academic librarians, assistive technologists and disability services providers in planning AT services in academic libraries.

#### Equipment

According to the panel of experts, greater emphasis should be placed on selecting and evaluating AT equipment with the needs of the user being the primary consideration.

#### Funding

The panelists agreed unanimously that funding for AT services was a primary concern in academic libraries. They pinpointed some of the following specific issues and problems related to funding: providing adequate funding for AT, AT personnel, training, upgrades and AT maintenance. Additionally, they suggested the following guidelines for addressing these issues: Line item budgeting, AT personnel and services should be included in the library budget, collaborative planning should occur between departments and with Student Disability Services, and establishing both internal and external budget reporting for AT within one department.

#### Training

Inadequate training of AT staff in libraries and inadequate training opportunities for students with disabilities who need to use AT equipment was a paramount concern for

members of the Delphi panel. The panel suggested some of the following guidelines for providing training for these individuals: Regularly planned technical and sensitivity training for librarians, AT training accountability should be built in to staff performance evaluations, collaborative agreements should be made with other institutions to share AT knowledge and resources, guidelines should be developed cooperatively between vendors, Student Disability Resource Centers and others participating in AT training.

#### Accessibility

Providing AT equipment in the most integrated setting as possible during regular library hours was a primary concern in the area of accessibility for the panelists. Specifically, the panelists noted insisting on the availability of AT services, accessibility of study tables and AT stations, book and material retrieval services, access to reserve materials and providing help for patrons in a non-stigmatizing way as being the most important issues. Some of the following guidelines were suggested by the panelists for accessibility: Developing an ADA compliance plan, designing user instruction materials in accessible formats, networking library databases with other campus resources.

#### Marketing

One concern voiced by the experts was that many students are not aware of AT services that are available in the college library or with the process involved with obtaining access to these services. The panelists suggested that campus and library awareness of AT needs and issues should be promoted and that patrons with disabilities should be involved in planning and marketing AT services. The main guideline that the panelists suggested for facilitating marketing AT services was the commitment from the library director. This could include a commitment to provide AT advertisements and

appointing a consumer advisory committee as well as planning other AT campus and library awareness strategies.

### Implications

This study implies that experts can form an extensive, purposeful set of guidelines for addressing pertinent issues and problems relative to AT in academic libraries.

Additionally, the Delphi Technique used in this study shows that these experts were able to reach consensus on the importance of issues and suggested guidelines without utilizing traditional face-to-face meetings. The lengthy responses submitted by some of the panelists indicate a thorough problem solving approach that would not ordinarily be an option in face-to-face meetings where individuals are concerned with time constraints.

The following specific implications are given:

1. From 12 individuals, consensus was reached about specific issues and problems involved with providing AT services in academic libraries.
2. A set of guidelines was developed through a process that accommodated separate responses and agreement as well as disagreement. This process concluded when consensus was reached at both ends of the important/unimportant continuum.
3. Continuing research using the Delphi Method can be useful in this area when combined with current literature.
4. The Delphi Method may be useful for verifying future goals and anticipated services in academic libraries.
5. The Delphi Method may also be useful as part of an annual review process related to AT by campus groups or by national group of experts.

Other implications relate to the evaluation of the responses of the Delphi panel in comparison to existing AT studies and to current literature. The match or mismatch between innovative suggestions and current practice are important to this study.

There were 23 issues and problems identified as important by the panelists in this study. Additionally, there were 13 guidelines suggested by the panel. These are identified in Round 3. The strength of this pool of knowledge coupled with the verification of this information in current literature has strong implications for the practicality of this approach.

#### Comparison of Delphi Findings with Current Literature

The intent of this section is to discuss the results of this study as they relate to the current literature on special library services. The ATA emphasizes the functional capabilities of individuals with disabilities and underscores the importance of treating each application of AT as a unique circumstance. Deines-Jones & Van Fleet (1995) recommend maintaining a person first attitude when addressing individuals with disabilities. One of the findings of this study was the insistence on involving individuals in planning for AT services and incorporating a more individualized approach for AT services in academic libraries.

Cook & Hussey (1995) indicate that there has been a lack of carefully articulated principles and practices in the emerging AT field. Similarly, this study indicates that there has been a lack of carefully articulated guidelines for providing AT services in academic libraries.

Isaac & Michael (1997) discuss the need for research and evaluation in education in order to make rational choices, to validate educational improvements and to build a

stable foundation of effective practice as a safeguard against faddish but inferior innovations. Weingand (1997) describes the importance of planning for crisis in proactive library management. The panelists indicated that proper planning and regular evaluations were essential in providing relevant AT services in academic libraries.

McGuire (1997) stated that little research is available to demonstrate a scientific basis for establishing that specific accommodations are effective. The essential areas that practitioners indicate for quality special services library programs for students with print disabilities in the literature include: accessibility to the automated on-line catalog, book retrieval assistance, adaptive technology accommodations, photocopying and reference assistance and private study areas (Lenn, 1996; Mendle, 1995; Michael, 1988; Weingand, 1990). These categories were also identified by the expert panelists as being necessary for students with print disabilities.

### Equipment

Current literature and the panel of experts were in agreement that students with print disabilities should be provided with certain basic AT equipment. Weingand (1990) and Lenn (1996) indicate that computers for word processing, individual study carrels, optical character recognition and scanning devices, speech synthesis equipment for all automated reference databases, enlarging software, closed circuit televisions, speech input, assistive reading and writing software should be among the basic items provided in an academic library setting for individuals with disabilities. The panelists recommended these same items.

### Funding

The literature substantiates the need for adequate funding for AT. Berliss (1992) recommended that 10% of the library computer resources budget should be allocated for AT since about 10% of the students have disabilities. The panelists agreed that administrators should provide adequate funding for AT. There was some concern among the panelists concerning equity issues with regard to spending funds for AT from the general library budget or the computer budget for AT needs.

### Training

Training for AT staff and individuals with disabilities who will be using the equipment is one of the primary needs expressed in current literature. Weingand (1997) stresses that librarians with the best service orientation will find it problematic to provide a high level of service if the operating environment does not encourage and empower the staff to provide this level of service.

Switzer (1994) stresses the importance of library staff becoming aware of disability issues. Deines-Jones & Van Fleet (1995) mention the necessity for librarians at all reference point being aware of AT that are available for students with disabilities and being trained to use this equipment. Several of the panelists mentioned that all librarians and library staff should be familiar with the AT. They all agreed that someone should be in charge of this service. However, they mentioned concerns such as: What happens when one person is trained to assist student with AT and that person quits or retires? And What if only one person knows the AT and that person is not available when the student needs them?

### Accessibility

Current literature and recent legislation such as the ATA and the ADA suggest and mandate the need for AT accessibility in the most integrated setting for students with disabilities. Seelman (1999) noted a new paradigm emphasis on the individual and the environment. The panel listed a number of concerns regarding the lack of accessibility of AT for students in academic libraries. Some of these included the availability of AT services to students with disabilities, accessibility of library furnishings and that accessibility should be achieved in a non-stigmatizing way.

### Marketing

The literature substantiates the need for marketing AT services so that students with disabilities are aware that these services are available. Karp (1991) identified some of the universal needs of students with print disabilities as being directional assistance, orientation to the building, identifying staff and service points. Weingand (1998) indicated the need to market library services. One of the categories that the panelists identified was marketing library services for students with disabilities through campus newspapers, posters and library handouts.

### Predictions

The purpose of this study was to identify substantive issues and critical problems with providing AT services in academic libraries and to suggest guidelines for dealing with these issues and problems. The following predictions were supported by the data collected and analyzed in this study.

1. Proper maintenance of AT is necessary for planning successful AT services for students with disabilities.

2. Identifying appropriate AT for individuals with disabilities is a skill that involves the collective input of AT experts, librarians and students with disabilities who will be using the equipment.
3. All electronic systems accessible to the general public should be accessible to individuals with disabilities in a non-stigmatizing way.
4. There is a growing need for AT consultants and trainers who can advise and assist academic librarians in selecting AT and providing methods for best practice regarding special services issues.
5. AT should be user-friendly and easy to trouble-shoot for continued use by students and librarians.
6. Institutional support should be provided for student, faculty and staff AT training.
7. All library materials and reference desks should be accessible to individuals with disabilities.
8. Adequate funding for AT, AT personnel, training, upgrades and maintenance are necessary for supporting a quality AT program.
9. A consumer advisory committee comprised of students, faculty and staff and other interested individuals should be appointed to promote AT needs, issues and services in an academic library setting.
10. All libraries are required under the ADA to develop an ADA compliance plan. Many libraries still do not have such a plan. Formulating the policies and procedures for addressing ADA guidelines is a helpful first step for providing quality AT services.



11. Commitment from the library director is essential for planning and marketing AT services.
12. Collaborative agreements between the library, assistive technologists, services for students with disabilities, computer resources and other related departments are useful when developing guidelines and for providing services in the most efficient manner.

### Summary

This study points to difficulties in planning for adequate funding for AT services and training for library staff and for AT training for students with disabilities. Increased institutional financial support, training efforts and promotional support by librarians and other interested individuals especially students with disabilities should provide the impetus for change and improvement in these areas.

The following observations were made concerning the Delphi Technique during the course of this study:

1. A total of 12 experts participated in the study. An 83% rate of return was achieved in the initial round. A 83% return rate was achieved in the second round and the final round included responses from 50% of the panelists. This percentage drop is typical in Delphi studies but is not substantial considering the small number of panelists who participated. The initial Delphi probe question was distributed on June 18, 1999. Some panelists were nominated or invited to participate after this date. The panelists were asked to return the first round responses by July 15, 1999. 10 questionnaires were received by that date. Two individuals indicated that they could not respond to the first

round due to vacation plans or professional obligations. The second round responses were distributed on July 17, 1999. Panelists were asked to rate the items on the second round and to return these by July 19, 1999. The final list was distributed on August 2, 1999 and panelists were asked to return these responses by August 6, 1999.

2. The first round responses required the most time and effort on the part of the panelists because they involved originating ideas on the topics to be addressed. For this reason, there was a longer turn around time for the first questionnaire and more question and answer dialogue concerning the intent of the survey and its potential uses. Subsequent rounds went much more smoothly as panelists were only expected to rate the items that had been generated in the first round.
3. Most Delphi studies are conducted in top-down management situations such as the military, medical facilities and factories. The Delphi Technique is generally most effective when used by the people who will be in a position to implement policy as indicated by Turoff & Hiltz (1996). The panelists in this study were support services personnel (assistive technologists, librarians and disability services). While the guidelines that were developed may have some practical applications for policy formation and may serve to empower these groups with current information, they will be somewhat limited in scope by the administrative frameworks within their individual institutions.
4. A core group maintained a high interest level throughout the process.
5. Several respondents made additional comments on each round.

6. The trends identified as highest priority by the panelists were consistent with the literature.
7. The panel of experts deemed the lack of appropriate funding, training and marketing to be the most significant issues and suggested numerous guidelines that addressed these issues.

#### Recommendations for Further Study

Creswell (1995) noted that mature research had potential for replication and further investigation. The purpose of this study was to explore the need for and use of AT by patrons with print disabilities in academic libraries. The Delphi Technique was used to determine the issues and problems associated with using AT in academic libraries. The Delphi panelists also suggested guidelines for providing AT services in academic libraries. The results indicate a strong potential for using the Delphi Technique for gathering information from experts on AT issues.

This study points to the need for further research in the following areas:

1. Institutional research on individual campuses and national collaborative campus AT studies.
2. Scenario based studies using the Delphi Technique for a larger national sample of academic librarians.
3. Expert long interviews with AT, disability services and library experts on the needs and uses of AT in academic libraries.
4. Systematic evaluation of AT services on individual campuses and nationwide.
5. Additional replication studies using another panel of experts or a larger panel of experts would be useful for verifying the results of this study.

6. A Delphi study designed to forecast long range AT planning for an institution or for a certain type of institutions (i.e., Research I institutions).
7. A replication Delphi study using non-experts, specifically students with disabilities who are using AT in an academic library setting.