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ABSTRACT OF DISSERTATION

Kristina M. Krampe

The Graduate School
University of Kentucky
2002

THE FORMATIVE EVALUATION OF A WEB-BASED PERFORMANCE
SUPPORT SYSTEM DESIGNED TO IMPROVE ACCOMMODATION OF
STUDENTS WITH DISABILITIES IN POSTSECONDARY EDUCATION

ABSTRACT OF DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree
of Doctor of Education in the College of Education at the University of Kentucky

By

Kristina M. Krampe

Lexington, Kentucky

Co-Directors: Dr. William H. Berdine, Professor of Special Education

and Dr. A. Edward Blackhurst, Professor Emeritus of Special Education

Lexington, Kentucky

2002

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ABSTRACT OF DISSERTATION

THE FORMATIVE EVALUATION OF A WEB-BASED PERFORMANCE SUPPORT SYSTEM DESIGNED TO IMPROVE ACCOMMODATION OF STUDENTS WITH DISABILITIES IN POSTSECONDARY EDUCATION

The numbers of students with disabilities enrolling in postsecondary institutions has increased since the passage of key disability rights legislation. As a result, the need for information about accommodating postsecondary students with disabilities has increased in the last two decades, especially since the passage of the Higher Education Amendments of 1998. This study used Dick and Carey's (1996) model of instructional design to conduct a formative evaluation of a Web-based performance support system (WPSS) designed for academic administrators, instructional employees, and auxiliary service administrators to enhance accommodations for postsecondary students with disabilities. Formative evaluation consisted of expert review, one-to-one, consumer analysis, and field trial phases.

During the expert review phase, subject matter experts, instructional design and usability experts, and individuals with disabilities completed surveys to assess the degree to which the WPSS contained current content, included elements of effective design, and was accessible to individuals with disabilities. During the one-to-one, consumer analysis, and field trial phases, academic administrators, instructional personnel, and auxiliary service administrators on the University of Kentucky campus completed a questionnaire using the WPSS to assess the degree to which the WPSS

was effective in providing information. In addition, users completed a survey to assess their perceptions of the WPSS. Finally, data were collected to assess difficulties encountered by users.

Results from the expert review phase of the evaluation suggest that the WPSS contained current content, included elements of effective design, and was accessible to individuals with disabilities. Analysis of the questionnaire scores from all phases revealed that users obtained a mean accuracy rate of 74% or higher on the in-session questionnaire. In addition, all users required a mean of 3.9 minutes or less per question to locate responses for items on the questionnaire. The perceptions of all users about the WPSS were positive. Results also indicated that users reported a variety of technical difficulties; however, the majority were related to server errors. Revisions made to the WPSS after each phase of evaluation are described. Implications of the investigation for researchers and Web developers, limitations of the investigation, and areas for future research also are discussed.

KEYWORDS: Disability, Accommodation, Web-based Performance Support System, Formative Evaluation, Postsecondary Education

Kristina M. Krampe
March 28, 2002

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DISABILITIES IN POSTSECONDARY EDUCATION

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DISSERTATION

Kristina M. Krampe

The Graduate School
University of Kentucky
2002

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Chapter I

Introduction

The numbers of students with disabilities enrolling in postsecondary institutions has increased since the passage of key legislation such as Section 504 of the Rehabilitation Act of 1973 (Public Law 93-112), the Americans with Disabilities Act (Public Law 101-336), and the Individuals with Disabilities Act (Public Law 101-476). In a national survey funded by the U.S. Department of Education, it was reported that approximately 428,280 students with disabilities were enrolled in about 72% of the nation's postsecondary education institutions in 1996-97 or 1997-98 (Lewis, Westat, & Greene, 1999). In another national survey funded by the American Council on Education, it was reported that more than 9% of college freshmen (more than 140,000 students) report having a disability in 1998 (Henderson, 1999). The percentage of freshmen that reported having a disability tripled between 1978 and 1998, increasing from 3% to 9%.

While the number of students with disabilities enrolling in postsecondary education institutions has increased, they are still less likely to attain a degree or persist in their postsecondary program than their peers without disabilities. In a longitudinal study funded by the U.S. Department of Education, researchers found that only 53% of students with disabilities persisted in their program or attained a degree as compared with 64% of students without disabilities who had done so (Office of Educational Research and Improvement, 2000).

Statement of Problem

In 1998, Congress recognized the importance of providing technical assistance and professional development activities for faculty and administrators in institutions of higher education to improve their ability to provide a quality postsecondary education for students with disabilities. In Section 741 of the Higher Education Amendments of 1998 (Public Law 105-244), funding was provided for the improvement of postsecondary education. Special notation was made about encouraging the provision of equal educational opportunity for all. As a result, the Demonstration Projects to Ensure Students with Disabilities Receive a Quality Higher Education Program was created by

the U.S. Department of Education's Office of Postsecondary Education.

In 1999, 21 demonstration projects were funded under this grant program. Grantees were required to develop innovative, effective, and efficient teaching methods and other strategies to enhance the skills and abilities of postsecondary faculty and administrators to work with students who have disabilities. Under this grant initiative, the Office of Postsecondary Education funded the University of Kentucky Engaging Differences project (UK-ED) as a demonstration project in September 1999. The intent of the UK-ED project was to develop, evaluate, and disseminate a Web-based performance support system (WPSS) designed for academic administrators (i.e., chancellors, deans, departmental chairs), instructional employees (i.e., faculty and teaching assistants), and auxiliary service administrators (i.e., housing, recreation, transportation, food services) to enhance the accommodations provided to postsecondary students with disabilities.

This investigation had two purposes. The first was to develop the WPSS for the UK-ED project. The second purpose was to conduct a formative evaluation of the WPSS in order to determine needed revisions prior to posting the site on the Web. The remainder of this chapter provides a review of the research literature related to this investigation followed by the research questions that were explored.

Review of Literature

Following is a review of the literature in three areas. The first section provides a review of the importance of accommodating students with disabilities in postsecondary settings. The second section presents an on-line system for providing performance support. The final section presents a model for conducting formative evaluation of instruction.

Importance of Accommodating Students with Disabilities in Postsecondary Settings

As a means to obtain information about current knowledge levels on various disability issues, the UK-ED project developed and distributed a web-based survey to University of Kentucky (UK) and Lexington Community College (LCC) employees during the Spring semester of 2000 (Sheppard-Jones, Krampe, Danner, & Berdine, 2002). The survey instrument went through several phases of development before being

distributed. Issues of mode of administration (e-mail delivery), item content (length, appropriate language usage and understandability), and recruitment of participants all played a role in the survey development. Content was developed and approved by experts in the fields of adult learning, disability research and instructional design.

Three versions of the survey were created with questions related to the job duties of administrators, instructional staff, and auxiliary service personnel. Each of the three survey versions contained a common core of questions regarding knowledge of specific disability issues and services. Respondents were asked to self-rate their understanding level of eight general disability areas: (a) the Americans with Disabilities Act (ADA), (b) the University Disability Resource Center, (c) services for students with disabilities, (d) appropriate etiquette when interacting with persons with disabilities, (e) providing instructional accommodations, (f) services and strategies for students with learning disabilities, (g) computer accessibility, and (h) other. Participants were then asked to rank the above areas by importance. In addition, specific services were listed, and individuals were asked if they were aware of how to access the service. Other survey items included questions regarding physical accessibility of the staff person's building and personal associations with individuals with disabilities. A final section included scenarios that were relevant to the above three job categories. Respondents were requested to select the most appropriate response to the situation presented.

Campus e-mail lists were utilized to reach all registered University e-mail users and flyers were sent to those who did not have registered e-mail addresses. Among the 18,754 participants who were sent an e-mail or flyer, 2,130 individuals submitted a survey for a return rate of 11%. The top three areas of need identified by respondents typically corresponded with their job responsibilities. Administrators were most interested in the legal implications of the Americans with Disabilities Act as it relates to postsecondary institutions, while instructional staff were more focused on day-to-day issues such as instructional accommodations and learning disabilities. Since the auxiliary support services category represented a large number and wide range of job duties, the need for knowledge within this group of individuals also was diverse. Auxiliary service staff showed interest in specific resources and the legal implications of the ADA as well as a desire to use appropriate etiquette when they are in daily contact

with students.

While the responses were classified according to the job category of the individual, common threads were seen across the groups. A repeated need was identified for specific, timely information on an as-needed basis. There was also a need for greater understanding of available campus resources. Open-ended comments consistently stated that any additional information in the area of disability issues would be welcome. Other areas that were frequently seen included transportation and parking, hiring students with disabilities, technologies available in the University library, and physical campus accessibility.

A corollary study, using qualitative methodologies, also was conducted by the UK-ED project with UK employees and students with disabilities during the Spring semester of 2000 (Jensen, McCrary, Krampe, & Sheppard-Jones, 2000). Fifty-two individuals, included academic administrators, auxiliary service administrators, instructors, and students with disabilities, participated through e-mail, individual, and small group interviews. Participants were asked about memorable experiences, their understanding of the term disability, information required to accommodate students with disabilities in postsecondary education settings, and questions they had or had been asked about accommodation.

Most of the instructors in the study indicated that they wanted to meet their responsibilities as teachers, but were unclear as to what “reasonable accommodation” means in the college classroom. Importantly, when discussing physical disabilities, there was generally little debate over the need for accommodations. When discussing learning disabilities, however, comments by, and about, faculty reflected a mistrust of how learning disabilities are assessed and how far faculty should be expected to go to accommodate such students. Some instructors questioned whether providing accommodations for students with disabilities may, in some ways, mean providing remediation as well.

Comments by, and about, campus administration indicated that a great need for structural change was required. Generally, attitudes about students with disabilities were positive, but numerous sources indicated that there is a lack of institutional mechanisms for sharing resources and information. For example, most of the

participants in the study believed that there was a written policy regarding students with disabilities, but were unsure or unaware of institutional procedures or regulations. In addition to ambiguity about policy guidelines, participants expressed that the lack of a campus-wide policy regarding students with disabilities negatively affected the campus climate.

Overall, the strongest sentiment expressed by the groups that were interviewed had to do with the need for better training and more consistent application of accommodations. Concern was shown especially for new teaching assistants who, in addition to having little experience teaching at the college level, would have no way of knowing how to interpret and meet requests for accommodation. Alternatively, while faculty were seen as having had more teaching experience by participants, their methods for accommodating students with disabilities were described as the result of trial and error.

Summary. A Web-based survey was completed by UK and LCC employees during the Spring semester of 2000. In addition, a corollary study, using qualitative methodologies, was also conducted by the UK-ED project with UK employees and students with disabilities during the Spring semester of 2000. Based on data from these studies, three needs were identified. First, there is a need for specific, timely information on an as-needed basis. Second, there is a need for greater understanding of available campus resources. Finally, there is a need for better training and more consistent application of accommodations on the Uk campus.

On-line System for Providing Performance Support

To enhance worker performance, one must enter the performance zone. The performance zone is the where an individual gets exactly the right information required to perform the required task (Gery, 1991; Dickelman, 1996). [Figure 1](#) illustrates the performance zone for postsecondary personnel who accommodate students with disabilities.

With the rapid development of technology and the increasing complexity of the workplace, reaching the performance zone has become increasingly difficult (Dickelman, 1995; Gery, 1991; Laffey, 1995). The electronic performance support system (EPSS) has been suggested as a solution to this dilemma. In this section, the

definition, components, characteristics and attributes of an EPSS, as well as its use within educational environments will be discussed.

Definition of an EPSS. The term EPSS is widely used; however, since this concept is in its infancy, there is little agreement about its definition (Cole, Fischer, & Saltzman, 1997; Desmarais, Leclair, Fiset, & Talbi, 1997; Gery, 1995). The term was first used in 1989 by Gloria Gery, an instructional designer, when working on a strategy for delivering electronic training to employees of AT&T (American Telephone and Telegraph). Gery (1991) defined an EPSS as the use of technology to provide on-demand access to integrated information, guidance, advice, assistance, training, and tools to enable high-level job performance with minimum support from other people. According to Raybould (1995), an EPSS is "the electronic infrastructure that captures, stores and distributes individual and corporate knowledge assets throughout an organization, to enable individuals to achieve required levels of performance in the fastest possible time and with a minimum of support from other people" (p. 11).

Providing a more detailed definition, Stevens and Stevens (1996) described an EPSS as a computer application that can provide on-demand, task-specific skills training; task-specific information access; expert advice needed to solve difficult or non-routine work problems; customized tools for job task automation; and embedded coaching, help, and validation tools, which together can improve human performance in the workplace by improving productivity, quality, and customer service. According to Sherry and Wilson (1996), EPSSs are storehouses of just-in-time, just-in-place information to solve performance problems through the appropriate use of designed messages, tools, and human support. This definition stresses the inclusion of human support, in addition to the computer application, to ensure that the complex needs of people are met without placing an undue burden on any one component.

Regardless of the specific definition of an EPSS, the goal of such a system is the same: to support and enhance performance by providing the knowledge required by a task at the time the user is performing it (Cole, et. al, 1997; Desmarais, et. al, 1997; Laffey, 1995; Shepherd, 1997).

Components of an EPSS. Because an EPSS represents a range of strategies and solutions tailored to fit the individual knowledge requirements of a particular job

situation, there is no consensus on the components of an EPSS (Desmarais, et. al, 1997; Gery, 1995; Laffey, 1995; Marion, 1998). Based on Gery's model of an EPSS, there are three components of an EPSS. First, an EPSS contains an infobase of layered information to respond to user questions or requests (1991). This infobase may include text, graphic, audio, or video files. In addition to the infobase, an EPSS contains a support system to assist the user in performing a task. The support system may include advisory or expert systems, interactive productivity or application softwares, help systems, interactive training sequences, assessment systems, or monitoring and feedback systems. Finally, an EPSS has a user interface which provides user-defined access to the EPSS and integration of the components in a clear, consistent, and meaningful way.

Carr (1992) described four basic components of an EPSS: (a) an advisor to provide advice on how to perform a task, (b) an assistant to provide access to tools and on-line help to perform the task, (c) a librarian to provide access to reference and information databases, and (d) a teacher to provide task-specific skills training. According to Desrosiers and Harmon (1996), most EPSSs consist of four components: (a) an advisory component to provide help when needed, (b) an information component to provide all of the information required to do the job, (c) a training component to provide on-demand training, and (d) the user interface component to allow seamless navigation from component to component within the EPSS.

Based on a review of the literature, Remmers (1998) described four typical components of an EPSS: (a) task- and situation-specific information designed to meet the unique demands of the work environment, (b) customized tools or job aids designed to provide automation of selected work activities, (c) training resources designed to provide small units of task-oriented training, and (d) expert advice designed to allow consultation with knowledgeable individuals about specific tasks or situations.

The specific components included in the development of an EPSS are not important as long as they provide timely information, useful advice, and relevant training to the work environment (Laffey, 1995). Rather than focusing on the inclusion of specific components, an emphasis should be placed on designing an EPSS that makes the user competent in the work environment, fits together as a system, provides integrated

information that is contextually relevant, facilitates collaboration among workers, and is designed to grow with technological advances.

Characteristics of an EPSS. While an EPSS is not comprised of specific components, it is likely that most EPSSs will display characteristics that make them different from other computer-based instruction or tools (Sleight, 1993a; Sleight, 1993b). EPSSs are computer-based, used on the job, and are controlled by the user. They provide access to the just-in-time, just-enough information needed to perform a task and thus reduce the need for prior training. EPSSs are easily updated, provide fast access to information, and include only relevant information. They allow for different levels of knowledge for users depending on their interests and needs. Finally, EPSSs integrate information, advice, and learning experiences for the user.

Gery (1995) described three types of performance support: (a) intrinsic, (b) extrinsic, and (c) external. Intrinsic support is integrated into the interface of the system in such a manner that the user cannot differentiate it from the system. Extrinsic support is integrated into the interface of the system, but must be invoked by the user or can be turned off by the user when presented. External support is not integrated into the system and therefore must be consciously integrated into the system by the user. The goal for an EPSS is to include 80% intrinsic support with 10% extrinsic support and 10% external support (Gery, 1995).

Based on her observation of effective EPSSs, Gery (1995) developed a list of 19 key attributes and behaviors to guide development. The first four attributes reflect task sequencing: (1) establish and maintain a work context; (2) aid goal establishment; (3) structure work process and progression through tasks and logic; and (4) institutionalize business strategy and best approach. The focus of these attributes is on creating intrinsic support by developing a task-centered environment so a specific performance objective can be achieved. Attributes 5-8 describe items that are displayed to the user: (5) contain embedded knowledge in the interface, support resources, and system logic; (6) use metaphors, language, and direct manipulation of variables to capitalize on prior learning and physical reality; (7) reflect natural work situations; and (8) provide alternative views of the application interface and resources. The focus of these attributes is on accommodating diversity in knowledge, skills, learning styles, and

preferred ways of interacting among users. Attributes 9-12 describe what is presented as a function of user or system actions: (9) observe and advise; (10) show evidence of work progression; (11) provide contextual feedback; and (12) provide support resources without breaking the task context. The outcome of these attributes is providing information about the consequences of actions while maintaining user orientation to the situation. Attributes 13-18 describe system functionality as well as what appears in the interface: (13) provide layers to accommodate performer diversity; (14) provide access to underlying logic; (15) automate tasks; (16) provide alternative knowledge search and navigation mechanisms; (17) allow customization; and (18) provide obvious options, next steps, and resources. The focus of these attributes is on accommodating a broad range of performer goals, interests, competence, or time available. The last attribute represents consistency and conformance to standards: (19) employ consistent use of visual conventions, language, visual positioning, navigation, and other system behavior. Its emphasis is on creating a consistent look, feel, and behavior to the EPSS.

Performance Support Systems in Educational Environments. While EPSSs have provided valuable solutions to many performance problems in business and industry during the last decade (Gery, 1995; Laffey, 1995), their use in educational environments has been a more recent development (Bannan-Ritland, Egerton, Page, & Behrmann, 2000; Carr & Carr, 2000; Dunlap, n.d.; Kirkley & Duffy, 1997; Northrup, Pilcher, & Rasmussen; 1998; TREE, 1998). As a result, there is little or no empirical research related to their use for performance support (Desrosiers & Harmon, 1996; Gery, 1995; Laffey, 1995; Remmers, 1998).

Because the performance required of education personnel is less structured than that of workers in industry, an EPSS for this environment is more focused on knowledge sharing rather than performance of specific tasks (Lawton, 1999; Sleight, 1992). In this environment, an EPSS serves as “cognitive training wheels” providing the user with access to relevant information (Law, 1994). This type of EPSS should focus on two questions: (a) Does it help the user identify and locate necessary information? and (b) Does it increase the speed of knowledge retrieval? (Lawton, 1999).

The Web, with its vast collection of networked information and resources as well as communication possibilities, provides a foundation for building educational EPSSs

(Kirkley & Duffy, 1997). The following section briefly describes Web-based performance support systems (WPSSs) designed for use in educational environments.

The Web Resource Collaboration Center (WRCC) is a Web-based tool which allows users to create an individualized WPSS to support their learning, professional development, and performance (Dunlap, n.d.). The WRCC provides users with immediate support, but also allows them to develop strategies and skills for lifelong learning. The WRCC contains three areas: (a) the Discussion Forum for mentoring and coaching activities; (b) the Link Manager to categorize and critique on-line resources; and (c) the Resource Construction System to create collaborative and individual on-line resources.

Literacy Online is a WPSS developed to support literacy teachers and their students (Kirkley & Duffy, 1997). This WPSS was designed for providers of four types of literacy: (a) adult literacy, (b) English as a Second Language, (c) family literacy, and (d) workplace literacy. Each section contains information on teaching strategies and issues via case studies, Web resources, discussion groups, and learning activities and lesson plans to demonstrate certain strategies.

In the state of Florida, two WPSSs have been developed to assist teachers in instructional planning. TREE (1998) is a WPSS designed to help instructional staff who work with students in special education. It supports teachers by helping them: (a) organize instruction; (b) record student progress; (c) create and schedule lesson plans; (d) communicate with parents, students, as well as school and district staff; (e) access technical assistance, references, and expert advice; (f) prepare Individual Education Plans (IEPs); and (g) complete forms most frequently used.

Northrup, Pilcher, and Rasmussen (1998) describe Support for Teachers Enhancing Performance in Schools (STEPS), which is a WPSS designed to assist educators in following guidelines and standards for school reform and accountability in the state of Florida. STEPS includes eight major components to assist educators in planning: (a) the Lesson Architect which includes a model to guide instructional planning; (b) the Best Practices Database which is a searchable infobase of ideas; (c) model units to serve as examples of how to plan instructional units; (d) instructional Web links; (e) the Tutorial Library which contains 10-15 minute overviews of specific

concepts related to instructional planning; (f) Florida's Sunshine State Standards; (g) links to other planning tools; and (h) a series of scaffolds for assistance and guidance that are embedded throughout all of the other components.

Instructional Design in Distance Education (IDDE) is a WPSS designed to help users design effective distance education lessons (Carr & Carr, 2000). The IDDE allows users to: (a) view instructional strategies relevant to specific instructional theories and (b) search or browse a database of instructional strategies and related examples. Users also may add their own examples of how instructional strategies were incorporated into distance education courses.

Graduate students at George Mason University used a performance-centered design to create a prototype of the Literacy Explorer, a WPSS included as part of a software tool for novice literacy facilitators (Bannan-Ritland, et. al, 2000). The Literacy Explorer offers facilitators: (a) cues and icons to guide the use of specific reading strategies; (b) a job aid that provides icons, prompts, and comprehension questions; (c) a session planner sheet to record difficult words, helpful strategies, and additional notes; and (d) activities along with online forms and worksheets targeted to improve specific skills. When complete, the WPSS also will allow for tracking student progress, communicating with other facilitators, importing additional text for use in the WPSS, and assessing reading levels.

Summary. The goal of an EPSS is to support and enhance performance by providing the knowledge required by a task at the time the user is performing it (Cole, et. al, 1997; Desmarais, et. al, 1997; Laffey, 1995; Shepherd, 1997). It should be designed in such a manner that the EPSS makes the user competent in the work environment, fits together as a system, provides integrated information that is contextually relevant, facilitates collaboration among workers, and is able to grow with technological advances. EPSSs have provided valuable solutions to many performance problems in business and industry during the last decade (Gery, 1995; Laffey, 1995), but there is little or no empirical research about its use. The Web has been used recently to build educational EPSSs (Bannan-Ritland, et. al, 2000; Carr & Carr, 2000; Dunlap, n.d.; Kirkley & Duffy, 1997; Northrup, et. al, 1998; TREE, 1998). While WPSSs in educational environments have been described, there is no empirical research about

their use in such environments.

Model for Conducting Formative Evaluation

With the advent of large curriculum development products in the 1960s, the need for formative evaluation to increase the likelihood that instructional materials result in high levels of learner achievement was intensified. Prior to this, the only evaluation conducted on instructional products was to determine their effectiveness in comparison with other existing products. While the need for formative evaluation and its potential impact has been demonstrated, thousands of instructional products are distributed each year without evaluation by users or revision during the design stage (Dick & Carey, 1996). With the fast-paced, and often complex, design process of Web-based materials, the need for formative evaluation is even greater, but is still sadly lacking.

Dick and Carey (1996) described a systems approach to the design and development of instructional products (See [Figure 2](#)). Within this model are two forms of evaluation: (a) formative evaluation and (b) summative evaluation. Formative evaluation is conducted at the early stages of the design process to gather information from users in order to revise the materials before proceeding in the design process. Summative evaluation is conducted at the end of the design process to determine the effectiveness of the product.

In Dick and Carey's (1996) model, there are three phases of formative evaluation: (a) one-to-one, (b) small-group, and (c) field trial. The three phases, however, are typically preceded by an expert review phase. The following sections briefly describe each phase of formative evaluation in addition to the expert review phase that precedes the three formative phases.

Expert review phase. While the emphasis of formative evaluation is on the acquisition of knowledge by the users, it is also crucial to have the materials reviewed by experts. The expert review phase should include review by both subject matter experts and specialists in the type of learning outcome involved. Subject matter experts consider the accuracy and currency of the content included in the instructional materials. Instructional design experts consider whether the instructional strategy can be enhanced. Checklists and interviews are typically suggested as data collection methods for conducting expert reviews.

One-to-one phase. The one-to-one or clinical evaluation phase of formative evaluation involves implementation of the instructional materials with three or more users who are representative of the targeted population. The one-to-one evaluation examines the viability of the instructional materials from the users' perspective.

Evaluation of the instructional materials during the one-to-one phase focuses on three main criteria: (a) its clarity, (b) its impact on users, and (c) its feasibility. The process is interactive in nature with the evaluator and user discussing the materials as the user works through the instructional materials and completes the evaluation instruments. The evaluator takes notes about difficulties encountered by the user and suggestions for revision as part of the process. Other data generally collected during this phase include user responses on evaluation instruments, the length of time required by the user to complete instruction, and user perspectives about the instructional materials.

Small-group phase. The small-group phase of formative evaluation involves implementation of the instructional materials with between eight and 20 users who are representative of the targeted population in a setting similar to the location where materials will be used in the future. The purpose of the small-group evaluation is to determine whether revisions made as a result of analysis of data from the one-to-one evaluation phase are effective, to identify any remaining problems that exist in the instructional materials, and to determine whether users can use the materials without technical assistance. The term small-group is used to refer to the number of users involved in the evaluation phase not the setting in which the users interact with the materials. If the materials are intended for use at home or at the workplace, then the small-group evaluation is conducted with individual users in their home or workplace in a form similar to its intended use. Otherwise, the small-group evaluation is conducted in a small group session in a manner similar to its intended use.

The procedures used in a small-group evaluation differ from those used in a one-to-one evaluation. Unlike a one-to-one session, interaction between the evaluator and the user is limited during a small-group session. The evaluator only interacts with the user as required by the instructional materials or to provide assistance at the user's

request. Data collected during the small-group phase includes user achievement via responses to evaluation instruments and the length of time required by the user to complete instruction, user perspectives about the instructional materials, and suggestions for revision of materials.

Field trial phase. In the field trial phase, the final phase of formative evaluation, the instructional material is implemented with a group of about 30 users who are representative of the targeted population in a context that closely resembles that for which the instructional material is intended. The purpose of the field trial phase is to determine whether revisions made as a result of analysis of data from the small-group evaluation phase are effective and if the instructional materials can be used in its intended context. The procedures for field trial sessions are similar to those used during the small-group session. And, like small-group evaluation, data are collected about user achievement and attitudes during the field trial phase.

Summary. With the fast-paced, and often complex, design process of Web-based materials, the need for formative evaluation is great, but is sadly lacking. Dick and Carey (1996) described a systems approach to the design and development of instructional products. In this model, there are three phases of formative evaluation: (a) one-to-one, (b) small-group, and (c) field trial, which are typically preceded by an expert review phase. The content and design of the materials are assessed during the expert review phase. The next three phases involve implementation of the materials with users who are representative of the targeted population to assess its clarity, its impact on users, and its feasibility.

Research Questions

The following research questions were addressed in this investigation:

- 1) According to instructional design and usability experts, did the design of the WPSS reflect characteristics of effective WPSSs?
- 2) According to subject matter experts, did the WPSS contain content that is current and appropriate for postsecondary personnel who provide services to students with disabilities?
- 3) According to individuals with disabilities, was the content, format, and navigation of the WPSS accessible to individuals with visual impairments,

- mobility impairments, and learning disabilities?
- 4) According to representatives of the target population, was the WPSS effective in providing information about accommodating students with disabilities in higher education?
 - 5) According to representatives of the target population, how did users perceive the WPSS?
 - 6) According to representatives of the target population, what difficulties did users encounter while interacting with the WPSS?

Answers obtained for the research questions were used to revise the WPSS prior to posting it on the Web.

Figure 1. Performance Zone for Postsecondary Personnel Accommodating Students with Disabilities

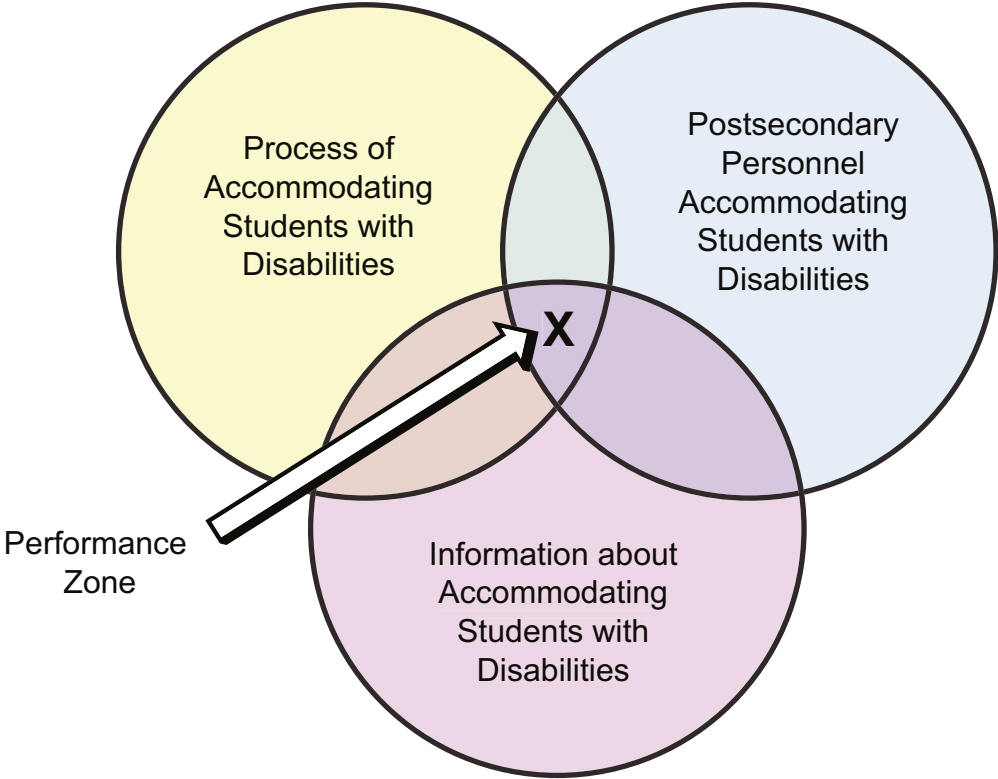
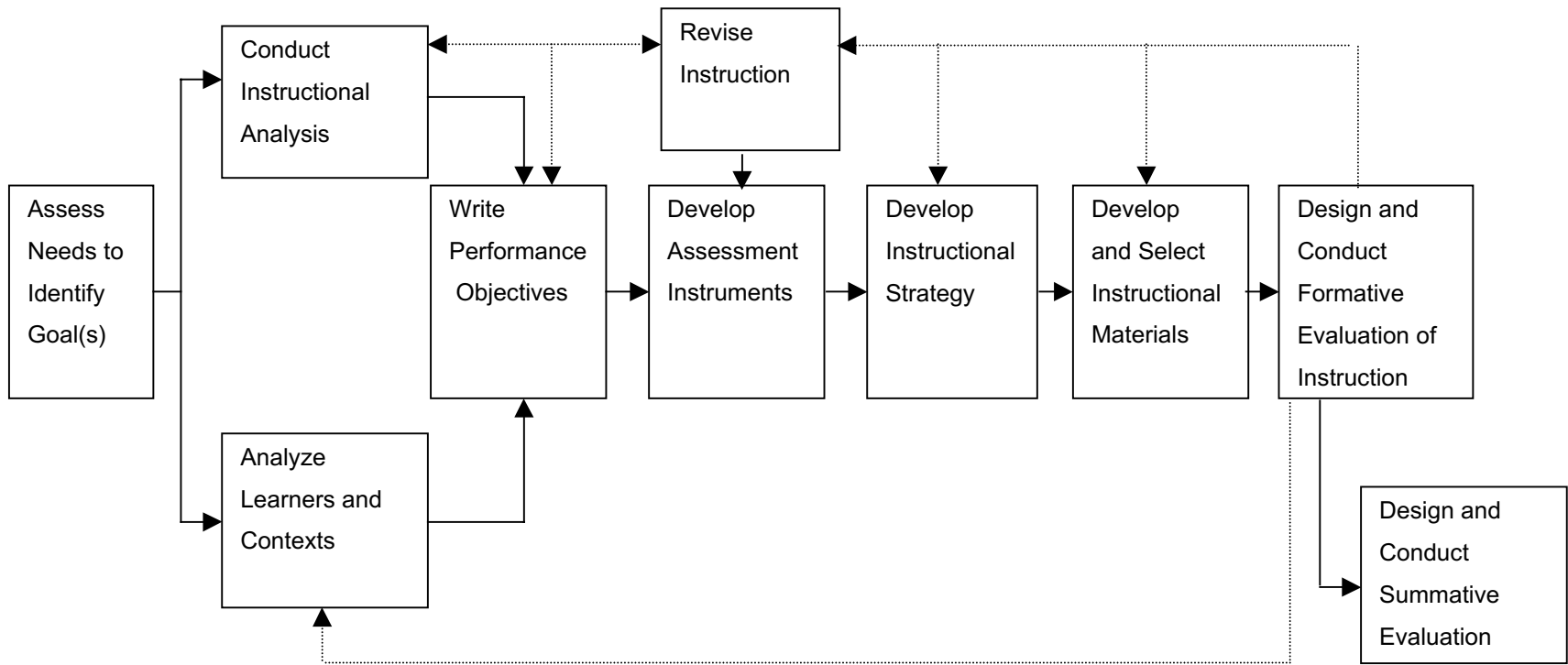


Figure 2. Dick and Carey Systems Approach Model for Instructional Design

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Note. From *The systematic design of instruction*. (4th ed.) (p. 2-3), by W. Dick and L. Carey, 1996, NY: Harper-Collins.

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Chapter II

Methods

This investigation had two purposes: (a) to evaluate the content and design validity of the WPSS, and (b) to identify revisions required in the WPSS prior to dissemination. The following section describes the development process, the informational format and content areas, and the procedures that were used for evaluating the WPSS.

Product Development

In the fall of 1999, UK personnel in the Department of Special Education and Rehabilitation Counseling (EDSRC) received the UK-ED grant which was conducted in collaboration with the UK Disability Resource Center (DRC), the UK Vice President for Administration, the UK Teaching and Learning Center (TLC), the LCC Disability Support Services, and the Kentucky Community Technical and College System (KCTCS). The purpose of the grant was to develop Web-based professional development materials related to accommodating students with disabilities at postsecondary institutions. In order to meet the needs expressed via comments on the on-line surveys and in interviews, it was determined that the Web-based training materials would be best presented as a WPSS. At the beginning of the WPSS development phase, the UK-ED project contracted with Interactive Media Group (IMG), a private company that designs and develops multimedia projects, for technical assistance in the design and production of the UK-ED WPSS.

Development Team

A development team was established consisting of UK-ED project staff and IMG personnel. The team consisted of the following professionals: (a) project director, (b) content experts, (c) instructional designers, (d) multimedia specialists, and (e) computer programmers. Because of the diverse skills of all members of the development team, UK-ED project staff and IMG personnel served in a variety of roles during the development of the WPSS. The investigator served as project director, content expert, instructional designer, and computer programmer.

Development Process

During the first five months of development of the UK-ED WPSS, project timelines were developed and needs assessment activities were conducted. The content experts constructed the Info Pages and materials to be included in the Info Search components of the WPSS. The digital instructional designer developed the Viewpoints component of the WPSS. The instructional designers and multimedia specialists developed the organization, navigation, and screen layout of the WPSS. The computer programmers transferred content to a digital format and developed the Info Search component as a searchable area.

Technical Tools

A number of professional media tools and products were used to create the components of the UK-ED WPSS. The graphics were created using Photoshop 5.0 (1999). The content was created and compiled using Microsoft Word (1998). The digital version of the WPSS was programmed using Dreamweaver 3 (1999). The WPSS was developed so that it can be viewed in a variety of Web browsers including Netscape Navigator, Internet Explorer, and Lynx.

Informational Content and Format

The UK-ED WPSS provides information about accommodating students with disabilities at postsecondary education institutions. Content was identified via two assessment methodologies: (a) an on-line survey and (b) individual and small group interviews. First, a survey was employed to obtain data about the current level of understanding about disability issues by higher education personnel. Scenarios regarding interactions with student with disabilities also were included on the on-line survey to obtain attitudinal data from participants about the provision of accommodations on the UK and the LCC campuses (For further information on the survey, see Sheppard-Jones, et. al, 2002).

Next, personnel (i.e., academic administrators, instructional personnel, and auxiliary service personnel) and students with disabilities from the UK campus were recruited to participate in individual and small group interviews as another means of collecting data prior to development of the WPSS. Discussions during the individual and group interviews focused on personal experiences and perceived needs of informants

related to accommodations for students with disabilities in higher education. (For further information on the interviews, see Jensen, et. al, 2002).

Based on these needs assessment activities, the following topical areas were identified for inclusion in the UK-ED WPSS: (a) physical accessibility, (b) etiquette, (c) instructional accommodations, (d) accessible and assistive technology, (e) legislation, (f) policy, (g) relevant court cases, (h) services, (i) experts, and (j) related literature. During the needs assessment phase, participants also informed project staff that postsecondary personnel needed didactic information about disability areas, that attitudes and biases about accommodation were present, and that there was a lack of connectedness across the community. To address these topical areas and identified needs, project staff employed four presentation formats for the WPSS: (a) Info Pages to provide didactic information, (b) Viewpoints to allow users to explore attitudes and biases, (c) Info Search to allow users to find services, experts, and related literature, and (d) Info Exchange to allow discussions among postsecondary personnel. [Figure 3](#) illustrates the entry page to the UK-ED WPSS.

Info Pages

The Info Pages component provides didactic information about the topics of physical accessibility, etiquette, instructional accommodations, accessible technology, legislation, policy, and implications for higher education. Users may select Info Pages for topical areas using the local navigation menu included on the left side of each page in the WPSS. Each Info Page provides didactic information infused with media such as images or audio, when appropriate. Within each Info Page, hyperlinks are provided to other locations in the WPSS related to the topic presented on the Info Page. [Figure 4](#) illustrate the three content levels available in the Info Pages component.

Viewpoints

The Viewpoints component allows users to explore their attitudes about providing accommodations to postsecondary students with disabilities. Viewpoints stories are based on comments expressed during individual and small group interviews with representatives of the target audience on the UK campus with responses based on disability rights laws, campus policy, and literature. On the entry page of the WPSS, the user is presented with story headlines, brief story descriptors, and links to Viewpoints

stories. There are several formats for the Viewpoints stories: (a) brief statements with questions and possible responses along with discussions for each response; (b) brief stories that reflect an individual's experiences related to accommodation; and (c) a collage of statements from diverse perspectives on a single topic. Regardless of the story format, Viewpoints stories include hyperlinks that direct the user to other locations in the WPSS that contain information about topics presented in the story. [Figure 5](#) illustrates the three story formats used in the Viewpoints component.

Info Search

The Info Search component contains services, experts, literature, and legal cases related to accommodating postsecondary students with disabilities. First, the user selects either the category he or she wishes to search (e.g., campus resources, law and policy) or is given the option of searching the Info Search area of the WPSS. Upon entering a keyword or selecting a category presented, the user is presented with a list of ranked matches with hyperlinks to contact information for the service or expert, a citation and abstract for the piece of literature, or a citation and summary for the legal case. [Figure 6](#) illustrates the search pages and individual entries contained in the Info Search component.

Express Yourself

The Express Yourself component allow users to discuss the topic of accommodating students with disabilities in postsecondary education. Users may select one of the UK-ED discussion forums or from a list of external discussion forums and listservs. Within the UK-ED discussion forums, users can post questions or concerns as well as view responses and solutions from the entire postsecondary community or their individual campus. [Figure 7](#) illustrates the options for discussion in the Express Yourself component.

Evaluation Procedures

Evaluation of the UK-ED WPSS was conducted using methods from the model for formative evaluation of instructional materials described by Dick and Carey (1996). As described in Chapter 1, the formative evaluation process described by Dick and Carey (1996) consists of three phases: (a) a one-to-one evaluation phase, (b) a small-group evaluation phase, and (c) a field trial phase, all of which are typically preceded by

expert review. The following section describes procedures that were used to conduct the three phases of formative evaluation as well as the expert review that precedes the formative phases. [Table 1](#) provides an overview of the measures and analysis elements for the three phases of formative evaluation as well as the expert review phase.

Common Procedural Features

For all evaluation phases conducted in this study, the investigator followed specific procedures for recruiting prospective participants, ensuring confidentiality of participant responses, communicating with participants, and revising the WPSS during an evaluation phase.

Recruitment of participants. A list of prospective expert reviewers and users from the targeted population was developed at the beginning of each phase. Five groups of expert reviewers were recruited to participate in the expert review phase: (a) instructional design and usability experts for the heuristic evaluation; (b) individuals with visual impairments for the accessible design analysis; (c) individuals with mobility impairments who use keyboard shortcuts or assistive technology devices for the accessible design analysis; (d) individuals with learning disabilities in the area of reading for the accessible design analysis; and (e) subject matter experts for the content analysis.

In addition, three groups of users were recruited on the UK campus to participate in the one-to-one, consumer analysis and field trial phases: (a) academic administrators, (b) instructional employees, and (c) auxiliary service administrators. Prospective users from the target population who agreed to participate in this study were only included in evaluation activities for one phase (i.e., one-to-one, consumer analysis, or field trial).

A list of at least seven prospective reviewers were identified for each group of expert reviewers based on personal knowledge, a list of authors with expertise in each area, participation in needs assessment activities on the UK campus, participation in the Demonstration Projects to Ensure Students with Disabilities Receive a Quality Higher Education program, as well as suggestions from UK-ED advisory board members or University faculty. For the one-to-one phase, a list of at least seven prospective users in each constituent group was created from the UK-ED advisory board members, to the

greatest extent possible. For the consumer analysis phase, a list of at least seven prospective users in each constituent group was created based on recommendations from individuals who participated in the one-to-one phase and from UK-ED advisory board members that did not participate in the prior phase. For the final phase, field trial, a list of 13 academic administrators, 20 instructional employees, and seven auxiliary service administrators was created from recommendations from individuals who participated in the consumer analysis phase and by random selection of individuals from colleges and departments who had not been represented in previous phases. The variation in numbers of prospective users for each constituent group in the field trial phase was due to the variations in the size of the subgroups of the population (i.e., more instructional employees than academic administrators, more academic administrators than auxiliary service administrators).

To request their participation in the study, prospective reviewers and users were sent a letter via conventional mail or e-mail. [Appendix A](#) contains recruitment letters sent to participants during the four evaluation phases. Prospective participants indicated their interest in participating in this study via e-mail or telephone. A follow-up request was sent to all prospective participants who did not reply within 10 calendar days. For expert review groups as well as one-to-one and consumer analysis groups, if less than five participants agreed to participate in the study, an additional list of prospective participants was developed. This process was continued until consent was secured from five participants for each group. If more than five participants agreed to participate in the study, the first five respondents were accepted. Other respondents were sent a letter thanking them for their cooperation and notifying them that their participation in the study was unnecessary at this time, but may be desired in the future. For the field trial phase, the process was the same, but the numbers of users required for participation increased to ten academic administrators, 15 instructional employees, and five auxiliary service administrators.

Confidentiality of participant responses. When a list of reviewers or users was developed, each participant was given a code (e.g., the first name on the consumer analysis users list of academic administrators would be coded as AA.CA.1) to allow the investigator to track participants throughout evaluation phases without identifying the

individual participants. In addition, user codes were used to identify users on audio recordings and transcripts of individual sessions during the one-to-one and consumer analysis phase. Participants in the expert review and field trial phases were required to submit a signed consent form along with their evaluation instruments. All participants in the one-to-one and consumer analysis phases were required to sign a consent form at the beginning of the session.

For all instruments, both print and on-line versions, participants used their designated code so that the investigator could track submissions and analyze responses without identifying the individual participants. A hard copy of electronic materials was printed and then electronic files were transferred to a Zip disk, a removable computer file storage device. All print materials, audiotapes, and Zip disks were kept in a locked file cabinet.

Communication with participants. Upon agreeing to participate in the study, each participant was sent another letter via e-mail or conventional mail. Expert reviewers were sent a letter that: (a) thanked them for their participation in the study, (b) explained the review procedure, (c) provided an overview of the project, (d) linked to the WPSS, and (e) included a link to or a print version of the appropriate survey instrument (i.e., heuristic survey, accessible design survey, content analysis survey) and consent form to be completed by the reviewer.

One-to-one and consumer analysis users were sent a letter that: (a) thanked them for their participation in the study, (b) explained the review procedure, (c) provided an overview of the project, and (d) included a request for the arrangement of an individual session. Field trial users were sent two forms of communication: (a) an e-mail note to thank them for their participation in the study and to indicate a packet of materials was being sent to them via campus mail and (b) a packet that explained the review procedure, provided directions and a link to the WPSS, included the appropriate evaluation instruments (i.e., in-session questionnaire, post-session survey) and the consent form to be completed by the user, as well as a self-addressed envelope for submission of the evaluation materials. [Appendix B](#) contains the communication letters sent to participants during the four evaluation phases.

Reviewers and field trial users were asked to explore the WPSS, complete the corresponding evaluation instrument(s), and submit it to the investigator within two weeks. Users from the one-to-one and consumer analysis phase were asked to arrange an individual evaluation session with the investigator within two weeks. No later than two business days after the evaluation instruments were due, an e-mail follow-up note was sent reminding the participants of the time line for completing the study. If all instruments were not returned or an individual session was not arranged within five business days, the investigator sent another follow-up message to the participant and attempted to contact him or her by phone. If the investigator did not receive all instruments or arrange an individual session within five business days of the last follow-up message, the investigator contacted another participant and began the recruitment process again.

Upon submission of evaluation instruments, the investigator had the option of generating relevant follow-up questions based on analysis of the instruments submitted. If follow-up was necessary, the participant was sent a note thanking him or her for participation in the study along with the follow-up questions generated by the investigator within three days of submission of the instrument. If follow-up was not necessary, the investigator sent the participant a note thanking him or her for participation in the study within three business days of submission of the instruments. If follow-up questions were sent to a participant and a response was not received within two weeks, the investigator sent a follow-up note reminding the participant of the timeline for the study. If follow-up responses were not received from a participant within five business days of the follow-up message, the investigator sent another follow-up message and attempted to contact the participant by phone.

Revisions. At the end of each phase (i.e., expert review, one-to-one, consumer analysis, field trial), the investigator developed a list of needed revisions for the WPSS based on analysis of responses from reviewers and users. Project staff reviewed this list of needed revisions and determined the priority and significance of revisions suggested by participants. If the data indicated that significant revisions were required, revisions were made to the WPSS prior to initiation of the next evaluation phase.

Expert Review Phase

The expert review phase of the formative evaluation was conducted with three groups: (a) instructional design and usability experts, (b) subject matter experts, and (c) individuals with disabilities. These experts conducted a heuristic evaluation, content analysis, accessible design analysis, and congruence analysis.

Heuristic evaluation. A heuristic evaluation survey was developed for experts in instructional design and Web usability to use during the expert phase. The heuristic evaluation survey required reviewers to categorize design and usability violations according to usability heuristics based on Nielsen's usability heuristics (1994). The survey was sent electronically to reviewers for completion. [Appendix C](#) contains the heuristic evaluation survey.

Content review. A content analysis survey was developed for experts in accommodating postsecondary students with disabilities to use during the expert review phase. Questions about the congruence of the WPSS were incorporated into the content analysis survey. The survey was designed to carefully reflect the elements of the analysis component and was presented in an electronic format on the World Wide Web. For analysis of the content provided in the WPSS, experts in accommodating postsecondary students with disabilities were asked to complete a content analysis survey to evaluate the degree to which the WPSS presented accurate and current information about accommodations and achieved the goals of the UK-ED grant. [Appendix D](#) contains the content analysis survey.

Accessible design review. An accessible design survey was developed for individuals with disabilities to use during the expert review phase. Questions about the congruence of the WPSS also were incorporated into the accessible design analysis survey. The survey was designed to carefully reflect the essential components of the Web Accessibility Guidelines 1.0 (World Wide Web Consortium, 1999) and was presented in electronic or print format based on the reviewer's preference. For analysis of the WPSS, individuals with disabilities were asked to complete an accessible design analysis survey to evaluate the degree to which the WPSS met accessibility guidelines and achieved the goals of the UK-ED grant. [Appendix E](#) contains the accessible design survey.

One-to-One Phase

The one-to-one phase of the formative evaluation was conducted with three groups of users from the targeted population: (a) academic administrators, (b) instructional employees, and (c) auxiliary service administrators. In their evaluation of the WPSS, users from the target population focused on its clarity, impact, and feasibility.

Two instruments were developed for use during one-to-one evaluation with users: (a) three versions of an in-session task-based questionnaire and (b) a post-session satisfaction survey. Both instruments were presented in an electronic format on the Web. The in-session questionnaire contained a scenario for which users must answer seven questions using the WPSS. To aid in the development of the questions, the investigator created a list of objectives for information presented in the WPSS. Individuals familiar with the WPSS (i.e., UK-ED Principal Investigator, Instructional Designer, Instructional Technology Consultant, Multimedia Specialist, Research Assistant) reviewed the list of objectives and the questions to evaluate their congruence. The satisfaction survey was designed based on Keller's (1987) ARCS model. [Appendix F](#) contains the three versions of the in-session questionnaire and [Appendix G](#) contains the post-session survey.

Participants met the investigator at a mutually agreed upon UK site to evaluate the WPSS. The site had a computer that connected to the Web and was in a location with minimal distractions. At the beginning of each individual session, the participant received a brief orientation regarding the purpose of the study, the agenda for the session, and the use of the WPSS. Next, the participant was asked to sign a consent form. The participant was given the option of completing a print copy or an on-line version of the evaluation instruments. After signing the consent form, the participant began using the WPSS to respond to the in-session questionnaire.

As part of the process, the participant was required to log the time he or she began responding to the question and the time he or she ended looking for a response for each question. While the participant was responding to the questions, the investigator used a tracking form to record the path taken through the WPSS to answer each question and a bug report form to report mechanical and technical errors that

occurred. [Appendix H](#) contains the tracking form and [Appendix I](#) contains the bug report form.

In addition, the investigator tape recorded the session, with permission of the participant, to document comments expressed by the participant while interacting with the WPSS. When difficulties occurred while the participant was interacting with the WPSS, the investigator interviewed the participant to acquire more information about the nature of the problem.

Upon completion of the in-session questionnaire, the participant was asked to complete the post-session satisfaction survey. Following this, the participant was debriefed for additional comments about the WPSS and then was allowed to leave the evaluation site.

Consumer Analysis Phase

In the Dick and Carey (1996) model of formative evaluation, the one-to-one phase is followed by a small-group phase. In this phase, 8 - 20 users who are representative of the target audience are recruited to evaluate the materials in a setting similar to the location where materials will be used in the future. The term small-group is used to refer to the number of users involved in the evaluation phase not the setting in which the users interact with the materials. In order to evaluate the WPSS, the small-group evaluation was conducted with individual users in their workplace since the WPSS was designed for postsecondary personnel to use alone while providing accommodations to postsecondary students with disabilities. To avoid confusion, however, the term consumer analysis was substituted for small-group in this study. The instruments developed for users during the one-to-one evaluation phase were modified slightly for use during the consumer analysis phase. The modifications included points of clarification about directions provided and features analyzed in the instruments. [Appendix J](#) contains the modified in-session questionnaires and post-session survey.

Participants met the investigator at a mutually agreed upon UK site with a computer that connected to the World Wide Web to evaluate the WPSS in an hour session. Like the one-to-one session, the consumer analysis session began with a brief

orientation. Next, the participant was asked to sign a consent form prior to using the WPSS to complete the in-session questionnaire.

Unlike the one-to-one session, the participant was given a print copy of the evaluation instruments for completion. The investigator only discussed the WPSS or provided technical assistance upon request from a participant during the consumer analysis session.

Upon completion of the in-session questionnaire, the participant was asked to complete the post-session satisfaction survey. Following this, the participant was debriefed for additional comments about the WPSS and then was allowed to leave the evaluation site.

Field Trial Phase

During the field trial phase, the instruments (i.e., in-session questionnaires and post-session satisfaction survey) developed for users during the consumer analysis evaluation phase also were used with users from the targeted population. The instruments were sent along with a brief set of directions to the participant via campus mail. Participants on the UK campus completed the instruments and returned them via campus mail.

Table 1. Overview of Measures and Analysis Elements for Evaluation Phases

Phases	Analysis Elements	Measures
Expert Review	Heuristic Evaluation	Survey of Instructional Design Experts
	Content Analysis	Survey of Subject Matter Experts
	Accessible Design Analysis	Survey of Individuals with Disabilities
	Congruence Analysis	Survey of Subject Matter Experts Survey of Individuals with Disabilities
One-to-One	Outcomes Analysis	Direct Observation In-Session Questionnaires Post-Session Survey
Consumer Analysis	Outcomes Analysis	Direct Observation In-Session Questionnaires Post-Session Survey
Field Trial	Outcomes Analysis	In-Session Questionnaires Post-Session Survey

Figure 3. Entry Page

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504 and the schools
ELEVATOR
VAN ACCESSIBLE
DOOR OPENS AUTOMATICALLY
Advocacy for Special Education Students

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[Viewpoints Index](#)

Featured Items . . .

- FAQ: [Instructional Accommodations](#)
- Disability Rights Laws: [Section 504 FAQ](#)
- Campus Policy: [Test Accommodations](#)
- Legal Implications: [Determining Reasonable Accommodations](#)

Welcome!

The Engaging Differences project is focused on enhancing the quality of education and services provided to postsecondary students with disabilities on the University of Kentucky campus.


If you are a first time visitor, please take a few minutes to explore the [Site Tips](#) section.

Our site is divided into 4 main areas:

- General information about accessibility, accommodations, federal laws, and campus policy
- Searchable database containing service, experts, literature, and legal cases related to disability issues
- Discussion forums and list serves that allow conversations about disability issues
- Stories that present varying perspectives on accommodation as well as provide disability-related information

Featured Stories . . .

[Is This Request Reasonable?](#)



Who draws the line when honoring students' requests for accommodations? "I don't know where that line is!" said one administrator. In [Drawing the Line](#), explore the issues associated with providing accommodations for students with disabilities.

Figure 4a. Level One of the Info Pages Area

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[Viewpoints Index](#)

Share your thoughts and experiences related to disability rights laws and campus policy in the [campus forum](#).

Disability Rights Laws: overview

The Civil Rights Movement of the 1960s inspired the subsequent Disability Rights Movement that greatly influenced the legislation of the 1970s, 1980s, and 1990s. These disability rights laws prohibited discrimination against people with disabilities and provided access to education, public accommodations, telecommunications, and transportation.

[The Rehabilitation Act](#)

The Rehabilitation Act prohibits discrimination on the basis of disability in programs conducted by federal agencies, in programs receiving federal financial assistance, in federal employment, and in the employment practices of federal contractors. The standards for determining employment discrimination under the Rehabilitation Act are the same as those used in [Title I of the Americans with Disabilities Act](#).

[Americans with Disabilities Act \(ADA\)](#)

The Americans with Disabilities Act was signed into law as P.L. 101-336 in 1990 and carries forward the initial framework of Section 504 of the [Rehabilitation Act of 1973](#). It prohibits discrimination against people with disabilities and provides access to

Figure 4b. Level Two of the Info Pages Area

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[Viewpoints Index](#)

Share your thoughts and experiences related to disability rights laws and campus policy in the [campus forum](#).

[Disability Rights Laws](#) | **Rehabilitation Act**

The Rehabilitation Act: Overview

[Section 501: Employment by Federal Agencies of the Executive Branch](#)

Section 501 requires affirmative action and nondiscrimination in employment by federal agencies of the executive branch. To obtain more information or to file a complaint, employees should contact their agency's [Equal Employment Opportunity Commission](#) office.

[Section 503: Employment by Federal Government Contractors](#)

Section 503 requires affirmative action and prohibits employment discrimination by federal government contractors and subcontractors with contracts of more than \$10,000.

[Section 504: Programs and Activities Receiving Federal Financial Assistance](#)

Section 504 states that "no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under" any program or activity that either receives federal financial assistance or is conducted by any executive agency or the United States Postal Service.

Each federal agency has its own set of Section 504 regulations that apply to its own

Figure 4c. Level Three of the Info Pages Area

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[Viewpoints Index](#)

Share your thoughts and experiences related to disability rights laws and campus policy in the [campus forum](#).

[Disability Rights Laws](#) | [Rehabilitation Act](#) | **Section 504: FAQ**

Section 504: FAQ

[What is the Purpose of Section 504?](#)
[Who is Protected Under Section 504?](#)
[What Does Equal Access Mean Under Section 504?](#)
[What is a Reasonable Accommodation Under Section 504?](#)
[Who Enforces Section 504?](#)
[What Steps Are Taken After a Grievance is Filed?](#)

What is the Purpose of Section 504?

[Section 504](#) of the Rehabilitation Act of 1973 (Public Law 93-112) was the first federal civil rights legislation that was designed to protect the rights of persons with disabilities. It was originally proposed as an amendment to the Civil Rights Act of 1964, but instead was included as an amendment to the Rehabilitation Act of 1973.

External Links:

- [Rehabilitation Act Amendments of 1998](#)
- [Federal 504 Regulations](#)

Figure 5a. Question and Answer Story Format in the Viewpoints Section

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[Express Yourself](#)

[Viewpoints Index](#)

Join the conversation on disability issues in the [Viewpoints Forum](#).

Part 1 | [Part 2](#) | [Part 3](#) | [Part 4](#)

Drawing the Line: Part 1

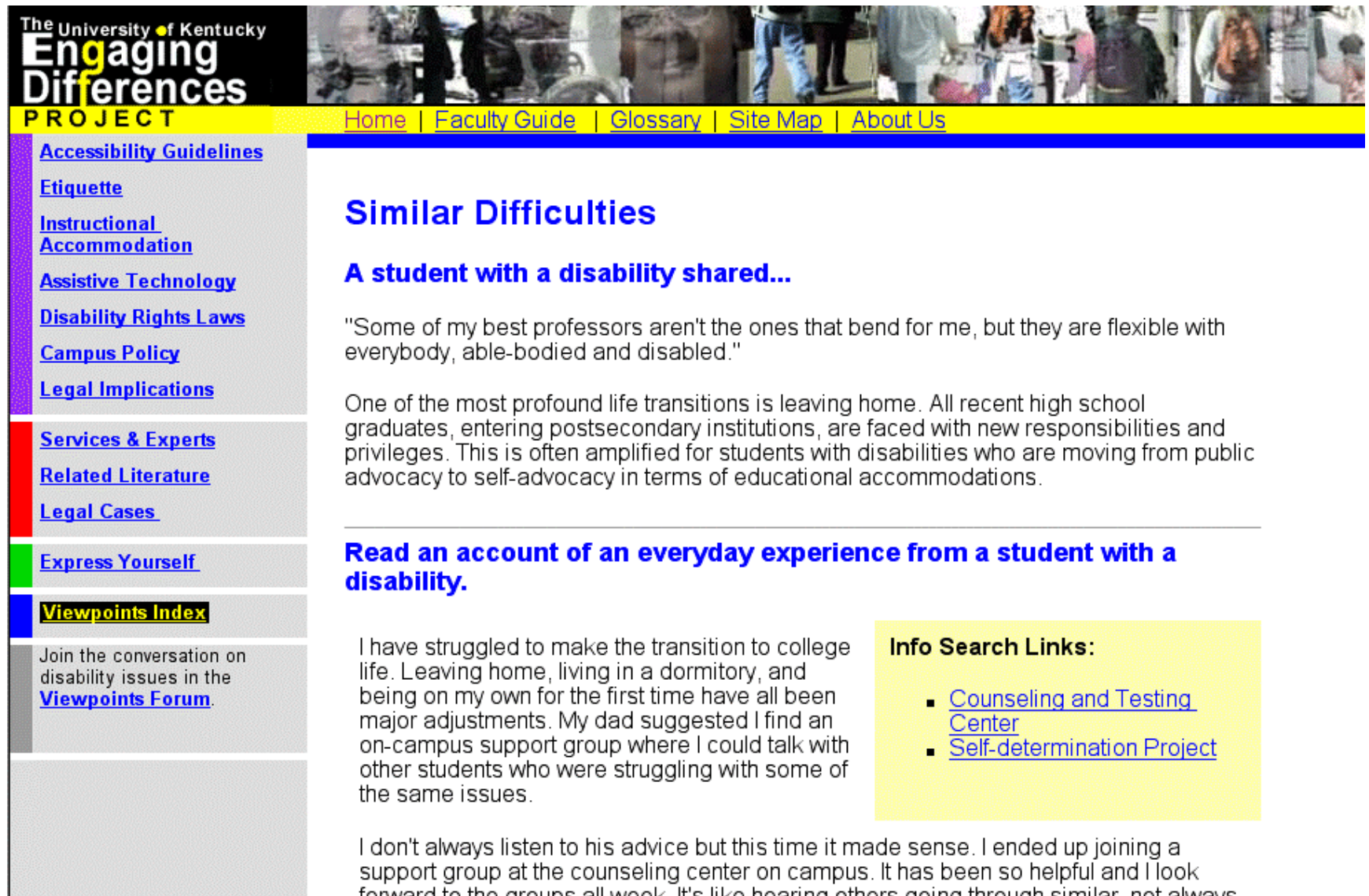
According to one postsecondary administrator...

"Particularly in the area of learning disabilities, I don't know who is supposed to draw the line. I think at a certain point it's not fair to the student to say, "Oh, yes you can." Yes, you can when we really think they can't do it even given all the accommodations that we can provide. You know, there's a controversy about learning disabilities, what is a learning disability, and what isn't a learning disability. You know, that very fine dividing line..."

What is your viewpoint on instructional accommodations for students with disabilities?

- All [students should accommodate](#) to the academic standards already in place in this institution, as well as the existing instructional practices of individual faculty members
- Postsecondary education is for anyone who desires it and it is our obligation to [provide every accommodation that is needed](#) by our students
- It is [unfair to offer special privileges](#) to select students. If they can't hack it the way it is, they should go elsewhere
- Postsecondary education is [not for everyone](#)
- Instructional [faculty should go the extra mile](#) to meet the needs of every student
- Instructional faculty should develop instructional [plans that are as inclusive of individual differences as possible](#)

Figure 5b. Personal Story Format in the Viewpoints Section



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Join the conversation on disability issues in the [Viewpoints Forum](#).

Similar Difficulties

A student with a disability shared...

"Some of my best professors aren't the ones that bend for me, but they are flexible with everybody, able-bodied and disabled."

One of the most profound life transitions is leaving home. All recent high school graduates, entering postsecondary institutions, are faced with new responsibilities and privileges. This is often amplified for students with disabilities who are moving from public advocacy to self-advocacy in terms of educational accommodations.

Read an account of an everyday experience from a student with a disability.

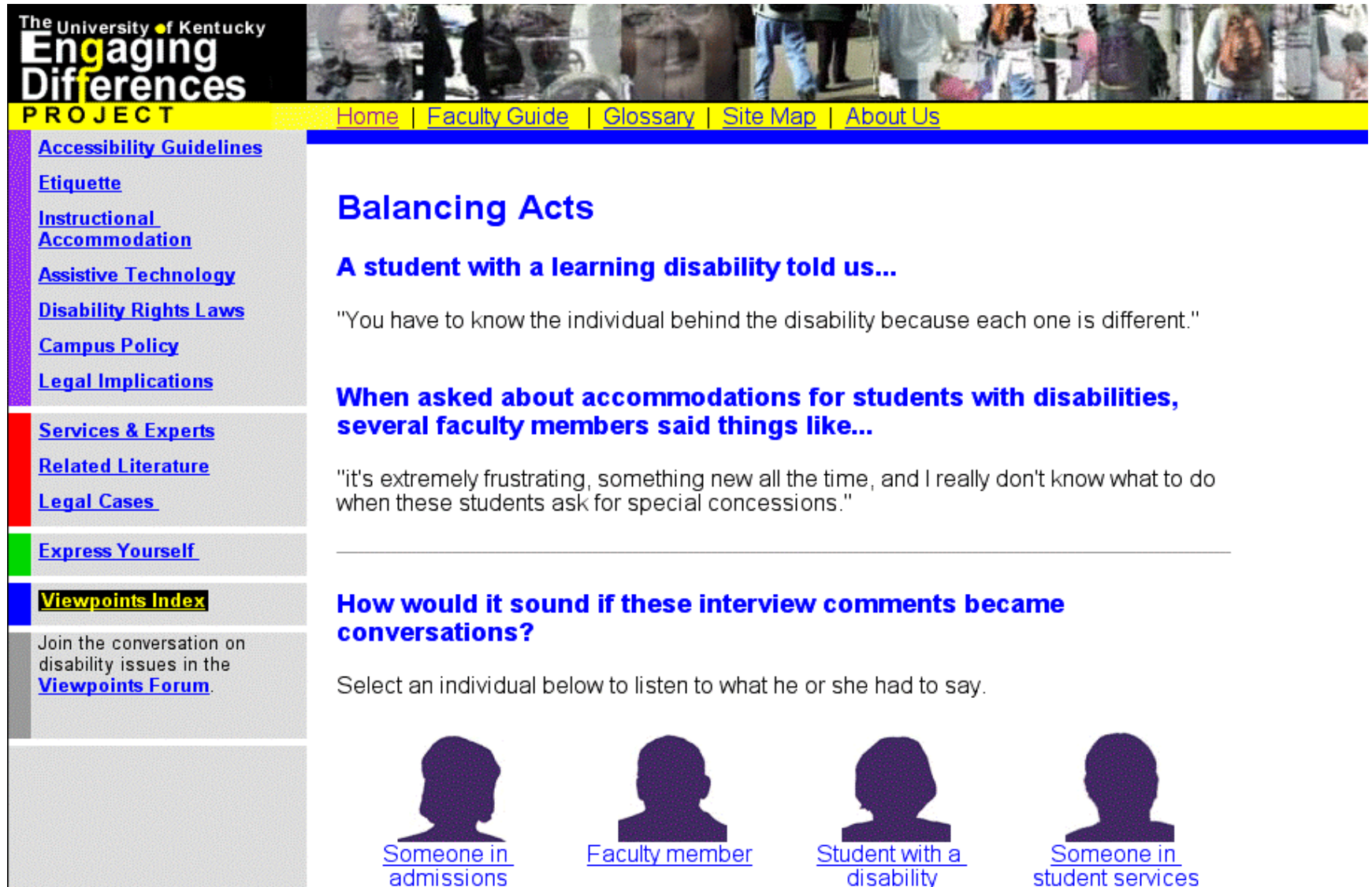
I have struggled to make the transition to college life. Leaving home, living in a dormitory, and being on my own for the first time have all been major adjustments. My dad suggested I find an on-campus support group where I could talk with other students who were struggling with some of the same issues.

I don't always listen to his advice but this time it made sense. I ended up joining a support group at the counseling center on campus. It has been so helpful and I look forward to the groups all week. It's like hearing others going through similar, not always

Info Search Links:

- [Counseling and Testing Center](#)
- [Self-determination Project](#)

Figure 5c. Collage Story Format in Viewpoints Section



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[Express Yourself](#)

[Viewpoints Index](#)

Join the conversation on disability issues in the [Viewpoints Forum](#).

Balancing Acts

A student with a learning disability told us...

"You have to know the individual behind the disability because each one is different."

When asked about accommodations for students with disabilities, several faculty members said things like...

"it's extremely frustrating, something new all the time, and I really don't know what to do when these students ask for special concessions."

How would it sound if these interview comments became conversations?

Select an individual below to listen to what he or she had to say.

[Someone in admissions](#) [Faculty member](#) [Student with a disability](#) [Someone in student services](#)

Figure 6a. Search Page in the Info Search Section

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Are We Missing Something?
Suggest or request a disability related case to be added to our site in the [Resources Forum](#).

Search: Legal Cases

Search Help Information can be found in the [tips](#) section of this Web site. If you would prefer not to search our site, a [full listing of all legal cases](#) is available.

Browse Our Cases:

[Supreme Court](#) [Circuit Court](#)
[District Court](#) [Office of Civil Rights \(OCR\)](#)
[Admissions and Readmissions](#) [Provision of Accommodations](#)
[Learning Disabilities](#) [Disability Documentation](#)

[Home](#) | [FAQ](#) | [Glossary](#) | [Site Search](#) | [Site Help](#) | [About Us](#)

Figure 6b. Retrieved Information Entry Page in the Info Search Section

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Are We Missing Something?
Suggest or request a disability related case to be added to our site in the [Resources Forum](#).

Bartlett v. New York State Board of Law Examiners (2nd Cir. 2000)

Summary: When Bartlett sought to take the New York State Bar Examination, she requested accommodations such as extended time, permission to tape her essays, and permission to circle multiple choice answers in her test booklet. Each time she applied for accommodations, the Board of Law Examiners denied them on the basis that her application did not support a diagnosis of a learning disability.

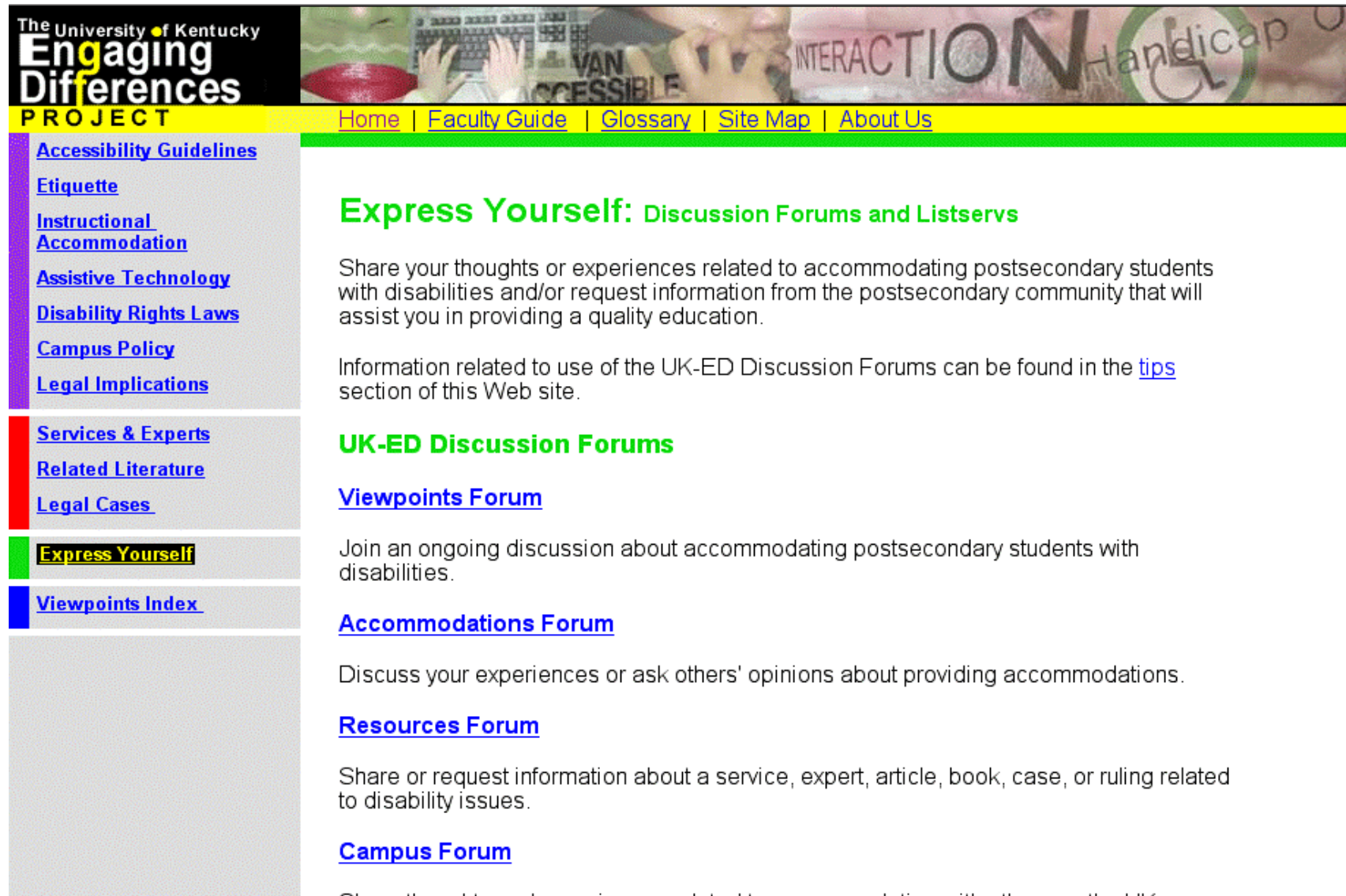
External Link:

- [Full Text of the Bartlett v. Board of Law Examiners Opinion](#)

After being denied accommodations and failing the exam four times, she agreed to the only accommodations the bar examiners were willing to give: time and a half and a reader/scribe who would record the answers in longhand. Once again, she failed to pass the exam.

The United States Court of Appeals upheld the decision of a U.S. District Court finding Bartlett to be a person with a disability within the meaning of the [Americans with Disabilities Act](#) and the [Rehabilitation Act](#) and requiring the New York State Board of Law Examiners to provide her with accommodations in taking the New York State Bar Examination. The Second Circuit found that:

Figure 7. Express Yourself Section



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- [Etiquette](#)
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- [Legal Implications](#)

- [Services & Experts](#)
- [Related Literature](#)
- [Legal Cases](#)

- Express Yourself**
- [Viewpoints Index](#)

Express Yourself: Discussion Forums and Listservs

Share your thoughts or experiences related to accommodating postsecondary students with disabilities and/or request information from the postsecondary community that will assist you in providing a quality education.

Information related to use of the UK-ED Discussion Forums can be found in the [tips](#) section of this Web site.

UK-ED Discussion Forums

[Viewpoints Forum](#)

Join an ongoing discussion about accommodating postsecondary students with disabilities.

[Accommodations Forum](#)

Discuss your experiences or ask others' opinions about providing accommodations.

[Resources Forum](#)

Share or request information about a service, expert, article, book, case, or ruling related to disability issues.

[Campus Forum](#)

Share thoughts and experiences related to accommodation with others on the UK

Chapter III

Results and Discussion

The purpose of this section is to describe and interpret the results of this investigation. Since this investigation was formative, results for the research questions are reported according to the respective evaluation phases conducted. The first three research questions will be discussed in the expert review phase section, while the last three research questions will be discussed in sections about the one-to-one, consumer analysis, and field trial phases. Along with the results of the question, a discussion of the results is provided. At the end of each evaluation phase, revisions made to the WPSS based on the results are described.

Expert Review Phase

As discussed in the methods section, the expert review phase of the formative evaluation was conducted with three groups: (a) instructional design and usability experts, (b) subject matter experts, and (c) individuals with disabilities. These experts conducted a heuristic evaluation, content analysis, accessible design analysis, and congruence analysis. In this section, the results for this phase, which answer the first three research questions, are presented along with a discussion of these results. In addition, revisions made to the WPSS based on the results from this phase are described.

Research Question #1: According to Instructional Design and Usability Experts, Did the Design of the WPSS Reflect Characteristics of Effective WPSSs?

To determine the degree to which the design of the WPSS reflected characteristics of effective WPSSs, experts in instructional design and Web usability were asked to complete a heuristic survey. E-mail messages were sent to design and usability experts requesting their participation in this research. This process continued until five experts agreed to participate and submitted the survey. The experts either downloaded the heuristic survey ([Appendix C](#)) from the WPSS or received it as an attachment to an e-mail message and submitted it to the investigator electronically or via a facsimile machine. Four reviewers viewed the WPSS on a Windows computer and one used a Macintosh computer. Three reviewers viewed the WPSS using the Internet Explorer Web browser and two used the Netscape Web browser.

The heuristic survey required instructional design and Web usability reviewers to identify and categorize design and usability violations according to nine heuristics based on Nielsen's usability heuristics (1994). Under the heading for each heuristic, a brief description was provided to guide the reviewer in categorizing violations found. The reviewer was prompted to report the location (e.g., specific page, specific section, entire WPSS) of each violation. Due to the open-ended nature of the instrument, all responses made by reviewers were analyzed qualitatively. The comments were sorted according to the heuristics and coded based on common themes revealed during analysis. Specific comments from reviewers are represented by words and phrases in quotation marks.

[Table 2](#) presents information about where violations were found in the WPSS and to which heuristic they were associated. For the first heuristic, **visibility of system status**, the five reviewers found a total of 15 violations in the WPSS. The majority of these were related to the navigation menus and use of links in the WPSS. One reviewer stated that he was unclear how the navigations bars at the top and the left were related. He also found the use of white backgrounds behind links on the navigation bars to identify location “looked like a mistake.” A stronger combination of background and foreground colors was used to more clearly highlight the page location.

A second reviewer reported that the **Contact Us** link in the top navigation bar “drops down to the next line” on certain pages. A third reviewer reported that content in link boxes in the **Viewpoints** component was clipped off on the right side “making it unreadable unless the browser window is stretched.” The HTML code on these pages was revised to alleviate these problems.

A fourth reviewer was concerned with the **Entry Page**. She felt it contained “all of the information from the VP [**Viewpoints**] portion to the exclusion of all others.” The navigation bar on the left side of all pages was another area of concern for this reviewer. In her opinion, it would benefit from the inclusion of headers to identify the groupings, the movement of “dead links” to the bottom of the list, and the reorganization of groupings according to the amount of information provided. These changes were not deemed necessary because the **Entry Page** was intentionally designed for two types of users: (a) those who know exactly what information they want to locate and (b) those

who prefer to browse. The left navigation menu was not reorganized because “dead links” represented areas of the WPSS that were not currently developed, but would be available to users in the future.

A fifth reviewer found it “disconcerting when the links opened and expanded the information” in the **Viewpoints** component. To avoid user confusion, it was necessary to redesign the response pages so that only the response was presented.

For the second heuristic, **speaks user's language**, four of the reviewers found a total of nine violations. One reviewer was concerned that the request for a URL on the feedback form may cause the user problems. Since users are given the option of providing a URL or page name on the feedback form, this was not deemed a violation.

A second reviewer was unclear about the term accommodations. She assumed it meant “residence” when she began reviewing the WPSS. While it is understandable that the average person might confuse the term accommodation with housing, it is a common disability term, especially at the postsecondary level. However, a brief introductory message was added to the **Entry Page** to inform users about the purpose of the WPSS.

For a third reviewer, the **Entry Page** was an area of concern. She reported that hyperlinks being embedded into sentences was not intuitive to the user. In her opinion, the user needed instructions and/or labeling about what would be accessed by clicking on links. At the present time, this was not deemed necessary, but will be monitored in future evaluation phases. This reviewer also suggested redesigning the **Viewpoints** component as “self-assessments.” The **Viewpoints** component was designed as an area for personnel to explore attitudes and biases, not as an area to assess one’s knowledge of accommodation.

A fourth reviewer indicated that the “clumsy wording” of the **Site Tips** section “made the ‘help’ less helpful.” While this point is valid, project staff consciously decided not to use the term **Site Help** because users are more likely to explore a section named **Site Tips** than **Site Help**. In addition, the **Site Tips** section was not completely developed prior to the expert review phase. In order to make the **Site Help** section more useful, an overview of the WPSS and information about how to use the components of the WPSS was added to this section.

Two reviewers found three violations of the third heuristic, **user control and freedom**. One reviewer noted that the content in the link boxes on pages in the **Viewpoints** component often disappeared off the right side of the page. Project staff revised the coding on these pages to resolve this problem.

The same reviewer also was concerned that users would be confused because links to pages within the WPSS and those to external sites were not differentiated. A second reviewer also expressed concern about not knowing when a new window would open in the browser. According to this reviewer, “the site seems to be consistent in that all external links open up a new window, which is good, but I didn’t know that the first time that I clicked on an external link.” Since title tags were included on all external hyperlinks to inform users that a new browser window would open, it was unclear why the reviewers experienced these problems.

A total of eight violations of the fourth heuristic, **consistency and standards**, were reported by four of the reviewers. One reviewer indicated that the blue headers on the **Entry Page** looked like hyperlinks. The story headers were made into hyperlinks so that the color did not have to be changed and users were allowed to access the stories via the headers.

The same reviewer also questioned the consistency of the use of banners to identify the WPSS location and felt that the banners appeared and disappeared. Project staff used the same montages throughout sections of the WPSS to alleviate this confusion.

A second reviewer reported visited links not changing color in the **Viewpoints** component as a violation. A third reviewer stated that there was inconsistency in how links were used to provide more information. Links to new pages that expand the information were used in the **Viewpoints** component, but anchored links to sections on the same page were used in other areas like the **Site Tips**. Both problems were resolved by redesigning the **Viewpoints** response pages so that the response opens a new Web browser window.

A fourth reviewer stated that the top navigation menu did not render correctly on several pages in the **Info Pages** component. The HTML code on these pages was revised to alleviate this problem.

The use of the UK search engine caused this reviewer some concern. He indicated that he “saw the inconsistent interface and made the erroneous assumption that the content would not be relevant.” While the search results page had a different design than the rest of the WPSS, it was not possible to redesign this page since it would require the UK Webmaster to create a new design to be used by the UK Web site.

Only the third reviewer identified two violations of the fifth heuristic, **recognition rather than recall**. This reviewer indicated that the **Entry Page** and **Viewpoints** component needed an icon or directions to indicate what type of document (e.g., article, assessments) would be obtained when clicking on a link. Since this was an isolated problem, it was not addressed, but will be monitored in future evaluation phases.

For the sixth heuristic, **flexibility and ease of use**, three reviewers identified nine violations. One reviewer reported that the user would often miss the content under the **Viewpoints** link in the left navigation bar because it is not visible without scrolling. While this point is relevant, every attempt was made to make sure important content was provided above the fold of the page. Project staff, however, reviewed the page layout again to ensure that the most important information was contained on the top half of pages.

A second reviewer stated that the discussion forums in the **Express Yourself** component did not allow the user to put a subject or title when replying to a message or starting a new topic. This was an isolated problem and the cause was unknown.

The **Viewpoints** component and areas that linked to it were the location of violations identified by a third reviewer. She expressed the need for labels and directions related to navigating to and through the **Viewpoints** component. This is because “with each click they [the user] get taken to a target within a new page, rather than a new page dedicated solely to their selection.” To avoid user confusion, the **Viewpoints** response pages were redesigned so that only the response was presented in a new Web browser window.

All reviewers identified violations related to the seventh heuristic, **aesthetic and minimalist design**. The eight violations identified were focused on the use of images/banners and the page layout of the WPSS, especially the **Entry Page** and the

Site Map. One reviewer stated that the use of color to identify WPSS sections “makes for a confetti look.” A second reviewer felt the “**About Us** banner is a little too busy.” A third reviewer felt the overall theme of the WPSS seemed “a bit early 80s.” All of these suggested violations were deemed personal preferences related to design and were not addressed during this phase.

A fourth reviewer reported that the use of color for grouping was not as pronounced as it could be due to the placement of the colored bar below the banner on pages within the WPSS. According to a fifth reviewer, the use of images as a banner at the top of the pages “seemed to eat up a lot of space and were distracting.” In order to optimize use of screen real estate, the logos at the top of the page were replaced with the montages for each section. This also emphasized the color-coding of sections because the montage was placed above the line of color to visually reinforce the section coding.

Only one reviewer reported violations of the eighth heuristic, **progressive levels of details**. She stated that it might be helpful if a “for more information, click here” piece of text was added at the end of each summary in the **Info Pages** component. While this is one plausible method for providing a hyperlink to a more detailed level of information, the section headers served as hyperlinks to more detail and had title tags to inform the user about the type of information that could be obtained.

This same reviewer also was confused about the **FAQ** [Frequently Asked Questions] pages in the **Info Pages** component. She expected to be linked to the actual text of disability rights laws, not **FAQ** pages about the laws. The **FAQ** pages included links to the actual text of disability rights laws for those individuals wishing for more detail about the laws. In fact, the **FAQ** pages allowed for progressive levels of details because they provided more detailed information about the disability rights laws than the overview pages and provided hyperlinks to even more detailed information such as the full text of the laws.

For the final heuristic, **help and documentation**, all five reviewers reported violations. The majority of the seven violations were related to the **Site Tips** section and the **Entry Page**. One reviewer reported that he was unaware the **Site Tips** section was intended to be site help until he happened to click into it during exploration. While this

point was valid, project staff consciously decided not to use the term **Site Help** because users are more likely to explore a section named **Site Tips** than **Site Help**.

The same reviewer also found the lack of an overview of the various sections on the **Entry Page** to be a violation. A second reviewer suggested including context-sensitive tips similar to the phrase on the search pages which states “Search Help Information can be found in the tips section of this Web site.” In an attempt to utilize screen real estate, project staff intentionally included little or no introductory information on the **Entry Page**.

A third reviewer questioned if a help feature existed that was “task oriented”. According to a fourth reviewer, directions on how to use the discussion forums were needed. A fifth reviewer indicated that the “clumsy wording” of the **Site Tips** section “made the ‘help’ less helpful.” These problems were due to the fact that the **Site Tips** section was not completely developed prior to the expert review phase. An overview of the WPSS and information about how to use the components of the WPSS was added to this section.

Summary. Reviewers reported difficulties related to all nine heuristics. Nine actions were undertaken to resolve problems reported by design and usability experts. First, a stronger combination of background and foreground colors was used to highlight the location of the page in the navigation menus. Second, the response pages in the **Viewpoints** component were redesigned so that the response was presented in a new Web browser window. Third, a brief introductory message was added to the **Entry Page** to inform users about the purpose of the WPSS. Fourth, the coding in the **Viewpoints** component was reviewed to determine why content in link boxes is being cut off the right hand side of the page. Fifth, story headers on the **Entry Page** were made into hyperlinks to avoid user confusion. Sixth, montages were used throughout associated sections. Seventh, project staff reviewed the page layout of the WPSS to ensure that the most important information was contained on the top half of pages. Eighth, logos at the top of each page were replaced with the montages for each component. Ninth, an overview of the WPSS and information about how to use the components of the WPSS was added to the **Site Tips** section.

Research Question #2: According to Subject Matter Experts, Did the WPSS Contain Content that is Current and Appropriate for Postsecondary Personnel Who Provide Services to Students with Disabilities?

To determine the degree to which the WPSS presents accurate and current information about accommodation, input was gathered from experts in the area of disabilities in higher education. All five content experts were affiliated with an institution of higher education in either special education departments or disability support services. E-mail messages were sent to content experts requesting their participation in this research. This process continued until five experts agreed to participate and submitted the survey. The experts accessed the content analysis survey ([Appendix D](#)) on-line and submitted it to the investigator electronically. Four reviewers viewed the WPSS on a Windows computer and one used a Macintosh computer. Two reviewers viewed the WPSS using the Internet Explorer Web browser and three used the Web Netscape browser.

The content analysis survey was divided into five sections. Three survey sections focused on the **Info Pages**, **Viewpoints**, and **Info Search** components of the WPSS. The fourth section addressed general issues about the use of the WPSS by postsecondary personnel. Items in the first four sections of the survey were questions to which the reviewer could respond using a 3-point Likert-type scale. Reviewers were invited to write comments at the end of each item. The final section included questions designed to elicit open-ended responses to general questions about the strengths and weaknesses of the WPSS.

In the first part of the content analysis survey, the **Info Pages** component was rated on five dimensions: (a) representation of current practice, (b) accuracy of information, (c) depth of the information, (d) clarity of the information, and (e) feasibility of implementation. [Table 3](#) presents reviewers' responses to this section of the survey.

All reviewers agreed that the content in the section were current or. Three reviewers, however, did not rate the **Campus Policy** area of the **Info Pages** component. One reviewer explained, "It is hard for me to rate the **Campus Policy** section, since I am not aware of the policies on the specific college campuses."

Reviewers agreed that the content in the **Info Pages** component was accurate and sufficient in its depth. One reviewer stated, “this is an excellent resource for faculty and DSS providers alike. I plan to send this link to some of my colleagues.”

Reviewers agreed that the content was clear. “All sections are very clear -- very easy to understand!!! This is a major strength of the website!!” was a comment of one reviewer. In addition, reviewers agreed that accommodation was feasible based on content in this component. One reviewer indicated, “I don’t think this site could stand alone. It is an excellent resource, but ‘real people’ are also still needed to provide assistance....”

The majority of reviewers agreed that use of the **Info Pages** component was likely to promote user confidence in their ability to provide accommodations. A comment made by one reviewer is that “this is an excellent resource for those who feel comfortable with this learning mode. I think some faculty will use it exclusively, some will use it along with hands on training, some will use it with hands on individual technical assistance, and some will choose not to use it.”

In the second part of the content analysis survey, reviewers assessed the **Viewpoints** component on five dimensions: (a) representation of current practice, (b) accuracy of information, (c) depth of the information, (d) clarity of the information, and (e) feasibility of implementation. In addition, reviewers rated the degree to which media supported user understanding of the content. [Table 4](#) presents the reviewers’ responses to this section of the survey.

The majority of reviewers agreed that content in this component was very current and clear. One reviewer commented, “I like the structure of differing views and how to get more information. I can see this structure [as being] very useful for our faculty.” Reviewers also agreed the content was accurate. However, they were divided on whether the stories were not complex enough or were sufficiently complex.

The majority of reviewers agreed that the stories caused exploration of their attitudes. One of the reviewers, who rated them as being very helpful, commented, “The level of helpfulness will depend upon the characteristics of the individual faculty member. These characteristics include such things as: willingness to work with students with disabilities; previous experiences; comfort level with their role as a faculty

member.” One reviewer who did not find them helpful reported that the stories were too short to allow exploration of individual attitudes.

The same reviewer did not agree the component would promote user confidence in providing accommodations. The rest of the reviewers agreed that use of the **Viewpoints** component was likely to promote user confidence in providing accommodations. The majority of reviewers agreed that the media supported user understanding of the content.

In the third part of the content analysis survey, reviewers were asked to assess the **Info Search component** of the WPSS. Content areas in the component were rated on five dimensions: (a) representation of current practice, (b) accuracy of information, (c) depth of the information, (d) clarity of the information, and (e) feasibility of implementation. [Table 5](#) presents the reviewers’ responses to this section of the survey.

The majority of reviewers agreed that content in this component was current and accurate. The majority of reviewers also agreed that the **Services and Experts** area was complete. On the other hand, reviewers were mixed on the **Related Literature** area. While the majority of the reviewers agreed that the content was complete, one reviewer reported that the content was not complete. This reviewer indicated that he had difficulty finding information related to specific hypothetical questions.

The majority of reviewers agreed that the provision of accommodations was feasible based on content in this component. The majority of reviewers also agreed that use of the **Info Search** component was likely to promote user confidence in their ability to provide accommodations. One reviewer, however, commented, “I don’t know that the info on law would change an otherwise recalcitrant faculty member.”

In the fourth section of the content analysis survey, reviewers were asked to rate the overall quality of the content provided in the WPSS. The WPSS was rated on five dimensions: (a) appropriateness for postsecondary personnel, (b) representation of current practice, (c) accuracy of information, (d) depth of the information, and (e) feasibility of implementation. In addition, reviewers rated the degree to which media supported user understanding of the content. [Table 6](#) presents the reviewers’ responses to this section of the survey.

The majority of reviewers agreed that the WPSS was very appropriate for academic administrators and auxiliary service administrators and appropriate for instructional personnel. The majority of reviewers agreed that the content in the WPSS was very accurate and complete. In addition, reviewers agreed that the WPSS was complete in the depth of its content. One reviewer who did not rate the accuracy or completeness of this section stated that the inability to access pages of the WPSS that were under construction might have restricted his ability to accurately evaluate the pages currently available.

The majority of reviewers agreed that use of the WPSS was likely to enhance the provision of accommodations and that its use during the accommodation process was feasible. One reviewer commented that use of the WPSS in combination with a continuum of support services and educational services would be useful for faculty. The majority of reviewers agreed that media supported user understanding of content in the WPSS.

The fifth and final section of the content analysis survey contained four open-ended questions. These questions invited reviewers to discuss the strengths and weaknesses of the WPSS, recommend improvements that should be made to it, and provide additional comments. [Table 7](#) presents the comments made by reviewers in this section of the survey.

All reviewers discussed the strengths of the WPSS. One reviewer stated that users were well targeted and a wide range of info was available for a good selection of topics. The same reviewer appreciated the progressive level of details provided for content in the WPSS. A second reviewer noted the clarity of the information presented in “layperson’s terms.” The same reviewer thought the clean visual effects and the ease with which the user could navigate through the WPSS were strengths. A third reviewer suggested that the WPSS could be a “tremendous asset to administrators, instructional personnel, parents and high school students.” A fourth reviewer reported that the WPSS was “very thorough and user friendly.” A fifth reviewer discussed the value of different viewpoints expressed in the **Viewpoints** component.

Three reviewers discussed weaknesses in the WPSS. Two reviewers expressed concerns about the value of the **Info Search** component. While these concerns were

important, it was not deemed an area for revision because the section only included resources related to legal issues, which would not answer all questions related to accommodation.

One reviewer expressed concern about the visual elements used in the WPSS. He stated, “at times there were elements where I did not see the relationship to the content (e.g., headers at the top of viewpoint stories).” The same reviewer suggested that the **Viewpoints** stories were too predictable. These were isolated problems that were not addressed during this phase.

A second reviewer expressed concerns about inoperative links to some of the more important accessibility issues. This was not deemed a violation because the “inoperative links” were areas in the WPSS that were not currently developed, but would be available to users in the future.

A third reviewer suggested being sure that not too much information is on the page because individuals with learning disabilities may become overwhelmed if there is too much text on the page. Based on this feedback, project staff reviewed pages and determined that the content was chunked appropriately on pages in the WPSS.

Three reviewers recommended improvements that should be made to the WPSS. One reviewer suggested simplifying the format and losing “extraneous visual objects.” To simplify the page layout, the logos at the top of each page were replaced with montages for associated sections of the WPSS.

This same reviewer had several suggestions for improvements to the **Viewpoints** component: (a) integrate the audio clips with the stories and (b) reevaluate the titles used for stories to ensure that they are descriptive. These were isolated suggestions that were not implemented during this phase.

A second reviewer recommended providing access to unavailable pages (i.e., **Physical Accessibility, Etiquette, Instructional Accommodation, and Accessible Technology**). Again, this was not deemed a violation because the “unavailable pages” were areas in the WPSS that were not currently developed, but would be available to users in the future.

A third reviewer suggested providing an explanation of the purpose of the **Viewpoints** component on the **Entry Page**. In an attempt to utilize screen real estate, project staff intentionally included little or no introductory information on the **Entry Page**.

Two reviewers provided additional comments about the WPSS. One reviewer stated the WPSS was “definitely well down the right track” and that the **Viewpoints** component was “hitting the right issues.” This same reviewer expressed that the WPSS was “clearly making progress toward improving the experience and outcomes of individuals who experience college with a disability.” A second reviewer congratulated the investigator on “doing a great job” and stated that she really liked the WPSS.

Summary. Reviewers generally agreed that the WPSS contained information that was current and best practice in the field. The reviewers also agreed that the media contained in the WPSS supported the content. Reviewers agreed that use of the WPSS was feasible and enhanced the accommodation of postsecondary students with disabilities. Finally, reviewers agreed that the WPSS was appropriate for postsecondary personnel.

Based on feedback from subject matter experts, two actions were taken by project staff to improve the WPSS. First, project staff reviewed pages and determined that content was chunked appropriately on pages in the WPSS. Second, the logos at the top of each page were replaced with montages for associated components of the WPSS to simplify the page layout.

Research Question #3: According to Individuals with Disabilities, Were the Content, Format, and Navigation of the WPSS Accessible to Individuals with Sensory Impairments, Physical Impairments, and Learning Disabilities?

To determine the degree to which the WPSS was compliant with accessibility guidelines, individuals with disabilities were asked to complete a heuristic survey. E-mail messages were sent to individuals with disabilities requesting their participation in this research. This process continued until 15 individuals with disabilities agreed to participate and submitted the survey. The reviewers either received a print copy of the heuristic survey ([Appendix E](#)) or received it as an attachment to an e-mail message and submitted it to the investigator electronically or via conventional mail.

Five individuals with visual impairments, five individuals with mobility impairments, and five individuals with reading-based learning disabilities reviewed the WPSS. Ten reviewers viewed the WPSS on a Windows computer, two reviewers used a Macintosh computer, and three reviewers did not identify the computer platform used to view the WPSS. Eight reviewers viewed the WPSS using the Internet Explorer Web browser, three reviewers used the Netscape Web browser, and four reviewers did not identify the Web browser used to view the WPSS. Among those with visual impairments, two reviewers viewed the WPSS using screen reader software, one reviewer used screen magnification software, and one reviewer used docreader software.

The heuristic survey was divided into three sections. The first section required individuals with disabilities to identify and categorize design and usability violations according to five heuristics based on the Web Accessibility Guidelines 1.0 (World Wide Web Consortium, 1999). Under the heading for each heuristic, a brief description was provided to guide the reviewer in categorizing violations found. The reviewer was prompted to report the location (e.g., specific page, specific section, entire WPSS) of each violation. Due to the open-ended nature of this section of the instrument, all responses made by reviewers were analyzed qualitatively. The comments were sorted according to the heuristics and coded based on common themes revealed during analysis. Specific comments from reviewers are represented by words and phrases in quotation marks.

In the second section of the accessible design analysis survey, questions about the congruence of the WPSS were included. For these questions, the reviewer could respond using a 3-point Likert-type scale. Reviewers were invited to write comments at the end of each item. The final section included questions designed to elicit open-ended responses to general questions about the strengths and weaknesses of the WPSS.

Reviewers analyzed the WPSS based on five dimensions of accessible design: (a) provision of text equivalents, (b) clarity of content without the use of color, (c) simplicity and clarity of language, (d) clarity and consistency of navigation, and (e) provision of content and orientation information. [Table 8](#) presents information about where violations were found in the WPSS and to which heuristic they were associated.

For the first heuristic, **text equivalent provided for all images, audio, and video**, five reviewers identified ten violations. According to four reviewers, text equivalents were missing from several images on the **Entry Page** and montages throughout the WPSS. Alt tags missing from images used to illustrate the featured stories on the **Entry Page** were added to allow individuals who use screen readers to have equal access to the content. The montages used to distinguish components of the WPSS also did not have textual alt tags. The montages were considered page decoration and a text description was unnecessary and in fact could be annoying to individuals who use screen readers. Thus, their alt tags were intentionally left empty so that screen readers would not acknowledge these images when the user the page was accessed.

One reviewer reported that descriptions were missing from areas in the **Info Pages** component of the left navigation menu and the site navigation menu at the top of each page. The **Info Pages** areas without descriptions had not been developed prior to the expert review phase so hyperlinks and title tags to describe them were not present. When the areas are developed, hyperlinks including a description of content in the area will be created. Title tags also were not present in the site navigation menu. Project staff reviewed contents of the sections available from the site navigation menu and added title tags when necessary.

A reviewer who was blind found the text logo repeated at the top of each page “annoying.” The text logo was replaced with a montage that contained an empty alt tag. This allowed a person who uses a screen reader to avoid the montage at the top of each page.

Three reviewers reported violations for the second heuristic, **content is clear without color**. One reviewer noted that she would not have noticed the use of color to identify components if she had not been reviewing the WPSS. This was not deemed a violation because page headers were included to identify the page.

One reviewer with a visual impairment had difficulty with the colors used for the **Viewpoints**, **Info Search**, and **Info Pages** headings. He reported that there was not sufficient contrast between the text and the background. Darker colors were used for these headers to provide more contrast.

Another reviewer with a visual impairment noted that bolder text would have made paragraphs easier to read in the WPSS. Making the text bold was one plausible method for making paragraphs easier to read; however, since the WPSS was designed using style sheets and a user could use browser features to enlarge the font, it was not deemed a violation at this time. The same reviewer reported having difficulty reading white text in the left navigation menu and in the footer at the bottom of the page throughout the WPSS. Since no white text was used within the WPSS, this was classified as an isolated computer-related problem and its cause was unknown.

Four reviewers identified eleven violations against the third heuristic, **simple and clear language**. One reviewer suggested stating the complete title of the Rehabilitation Act in the left navigation menu in the **Disability Rights Laws** area of the **Info Pages** component. One plausible explanation for her confusion was that her Web browser, Netscape, did not recognize the title tags that provided additional information about the subsection areas. No revisions were made to the WPSS based on this feedback, but it was monitored in future evaluation phases.

Two reviewers with learning disabilities reported that there was too much reading required by the WPSS and one reviewer suggested using more bulleted lists or putting highlights on important pieces to aid reading. Project staff reviewed pages in the WPSS to determine if they could be shortened or formatted differently (i.e., use of bulleted lists, horizontal lines, headers, and bold text) to lessen the textual impact and increase the readability of pages in the WPSS and determined that the pages were chunked and formatted appropriately.

One reviewer was confused by the term **Accessible Technology** in the left navigation menu. This area in the **Info Pages** component had not been developed at the present so hyperlinks and title tags to describe it were not present. When the area is developed, hyperlinks including a description of content in the area will be created.

Five reviewers identified 12 violations of the fourth heuristic, **clear and consistent navigation**. A reviewer with a learning disability noted that the convention for links to definitions of vocabulary in the WPSS differed from the other links. Project staff reviewed hyperlinks within the WPSS to ensure that the conventions were consistent.

The discussion forum navigation was an area of concern for another reviewer with a learning disability. She indicated that it does not “stand out” from the site navigation menu above it. The sub-navigation menu was moved to the content area of the page so that this menu was separated from the site navigation menu by a line of color and a different background color.

A third reviewer who was blind found the main body section of the **Entry Page** to be “fairly confusing.” The use of an older version of screen reader software caused the navigation menu and content section of the WPSS to intermix line by line. Since newer versions of screen reader software recognize the use of tables for layout on pages and the older screen reader version had a function that would have reformatted the pages to a linear form, the format of the WPSS was not changed. Information about how to linearize Web pages was added in the **Site Tips** section to assist those using older screen reader software in accessing the content of the WPSS.

The spawning of new windows for external links was confusing for this same reviewer. She was unaware that new windows had opened, which caused difficulties returning to the previous page. All external links contained a title tag that indicated that a new browser window would open. Since the reviewer was encountering problems understanding the text on pages because she was using an older screen reader, it was not clear if this problem was related to these difficulties or not.

For the final heuristic, **context and orientation information provided**, four reviewers reported eight violations. One reviewer with a learning disability found it difficult to find specific information on using the **Viewpoints Index** page and **Entry Page**. One plausible explanation for her difficulties is that the **Site Tips** section was not completely developed prior to the expert review phase. An overview of the WPSS and information about how to use the components of the WPSS was added to this section.

The **Viewpoints** component was an area of violations for another reviewer with a learning disability. She noted that the organization of the **Viewpoints Index** page was “sort of strange.” A description of each story on the page was added to aid users in selecting an appropriate story. A linear format rather than a column format also was implemented to clarify the organization of this page.

Several reviewers reported confusion over the format of the stories in the **Viewpoints** component. One reviewer was unclear about who was being quoted on story pages. Another reviewer indicated that, because all of the pages within a story begin with the same paragraph, all pages appear to be the same information at a cursory glance. A phrase that identified the speaker of the quote was added at the beginning of each story to help orient the user. In addition, the format of the response pages for stories was changed from a similar page with additional information to a page that opened in a new Web browser window and contained the response selected by the user.

For a reviewer with a visual impairment, the search pages in the **Info Search** component and the **Site Search** were difficult to use because the cursor did not appear in the form box when the page was accessed. Again, this reviewer was encountering problems understanding the text on pages due to the use of an old screen reader so it was not clear if this problem was related to these difficulties or not.

In the second section of the accessible design analysis survey, reviewers were asked to rate the overall quality of the content provided in the WPSS. The WPSS was rated on four dimensions: (a) appropriateness for postsecondary personnel, (b) representation of current practice, (c) accuracy of information, and (d) feasibility of implementation. [Table 9](#) presents the reviewers' responses to this section of the survey.

All reviewers, except one individual with a learning disability, agreed that the WPSS was appropriate for postsecondary personnel. This reviewer commented that it was very difficult to find information in the WPSS. Another reviewer stated the WPSS is a "wonderful tool for postsecondary personnel." A third reviewer expressed that while the content of the WPSS was appropriate and relevant, its applicability depended on the "user's background, experience, discipline, and purpose." According to a fourth reviewer, participants should be able to connect and find answers based on a range of "accommodation attitudes."

Reviewers agreed that the information in the WPSS was current. One reviewer commented that the WPSS portrayed "the breadth of ideas concerning accommodations;" a sentiment echoed by another reviewer. Two reviewers expressed an appreciation of the up-to-date laws listed in the WPSS. While a final reviewer found

the information current and relevant, she commented that she was “surprised” not to see a section on assistive technology in the WPSS.

All of the reviewers agreed that the information in the WPSS was accurate. One reviewer stated that the WPSS clearly explains the need to listen to the student and to employ a team approach in provision of accommodations. According to a second reviewer, the **Viewpoints** component, in particular, seemed to represent a “best practices” orientation.

The majority of reviewers agreed that the WPSS was likely to enhance the provision of accommodations. It should be noted that the one individual with a learning disability indicated that the WPSS was not likely to enhance the provision of accommodations. This is the same reviewer that reported the WPSS was not appropriate for postsecondary personnel. She reported that she could not find information using the WPSS. Another reviewer commented, “It depends on how many people know about it. If everyone were completely aware of it and utilized it, it would be a great thing.” This sentiment was echoed by three other reviewers who indicated it depended on the “sensitivity” or “starting perspective” of the user. A fifth reviewer commented, “If well advertised to all interested parties, the UK-ED WPSS should serve as a solid foundation which can be used by disabled students to address instructor issues, as well as for instructors who feel a disabled student is making an unreasonable request.”

The majority of reviewers agreed that use of the WPSS in the accommodation process was very feasible. One stated that she did not know and a second noted its use “depends on many external factors that have little to do with the WPSS itself.” According to the reviewer who rated use of the WPSS as not feasible, she could not find information using the WPSS. Another reviewer commented the WPSS “gives ‘boundaries’ and lets you know what is out there.” The WPSS was viewed by two reviewers as useful for raising awareness and training personnel. A final reviewer appreciated that the WPSS clarifies that accommodations are not special treatment and are entitled to student with disabilities.

The third and final section of the accessible design analysis survey contained four open-ended questions. These questions invited reviewers to discuss the strengths

and weaknesses of the WPSS, recommend improvements that should be made to it, and provide additional comments. [Table 10](#) presents the comments made by reviewers in this section of the survey.

All 15 reviewers discussed the strengths of the WPSS. One reviewer saw the WPSS as a “starting point for people with questions” about accommodation. Eleven reviewers commented on the wealth, accuracy, and usefulness of information and links contained in the WPSS. The ease of navigation was seen as a strength of the WPSS by three reviewers and the use of color was noted as a strength by two other reviewers. Four reviewers expressed that the different viewpoints and personal stories shared were helpful. According to another reviewer, the information was easy to read and understand. The **Info Search** component was a “much needed” area according to one reviewer. Two reviewers appreciated the ability to join discussion forums via the WPSS. A final reviewer commented that “simply the fact that it’s being done... is a huge help to students with all types of problems.”

Eight reviewers discuss weaknesses of the WPSS. One reviewer commented that the WPSS could be “dicey for a visually impaired person to navigate.” The use of an older version of screen reader software caused the navigation menu and content section of the WPSS to intermix line by line for this reviewer. Since newer versions of screen reader software recognize the use of tables for layout on pages and the older screen reader version had a function that would have reformatted the pages to a linear form, the format of the WPSS was not changed. Information about how to linearize Web pages was added in the **Site Tips** section to assist those using older screen reader software in accessing the content of the WPSS.

A second reviewer viewed the use of white lettering in the left navigation menu and footer on pages as a weakness. Since no white text was used within the WPSS, this was classified as an isolated computer-related problem and its cause was unknown.

The navigation was seen as “cumbersome” and “tedious” by a third reviewer because there were a lot of submenus and text presented in the WPSS. Another reviewer found certain page as being “overly busy” or having “a lot of reading”. Project staff reviewed pages in the WPSS to determine if they can be shortened or formatted

differently (i.e., use of bulleted lists, horizontal lines, headers, and bold text) to lessen the textual impact and increase the readability of pages.

Two reviewers wanted more forums, especially one for students, to be added to the WPSS. Since the WPSS was designed for postsecondary personnel, a discussion forum for students did not seem appropriate, but project staff planned on adding additional forums that correlate to topical areas in the future.

According to a fourth reviewer, the **Entry Page** is “filled with ambiguity” and “makes one wonder why they are reading it.” Since the **Entry Page** was intentionally designed for two types of users: (a) those who know exactly what information they want to locate and (b) those who prefer to browse, changes were not deemed necessary at this time. A brief introductory message, however, was added to the **Entry Page** to inform users about the purpose of the WPSS.

A fifth reviewer noted the lack of text equivalents for images as a weakness. Alt tags missing from images used to illustrate the featured stories on the **Entry Page** were added to allow individuals who use screen readers to have equal access to the content. The montages used to distinguish components of the WPSS also did not have textual alt tags. The montages were considered page decoration and a text description was unnecessary and in fact could be annoying to individuals who use screen readers. Thus, their alt tags were intentionally left empty so that screen readers would not acknowledge these images when the user the page was accessed.

This reviewer also was concerned that the WPSS lacked concrete directions on how faculty should respond when approached about accommodation. While this was important information, all areas in the **Info Pages** component were not developed prior to this phase. One future area was to be focused on the topic of **Instructional Accommodation**, which will include pertinent information for faculty members.

Seven reviewers recommended improvements that should be made to the WPSS. Two reviewers' comments focused on ensuring that information about the WPSS was shared with postsecondary personnel and students with disabilities. One reviewer suggested lessening the number of links and titles included on each page. While the number of links was not lessened, the text logo was removed from each page, which lessened the number of titles on each page.

A second reviewer felt the navigation and content should be simplified. In order to achieve this goal, the reviewer suggested having a brief description appear when the cursor is positioned over navigation menu items and reviewing sections for consistency of format. Title tags were included for all hyperlinks in the left navigation menu. The **Info Pages** areas had several areas listed that had not been developed prior to the expert review phase so hyperlinks and title tags to describe them were not present. When the areas are developed, hyperlinks including a description of content in the area will be created. Title tags also were not present in the site navigation menu. Project staff reviewed contents of the sections available from the site navigation menu and added title tags when necessary.

The same reviewer also suggested creating a page of links with brief descriptions for topical areas rather than having the search page serve up a page of search hits. This seemed to contradict the purpose of including a search engine within the WPSS so it was not deemed necessary by project staff.

The same reviewer also suggested the use of complementary video and off line activities to correspond to the **Viewpoints** section. While this was an excellent suggestion for others to enhance training of postsecondary personnel, it did not seem to be related to the purpose of the WPSS, which was to provide information to postsecondary personnel when desired.

Finally, this reviewer felt that the **Tips** area of the **Site Help** section seemed “incomplete.” This feedback was reasonable since the **Site Tips** section was not completely developed prior to the expert review phase. An overview of the WPSS and information about how to use the components of the WPSS was added to this section to make it more complete.

A third reviewer suggested losing the “magazine touch” of the **Entry Page** and gearing it towards a “question and answer format.” A fourth reviewer also recommended making the objective of the WPSS clearer to the user. Since the **Entry Page** was intentionally designed for two types of users: (a) those who know exactly what information they want to locate and (b) those who prefer to browse, changes were not deemed necessary at this time. A brief introductory message, however, was added to the **Entry Page** to inform users about the purpose of the WPSS. In addition, a **FAQ**

section was added to the WPSS to accommodate users who prefer a question and answer format.

According to the fourth reviewer, the WPSS needed clearer directions for faculty members and administrators on ways they can help. While this was an accurate assessment of the current WPSS, all areas in the **Info Pages** component were not developed prior to this phase. Future areas were to be focused on the topics of **Instructional Accommodation** and **Etiquette**, which will include pertinent information for faculty members and administrators.

A fifth and sixth reviewer recommended adding more resources (e.g., companies who provide personnel care attendants, sites with “real information”) in the **Info Search** component. This recommendation was valid; however, the **Info Search** component only included information related to the topical areas (i.e., law and policy) developed within the **Info Pages** component. As new areas are developed in the **Info Pages** component, more resources will be added to the **Info Search** component.

A final reviewer indicated that categorizing disability types and accommodations would facilitate answer finding. In designing the WPSS, project staff intentionally avoided organizing the WPSS based on categorical labels. Since each person with a disability has different strengths and weaknesses, the WPSS was designed using the functional model (Blackhurst & Lahm, 2000) as an underlying theme. If personnel determine accommodation based on this model, emphasis will be placed on the requirements of the environment and the needs of the individual, rather than the most common accommodations for the type of disability.

Eight reviewers provided additional comments about the WPSS. One reviewer commented the WPSS would be a “dynamite site” after a few technical problems were corrected. The WPSS was seen as “comprehensive” and containing “valuable information” by a second reviewer. A third reviewer felt it should be required for faculty. The need for a well-developed dissemination plan was a concern for two reviewers. Two other reviewers noted the layout made navigation “easy and straight-forward”. A final reviewer commented that the WPSS would be “beneficial to students, parents, faculty and staff.”

Summary. Reviewers generally agreed that the WPSS contained information about current and best practice in the field. Reviewers generally agreed that use of the WPSS was feasible and enhanced the accommodation of postsecondary students with disabilities. Finally, reviewers generally agreed that the WPSS was appropriate for postsecondary personnel.

Reviewers, however, reported difficulties related to missing alt and title tags, insufficient contrast between foreground and background colors, lengthy pages, navigation, and missing contextual and orientation information. Eleven actions were undertaken to resolve problems reported by individuals with disabilities. First, alt tags were added to images used to illustrate the featured stories on the **Entry Page** to allow individuals who use screen readers to have equal access to the content. Second, title tags were added to the site navigation menu so that the contents of available sections were clearly described. Third, the text logo was replaced with a montage with an empty alt tag so that screen readers would ignore this page decoration. Fourth, darker colors were used for section headers on pages to provide more contrast between the foreground and background. Fifth, project staff reviewed the format of pages to determine if they could be shortened or formatted differently to lessen the textual impact. Sixth, hyperlinks within the WPSS were reviewed to ensure that their format was consistent. Seventh, sub-navigation menus were moved into the page content area so that it was separated from the site navigation menu by a line of color. Eighth, information about how to linearize Web pages, an overview of the WPSS, and information about how to use the components of the WPSS was added to the **Site Tips** section. Ninth, the **Viewpoints Index** page was changed to a linear format. Tenth, a phrase was added to identify the speaker at the beginning of each quote on **Viewpoints** story pages. Finally, the format of the response pages for stories was changed to a page that only contained the response selected by the user in a new Web browser window.

Revisions Made in the WPSS

After all data were collected during the expert review phase, violations, ratings, and comments were analyzed to determine improvements needed in the WPSS. A report of current data was shared with project staff each week. Project staff discussed

the data and then rated them based on their relevancy and urgency. Because ratings on Likert-type scale questions were positive, particular emphasis was placed on violations reported and comments made by reviewers.

Based on data, several changes were made to the navigation menus in the WPSS. First, problems noted by reviewers regarding the inconsistent rendering of the menus on individual pages were corrected. Next, title tags were added to all items on site navigation menu at the top of the page. These title tags allow the user to know the contents of the section when the cursor is positioned over the hyperlink. The **Tips** hyperlink in the site navigation menu was changed to **Site Tips** to clarify the type of tips being provided. To better identify the page location within the WPSS, the white rectangle with purple text used as a highlight on the navigation menus was changed to a black rectangle with yellow text. Finally, the navigation menu provided within subsections of content areas was separated from the site navigation menu at the top of the page by placing it in below the colored line instead of above it. [Figure 8](#) illustrates changes made to the site navigation menu after the expert review phase.

Another component of the WPSS that required revision was the **Viewpoints** component. First, specific problems with text in link boxes on the right side of the page being cutting off were corrected. Next, content was added to the response for Student 4 in the **Balancing Acts** story so that the context of the quote was clearer to the user. The format of the **Viewpoints Index** page was changed to provide more information about the various story options. [Figure 9](#) illustrates the change in format for the **Viewpoints Index** page.

To remove possible confusion among users, the link to the **Viewpoints Index** page was removed from the subsection navigation menu. This was deemed necessary because the **Viewpoints Index** page was at a different level in the WPSS than the other hyperlinks on the navigation menu. The person being quoted on story pages in the **Viewpoints** component were identified to clarify the content for the user.

The format of response pages for stories in the **Viewpoints** component was revised based on data collected during the expert review phase. Several design experts and individuals with disabilities expressed confusion and frustration over being taken to a response page that was almost identical to the selection page except for the inclusion

of a discussion related to the response selected. Thus, the page format for response pages was changed from a page similar to the selection page to a new and smaller page with only the response and related links that opened in a new browser window. [Figure 10](#) illustrates the new format for the story response page. Finally, the types of links listed in link boxes on the response pages were categorized to provide the user with additional information prior to selection. This change made link boxes in the **Viewpoints** component consistent with those provided in the **Info Pages** component.

Recommendations and comments by reviewers led to a revision in the design of the WPSS. The logo was removed from the top of pages and a montage was included for all pages within a section instead of only the first page in a content area. This revision was deemed necessary for several reasons. Reviewers found the use of the montage and logo on section pages to be distracting and to require too much space. Several reviewers were disconcerted by the appearance of the montage on the section page and its “disappearance” in the subsections. The removal of the logo also eliminated its associated text, which was “annoying” to a reviewer using screen reader software. [Figure 8](#) illustrates the change in the use of montages on individual pages in the WPSS.

Revisions were made to headers used within the WPSS to provide more contrast and to clarify the presence of hyperlinks. First, the titles for **Viewpoints** stories on the **Entry Page** were changed to hyperlinks. Several reviewers assumed the blue titles were hyperlinks and expressed frustration and confusion regarding their use. While only one reviewer commented on the lack of contrast between the background and subsection headers, it was determined to be a necessary revision because the reviewer had a visual impairment. The lighted subsection headers on content area pages were changed to the color of the section headers to provide more contrast between colors for the use. Finally, alt tags were added to the images on **Entry Page** that served as a visual representation for the story options. The inclusion of the alt tags provided a text equivalent to these images for those users accessing the WPSS using screen reader software.

Based on analysis of the data, information was added to the **Site Tips** area of the WPSS. An overview section was added to this area to provide the user with more

information about the components of the WPSS. In addition, information about the features of the individual components (i.e., **Info Pages**, **Info Search**, **Express Yourself**, and **Viewpoints**) was included to aid the user's understanding and use of the WPSS.

One-to-One Phase

In this section, the results for the one-to-one phase, which answer the last three research questions, are presented along with a discussion of these results. In addition, revisions made to the evaluation instruments and the WPSS based on the results from this phase are described.

As discussed in the methods section, the one-to-one phase of the formative evaluation was conducted with three groups of on the UK campus: (a) five academic administrators, (b) five instructional personnel, and (c) five auxiliary service administrators. During individual sessions, fifteen users from the target audience responded to one of three in-session questionnaires, with seven similar, but not identical, short answer questions designed for each constituent group ([Appendix F](#)). On the in-session questionnaire, users were required to provide the beginning and ending time for each question along with their response. While users completed the questionnaire, the investigator completed a tracking form ([Appendix H](#)) to trace the path users followed through the WPSS to locate their responses and a bug report form ([Appendix I](#)) to record errors reported by users. At the end of each evaluation session, users completed a post-session survey ([Appendix G](#)) on-line and submitted it to the investigator electronically.

Ten users viewed the WPSS on a Windows computer, four users used a Macintosh computer, and one user did not report the computer platform used to view the WPSS. Six users viewed the WPSS using the Internet Explorer Web browser, eight users used the Netscape Web browser, and one user did not report the Web browser used to view the WPSS.

Research Question #4: According to Representatives of the Target Population, Was the WPSS Effective in Providing Information About Accommodating Students with Disabilities in Higher Education?

To determine the effectiveness of the WPSS in providing information about accommodation, data were collected from in-session questionnaires completed by targeted users on the UK campus and the pathway chart completed by the investigator while the user completed the in-session questionnaire.

[Table 11](#) presents the results of all users' responses to the in-session questionnaire. Instructional personnel and academic administrators obtained a mean score of 90% on the in-session questionnaire, while auxiliary service administrators obtained a mean score of 80%. All three groups responded correctly to the first question on the in-session questionnaire, which required the user to explore the **Info Pages** component of the WPSS for campus policy. For Question 2, which required the user to explore the **Info Pages** component of the WPSS to locate the process for determining whether an accommodation is reasonable, instructional personnel performed better than the academic and auxiliary service administrators (i.e., accuracy rate of 90%, 70%, and 50% respectively). Academic administrators and auxiliary service administrators responded with a 100% accuracy rate on Questions 3, 4, and 5 on the in-session questionnaire, while instructional personnel obtained accuracy rates of 90%, 80%, and 90% on these three questions. For Question 6, which required the user to explore the **Express Yourself** component of the WPSS for information about discussion forums, instructional personnel obtained a mean score of 80%, academic administrators obtained a mean score of 60%, and auxiliary service administrators obtained a mean score of 20% in locating information about discussion forums in the WPSS. While instructional personnel and academic administrators responded with a 100% accuracy rate on the final question, which required the user to explore the **Viewpoints** component of the WPSS for students' viewpoints, auxiliary service administrators obtained an accuracy rate of 90%.

[Table 11](#) also illustrates the number of pages viewed to locate responses to questions on the in-session questionnaire. Users viewed an average of 6.5 pages per question to locate responses to the in-session questionnaire. While both groups of

administrators, academic and auxiliary service, viewed nearly identical mean numbers of pages per question to locate responses (i.e., a mean of 7.3 pages and 7.2 pages respectively), instructional personnel viewed a mean of 4.9 pages per question to locate responses to the in-session questionnaire.

The average number of pages viewed by users to respond to the first question, which required the user to explore the **Info Pages** component of the WPSS for campus policy, on the in-session questionnaire was 4.3 pages. The mean number of pages viewed by auxiliary service administrators was inflated because one administrator viewed nine pages to locate a response. Instructional personnel, however, viewed approximately twice as many pages as the both groups of administrators to locate a response.

For Question 2, which required the user to explore the **Info Pages** component of the WPSS for the process to determine whether an accommodation is reasonable, the average number of pages viewed by all users was 4.5 pages. Auxiliary service administrators viewed twice as many pages (i.e., a mean of 6.6 pages) as instructional personnel and academic administrators (i.e., a mean of 3.2 pages and 3.6 pages respectively) to locate a response to this question.

For the third question on the in-session questionnaire, which required the user to explore the **Info Pages** component for information about disability rights laws and legal cases, users viewed an average of 5.3 pages in order to respond to this question. While auxiliary service administrators viewed an average of three more pages than the other two constituent groups to locate a response, the mean number of pages viewed by this group was inflated because one administrator viewed nine pages locating a response to Question 3.

Users viewed an average of 6.4 pages for Question 4, which required the user to explore the **Info Search** component of the WPSS to locate literature related to the scenario presented at the beginning of the in-session questionnaire. Auxiliary service administrators viewed a mean of 5.2 pages and academic administrators viewed a mean of 6.6 pages. Instructional personnel viewed the most pages (i.e., mean of 7.4 pages), even though the mean number of pages viewed by academic administrators

and auxiliary service administrators were inflated (i.e., 14 pages for one academic administrator, 13 pages for one auxiliary service administrator).

The fifth question required users to explore the **Services and Experts** area of the **Info Search** component to find UK personnel who might be able to provide assistance in the scenario presented at the beginning of the in-session questionnaire. For this question, auxiliary service administrators explored an average of two more pages than the academic administrators and an average of five more pages than instructional personnel to locate a response. However, the average number of pages viewed by auxiliary service administrators was inflated because one administrator viewed 26 pages to locate a response to Question 5.

For the sixth question on the in-session questionnaire, which required the user to explore the **Express Yourself** component of the WPSS, the average number of pages viewed by users was 11.3 pages. While instructional personnel viewed a mean of 5.8 pages to locate a response to this question, academic administrators viewed a mean of 15.6 pages and auxiliary service administrators viewed a mean of 12.6 pages to locate a response. The average number of pages viewed by auxiliary service administrators and academic administrators were inflated because one auxiliary service administrator viewed 21 pages and one academic administrator viewed 36 pages to locate a response to this question.

The final question on the in-session questionnaire required users to explore the **Viewpoints** component of the WPSS for students' viewpoints. Users viewed an average of 7.2 pages in the WPSS in order to respond to the final question. Instructional personnel viewed a mean of 4.2 pages, auxiliary service administrators viewed a mean of seven pages, and academic administrators viewed a mean of 10.4 pages to locate a response. The average number of pages viewed by auxiliary service administrators and academic administrators were inflated because one auxiliary service administrator viewed 15 pages and one academic administrator viewed 27 pages to locate a response to this question.

When analyzing data for specific questions on the in-session questionnaire, the WPSS was more effective at providing certain information (i.e., campus policy, legal cases, and campus services). The accuracy rate was high and mean number of pages

viewed was low for Questions 1, 3, 4, and 5. Consequently, no changes were made in the WPSS areas that provided information about campus policy, legal cases, and campus services.

While the mean number of pages viewed was low for the second question, the accuracy rate for users also was low. To improve the effectiveness of the WPSS to deliver information about whether an accommodation is reasonable, a **FAQ** section was added to the WPSS that provided specific information and a direct link to the areas in the **Info Pages** component related to this topic.

The accuracy rate was low and the mean number of pages viewed was high for the sixth question. While the mean number of pages viewed by both groups of administrators was inflated, nine users viewed ten or more pages in order to locate a response. Three actions were taken to facilitate use of the **Info Exchange** component. First, the **Info Exchange** component was renamed **Express Yourself** to more accurately identify the location of the discussion forums in the WPSS. Second, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to this component to guide users in its use. Third, the **UK-ED forums** were adjusted to better reflect how users might wish to interact. For example, topic forums such as **Law and Policy** were replaced with campus-specific forums such as **UK/LCC** and **KCTCS**.

For Question 7, the accuracy rate for users was high, but so was the mean number of pages viewed. While the mean number of pages viewed by both groups of administrators was inflated, nearly a third of the users viewed ten or more pages to locate a response to this question. Two actions were taken to facilitate use of the **Viewpoints** component. First, the **Viewpoints** component was renamed **Viewpoints Index** on the navigation menu on the left side of each page in the WPSS to provide users with better clarification about the nature of the **Story Index** page. Second, an introductory paragraph was added to the **Story Index** page to provide users with an overview of the section.

Summary. The WPSS was effective in providing information to personnel on the UK campus. All three constituent groups obtained an accuracy rate of 80% or higher on

the in-session questionnaire. In addition, users viewed an average of 6.5 pages per question to locate responses to the in-session questionnaire.

When analyzing data for specific questions on the in-session questionnaire, the WPSS was more effective at providing certain information (i.e., campus policy, legal cases, and campus services) than other information (i.e., reasonable accommodations, discussion forums, and perspectives on disability issues). To improve the effectiveness of the WPSS in providing information to postsecondary personnel, six actions were taken. First, a **FAQ** section was added to the WPSS, which provided specific information and a direct link to the areas in the **Info Pages** component related to these topics. Second, the **Info Exchange** component was renamed **Express Yourself**. Third, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component. Fourth, the **UK-ED forums** were adjusted to better reflect how users might wish to interact. Fifth, the **Viewpoints** component was renamed **Viewpoints Index** on the navigation menu on the left side of each page in the WPSS. Sixth, an introductory paragraph was added to the **Story Index** page to provide users with an overview of the section.

Research Question #5: According to Representatives of the Target Population, How Did Users Perceive the WPSS?

To determine the perception of users about the WPSS, data were collected from users via a post-session survey. The post-session survey was divided into four sections. Three survey sections focused on the **Info Pages**, **Info Search**, and **Viewpoints** components of the WPSS. Items in the first three sections of the survey were questions to which the user could respond using a 3-point Likert-type scale. Users were invited to write comments at the end of each section. The final section included questions designed to elicit open-ended responses to general questions about the strengths and weaknesses of the WPSS.

The users were asked to assess the **Info Pages** component of the WPSS with respect to the elements of motivation, design, and navigation. [Table 12](#) presents reviewers' responses to the first section of the post-session survey. Users rated the page layout as attractive and the navigation features as helpful. All one-to-one users agreed that the content of the **Info Pages** component was easy to understand, held

their interest, and was useful in their professional activities. Nearly all of the users agreed that the content was clearly organized. The only negative rating in this section of the post-session survey came from an instructional employee who commented that he did not like many Web sites.

At the end of the first section, ten users made comments about the **Info Pages** component of the WPSS. While some of the comments made by users were related to the **Info Pages**, many of the comments made by users discussed other components of the WPSS. Comments related to other sections will be discussed later in this section. Only those related to the **Info Pages** component will be addressed below.

Six users made comments specific to the **Info Pages** component. One user rated it as “worthwhile” and as a “needed resource.” While this user praised the **Cases Index** area of the **Info Pages** component, another user was “baffled” by this area. The navigation was a point of discussion for several users. One user stated that it was “very intuitive.” and another felt there were “hyperlinks in the right places.” Two users indicated that the section would be useful in the future. Finally, a user stated that the organization of the **Info Pages** component allowed one to “get to the point” quickly. Based on these data, no changes were required in the **Info Pages** component of the WPSS.

In the second section of the post-session survey, users were asked to assess the **Info Search** component of the WPSS with respect to the elements of motivation, design, and navigation. [Table 13](#) presents the users’ responses to this section of the post-session survey. Nearly all of the one-to-one users agreed that the keyword search feature was easy to use and retrieved relevant and useful information. The majority of users liked the format of the search pages and retrieved information. Nearly all one-to-one users agreed that the topical listings were useful and the navigation features were helpful. All seven negative ratings in this section of the survey came from two users, the instructional employee who provided the only negative rating in the first section of the survey and an academic administrator who commented that the format of the **Info Search** component was confusing.

At the end of the second section, seven users made comments about the **Info Search** component of the WPSS. While one user reported that the amount of

information seemed appropriate, two users commented there were too many links provided in the **Info Search** component. They found it to be “overwhelming” and “very confusing.” Another user appreciated the topical listings and that results included an abstract or short description of the item. Improving user knowledge of the component by pointing it out on the **Entry Page** was the recommendation of a user. A final user commented that the **Info Search** component was “user friendly.” In comments about the **Info Pages** component, one user suggested adding a way to search the WPSS because “faculty will not want to spend time wading through the info” and two users recommended using a different format in the **Related Literature** area. While users were generally positive about this component, one change was made to it. The HTML code associated with search boxes was modified to narrow the search results provided by the UK search engine.

In the third portion of the post-session survey, users were asked to assess the **Viewpoints** component of the WPSS with respect to the elements of motivation, design, navigation, and media. [Table 14](#) presents the users’ responses to this section of the post-session survey. All users agreed that the stories held their interest and caused them to explore their attitudes about disabilities and accommodation. In addition, all users agreed that the navigation features were helpful. The majority of users agreed that the story responses opening a new window was useful, that the media did enhance the content in this section, and that they liked the story page format a lot. Half of the negative ratings in this section of the post-session survey came from the same two users who provided the negative ratings in the previous two sections of the survey.

At the end of the third section, eight users made comments about the **Viewpoints** component of the WPSS. All users, except one auxiliary service administrator, expressed an appreciation of the stories in this component. This auxiliary service administrator thought the component indicated “more subjective” information and would not be an area she would recommend to search for information on disabilities. One user commented that every new university employee should read these stories to “open their minds.” Another user reported that the stories made the WPSS “come to life” and would serve as motivation to others to resolve accommodation problems. An academic administrator’s comment echoed this sentiment. He indicated

that this section would encourage faculty members to help students with disabilities. According to another user, the audio used to enhance the content was “pretty powerful.” In the **Info Pages** component of the survey, one user commented that while the **Viewpoints** component was helpful, she would not “gravitate toward [it] for [an] objective info search,” and another user suggested that the titles to the stories needed to be as “descriptive and suggestive as possible.” Based on these data, no changes were required in the **Viewpoints** component of the WPSS.

The fourth and final section of the post-session survey contained four open-ended questions. These questions invited users to discuss the strengths and weaknesses of the WPSS, recommend improvements that should be made to it, and provide additional comments. [Table 15](#) presents the comments made by user in this section of the survey.

All users discussed strengths of the WPSS. The WPSS was seen as “meeting an important need” and “crucial” to the University. The format of the WPSS was a point of discussion for several users. The design of the WPSS was deemed “visually inviting” by three users. One user stated that the variety of formats provided was “bound to appeal to a number of users with different learning needs.” Another user commented that the WPSS was both “formal and personal.”

Twelve users commented on the information included within the WPSS. According to users, the information was well organized, comprehensive, succinct, and useful for a variety of users. One user called the WPSS a “wonderful clearinghouse of information.” The navigation features were a source of comment for seven users. Users found the WPSS to be easy, clear, and intuitive. One user commented that the major section headings provided a “sense of comfort” with the WPSS. Two users indicated that the **Viewpoints** component was a strength of the WPSS, one user valued the **Express Yourself** component, and three users expressed an appreciation of the resources included in the **Info Search** component.

Ten users discussed weaknesses of the WPSS. One faculty member recommended adding a search feature to the WPSS. Since the WPSS had three searchable areas in addition to the site search feature, it was unclear why this user made this recommendation.

An administrator suggested the addition of a **FAQ** section with intervention tips and campus-specific resources. According to another user, it seemed to take a considerable amount of time to find straightforward answers. The most pertinent information was currently provided in a question and answer format within the **Faculty Guide** in the **About Us** section of the WPSS. Based on these recommendations, information from the **Faculty Guide** in the **Publications** area of the **About Us** section was converted to a **FAQ** section.

Two users indicated they were “confused” by the **Entry Page** and were not clear what would be found in each section. To clarify the information available to the user, a brief description of the components of the WPSS was added to the **Entry Page**.

One administrator found the progressive levels of details in the **Info Pages** component “confusing or overwhelming.” The WPSS was intentionally developed with progressive levels of details to meet the needs of novice users as well as knowledgeable users.

The **Info Exchange** component confused several users. One user expressed uncertainty about whether it was more general information or campus-specific. Another user suggested making it clear that messages in the discussion forums could be anonymous. In order to improve this section of the WPSS, two changes were made: (a) a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the section and (b) **UK-ED forums** were adjusted from topic forums to campus-specific forums.

Three users reported technical problems. One administrator had difficulty locating campus resources using the **Info Search** component. This was an isolated problem and the cause was unknown.

Another administrator noted that some links in the navigation menu on the left side of pages in the WPSS were not working. Since several areas in the **Info Pages** component had not been developed prior to the one-to-one phase, they were not working hyperlinks. When these areas are developed in the future, hyperlinks will be added to the left navigation menu.

A faculty member expressed concern about connection speed and having the correct plug-ins. The WPSS was designed with a limited amount of multimedia pieces to

improve the connection speed. In addition, project staff created and tested the audio files in the WPSS to ensure that they would be operational with the most popular media applications currently available.

Twelve users recommended improvements that should be made to the WPSS. One administrator was concerned about whether the text was large enough for individuals with visual impairments to view. Since the WPSS was designed using style sheets and a user could use browser features to enlarge the font, project staff did not implement this recommendation.

Another administrator recommended adding more graphics to aid navigation. This recommendation was not acted upon for two reasons. First, the number of graphics was limited in the WPSS to improve the connection speed. Second, colored lines and montages at the top of pages along with highlights on the navigation menus were used to help users identify the location of the page.

Clarification of internal and external links in the Netscape Web browser was a recommendation of a faculty member who participated in this evaluation phase. While external and internal links in link boxes were differentiated, the Netscape Web browser does not recognize title tags, which were used to identify external links embedded in content. All external links, however, were coded to open in a new Web browser window so that users would be provided with a visual cue that an external link has been accessed and could easily return to the prior location.

An administrator suggested changing the name of the **Info Exchange** component. To clarify the purpose of the **Info Exchange** component, its name was changed to **Express Yourself**.

Several users' comments focused on additions to the WPSS. Two users suggested including a **FAQ** section to aid in finding answers to straightforward questions quickly, two users suggested the addition of a listing of campus resources with contact information and a brief description, and one user recommended adding a **Glossary** section to the WPSS. Since the WPSS contained a **Faculty Guide** in the **Publications** area in the **About Us** section which was not be accessed by users, it was converted to a **FAQ** section containing questions and answers and a listing of campus resources that was placed in the site navigation menu. While only one user

recommended a **Glossary** section, it was deemed a worthwhile addition because it would allow campus personnel to understand terminology related to accommodation.

Four users made recommendations for improving the **Info Search** component. Instructional personnel suggested adding a hyperlink to the emails of key resource people at the Disability Resource Center and organizing listing in the **Related Literatures** area topically. An administrator recommended reorganizing the campus resources in the **Services and Experts** area. The basis of these recommendations was unclear since a hyperlink was provided in the **Disability Resource Center** entry page, the **Related Literature** search page contained topical listings that the user could explore, and the campus resources in the **Services and Experts** area were organized as a search results list by the UK search engine.

Another administrator suggested that the search results be narrowed down. The HTML code associated with search boxes on the **Site Search** page and search pages in the **Info Search** component was modified to narrow the search results provided by the UK search engine.

This same user also recommended adding leading phrases to guide users on where to go for information in the WPSS. To clarify information available to the user, a brief description of the components of the WPSS was included in the content area on the **Entry Page**. In addition, stories from the **Viewpoints** component were identified through the inclusion of a header called **Feature Stories**.

Nine users provided additional comments about the WPSS. Several users expressed interest in using the WPSS in the future. Five administrators discussed the value of the WPSS. One administrator commented that the WPSS had the “makings of a very valuable instrument for faculty and staff to address their questions.” Another administrator saw the WPSS as a “valuable service to our entire university community.” A third administrator noted its value for students, while a fourth administrator commented on its usefulness for faculty and students. A fifth administrator noted that the WPSS was “very user friendly.” This same administrator commented on the use of graphics in the WPSS. She indicated that the graphics gave the WPSS an “appealing look” and made the subject more “real.”

Summary. Users generally agreed that the **Info Pages** component was attractive, easy to navigate and understand, interesting, clearly organized, and useful in their professional activities. With regard to the **Info Search** component, users also agreed that the keyword search feature was easy to use, the retrieved information was relevant and useful, the format of the search pages and retrieved information was acceptable, the topical listings were useful, and the navigations features were helpful. Users agreed that the **Viewpoints** component held their interest, caused them to explore their attitudes about disabilities and accommodation, and was easy to navigate. Finally, users agreed that the story responses opening a new window was useful, that the media enhanced the content, and that they liked the story page format in the **Viewpoints** component. Users' perceptions of the WPSS were generally positive and nearly all of the negative ratings on the post-session survey (i.e., ten out of 12) were attributed to two users, one academic administrator and one instructional employee.

Analysis of user comments on the post-session survey, however, indicated that there were areas in the WPSS that required revision. Based on these data, eight actions were taken by project staff to improve the WPSS. First, the HTML code associated with search boxes in the **Info Search** component was modified to narrow the search results provided by the UK search engine. Second, information from the **Faculty Guide** in the **Publications** area of the **About Us** section was converted to a **FAQ** section. Third, a brief description of the components of the WPSS was added to the **Entry Page**. Fourth, the **Info Exchange** component was renamed **Express Yourself**. Fifth, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component. Sixth, the **UK-ED forums** in the **Express Yourself** section were adjusted from topic forums to campus-specific forums. Seventh, a **Glossary** section was added to the site navigation menu. Eighth, stories from the **Viewpoints** component were identified through the inclusion of a header called **Feature Stories** on the **Entry Page**.

Research Question #6: According to Representatives of the Target Population, What Difficulties Did Users Encounter While Interacting with the WPSS?

To assess the difficulties users encountered while interacting with the WPSS, data were collected during the individual evaluation sessions. Users recorded the time

when they began to locate an answer and when they ended responding to the question on in-session questionnaires. The investigator also used a bug report form ([Appendix I](#)) to note errors in the WPSS reported by users during individual sessions. In addition, each session was tape recorded and transcribed so that user comments could be analyzed after the session.

[Table 16](#) presents the amount of time required by users to respond to questions on the in-session questionnaire. The average amount of time per question required by users to locate responses on the in-session questionnaire did not appear to reflect any difficulties during the one-to-one phase. Instructional personnel spent an average of 2.9 minutes per question, academic administrators spent an average of 3.8 minutes per question, and auxiliary service administrators spent an average of 3.9 minutes per question exploring the WPSS to locate responses to the in-session questionnaire.

Users spent a mean of 3.2 minutes locating a response to the first question on the in-session questionnaire, which required the user to explore the **Info Pages** component of the WPSS to locate campus policy. The mean number of minutes spent locating a response was inflated because an instructional employee required eight minutes and an academic administrator required seven minutes to locate a response to this question.

For Question 2, which required the user to explore the **Info Pages** component of the WPSS for the process to determine whether an accommodation is reasonable, the average amount of time required for all one-to-one users to respond the question was 2.9 minutes. Again, the mean number of minutes spent locating a response was inflated because the same instructional employee required seven minutes to locate a response to the second question.

One-to-one users required an average of 3.3 minutes to find an answer to the third question on the in-session questionnaire, which required the user to explore the **Info Pages** component of the WPSS for disability rights laws and legal cases to support their opinion about the request accommodation in the scenario at the beginning of the in-session questionnaire. The average amount of time spent by all three groups were inflated because the same instructional employee spent nine minutes, an academic

administrator spent seven minutes, and an auxiliary service administrator spent ten minutes exploring the WPSS to locate a response to Question 3.

For Question 4, which required the user to locate literature in the **Info Search** component related to the scenario at the beginning of the in-session questionnaire, users spent an average of 3.7 minutes exploring the WPSS to locate a response. Again, the average amount of time required by all three groups were inflated because the same instructional employee spent nine minutes, a second academic administrator spent eight minutes, and the same auxiliary service administrator spent ten minutes exploring the WPSS to locate a response to the fourth question on the in-session questionnaire.

Users required an average of 4.1 minutes to locate a response to the fifth question, which required the user to locate UK personnel via the **Info Search** component to assist in the scenario presented at the beginning of the in-session questionnaire. The average amount of time spent by instructional personnel and auxiliary service administrators were inflated because the same instructional employee spent 12 minutes and a second auxiliary service administrator spent 16 minutes exploring the WPSS to locate a response to Question 5.

For Question 6, which required the user to explore the **Express Yourself** component of the WPSS for information about the discussion forums, users spent an average of five minutes exploring the WPSS to locate a response. The average amount of time required by academic and auxiliary service administrators were inflated because the second academic administrator spent 14 minutes and the second auxiliary service administrator spent 14 minutes locating a response to the sixth question on the in-session questionnaire.

Users required an average of 3.1 minutes to locate a response to the final question, which required the user to explore the **Viewpoints** component of the WPSS for students' viewpoints. The average amount of time spent by auxiliary service administrators was inflated because the second auxiliary service administrator spent seven minutes locating a response to the Question 7.

Users appeared to have some difficulty locating responses to specific questions on the in-session questionnaire. For example, auxiliary service administrators spent

almost two more minutes than the other two groups locating information about court cases and disability rights laws to respond to the third question. While their average amount of time was inflated, the difference in time was not attributed to this inflation because the average amount of time spent by instructional personnel also was inflated. Based on verbal comments made by users during evaluation sessions, the **Cases Index** area in the **Info Pages** component caused confusion among users. To facilitate use of the content in this area, it was reformatted to be included as a searchable area in the **Info Search** component.

In addition, both groups of administrators needed four more minutes than instructional personnel to locate information about the discussion forums to respond to the sixth question. While both groups' average amount of time was inflated, a third of the one-to-one users spent five minutes or more exploring the WPSS to locate a response. Four actions were taken to provide better access to the discussion forums. First, the **Info Exchange** component was renamed **Express Yourself**. Second, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component to guide users in its use. Third, the introductory page to this component was reformatted to include external discussion forums and listservs as well as **UK-ED discussion forums** for users who did not believe internal forums were sufficient for discussion. Fourth, the **UK-ED forums** were adjusted to better reflect how users might wish to interact. For example, topic forums such as **Law and Policy** were replaced with campus-specific forums such as **UK/LCC** and **KCTCS**.

Once the session began, the investigator noted errors reported by users. Errors were recorded as one of five types of errors: (1) mechanical (i.e., spelling, grammar), (2) navigation (i.e., links, navigation menu), (3) media (i.e., audio, image), (4) title tags, and (5) page format (i.e., font, color, and size).

[Table 17](#) presents the number and types of errors reported by one-to-one users. Approximately half of the errors were related to navigation. One user had problems when trying to connect to two different response pages in the **Balancing Acts** story in the **Viewpoints** component. A second user had difficulty using links to discussion forums from any page in the WPSS. For a third user, the skip navigation link, which

should have been invisible, was present in the navigation menu on the **UK Confidentiality Statement** page, the **Legal Implications Overview** page, and **Balancing Acts Intro** page. These were isolated errors and their cause was unknown.

There were no title tags errors in the WPSS reported and only one mechanical error was reported during evaluation sessions. A spelling error on the **Site Map** page was corrected.

Three users reported media-related problems in the WPSS. The montage did not appear correctly on the **UK Confidentiality Statement** page in the **Info Pages** component for one user. This was an isolated error and its cause was unknown. Two users reported that the audio and text did not match on the **Student 4** response page in the **Balancing Acts** story. Additional text was added to this response page to match the corresponding audio.

Three users reported problems with the page format while interacting with the WPSS. The text of the **Labeling the Problem Part 3** page in the **Viewpoints** component extended beyond the size of the page on the screen for one user. The page header was too small and close to the montage on the **LII** entry page in the **Info Search** component when viewed by a second user. In addition, the section headers (i.e., Summary, References) did not display in boldface font as intended on a third user's computer screen. Project staff reviewed the HTML code on these pages to determine the causes of these errors and corrected them.

Based on the number and type of requests for assistance, nearly all of the users experienced technical difficulties related to the completion of the evaluation instruments. The need for including a user code on the instrument drew questions from 11 users. In addition, the need to record the beginning and ending times for individual questions necessitated technical assistance during seven sessions. Nine users asked for clarification of specific questions on the in-session questionnaire (i.e., Questions 2, 3, 4, 5, and 6), while three users needed explanation of items on the post-session survey (i.e., Items 2, 4, and 5 in the **Info Search** section, Items 3 and 4 in the **Viewpoints** section). Finally, the investigator discussed the options for responding to questions (i.e., copying specific content, recording the page name(s), specifying the URL(s), paraphrasing information) on the in-session questionnaire with 12 users. In all cases,

the investigator was able to clarify the directions and the user completed the evaluation session. The directions on the in-session questionnaire, however, were reviewed and rewritten to increase user understanding.

In addition to the request for clarification of directions, the majority of users also needed technical assistance to complete the evaluation instruments electronically. When given the choice of a print or electronic version of the in-session questionnaire, six users choose to complete the print version. The maintenance of two Web browser windows, as required for completion of the electronic version of the questionnaire, caused difficulties for four users who chose to complete this version of the in-session questionnaire. One user experienced computer problems midway through the in-session questionnaire and completed the remaining questions off line. Another user closed the Web browser window prior to submitting the in-session questionnaire and had to recreate it based on memory. A third user submitted the questionnaire prior to responding to the final question and had to resubmit the questionnaire. Navigation between sections of the post-session survey was problematic for nine users. In all cases, the investigator was able to resolve the problem and the user completed the evaluation session. Based on users' difficulties completing and submitting evaluation instruments electronically, it was necessary to create a print version of the evaluation instruments, rather than having users complete an electronic version during evaluation sessions.

When attempting to access the internal discussion forums in the **Express Yourself** component, one user received a "page not found" message. The investigator described the features of the discussion forums to the user and she was able to complete the evaluation session. This technical difficulty was an isolated problem due to a server error.

One user asked for help finding the advanced search feature in the **Info Search** component, while another user clarified where to type a search request on the search pages. Two users had technical difficulties because they were using unfamiliar computers during the evaluation session. Another user needed assistance finding the delete key and closing a Web browser window, while another user chose to switch to another computer at the beginning of the session. A third user needed assistance

enlarging the font within the WPSS using the preferences on his computer. A fourth user required instruction on how to add an opinion in the **Balancing Act** story in the **Viewpoints** component. In all cases, the investigator demonstrated how to perform the function and the user completed the evaluation session. These were isolated problems related to the technical skills of the individual users.

Summary. The main difficulties encountered during the one-to-one phase consisted of the amount of time required by administrators to locate responses to specific questions on the in-session questionnaire, confusion over the evaluation instruments, and a few technical problems. Ten actions were taken to resolve these problems. First, the content in the **Cases Index** area of the **Info Pages** component was reformatted to be included as a searchable area in the **Info Search** component. Second, the **Info Exchange** component was renamed **Express Yourself**. Third, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component. Fourth, the introductory page to **Express Yourself** component was reformatted to include external discussion forums and listservs as well as **UK-ED discussion forums**. Fifth, the **UK-ED forums** were adjusted to better reflect how users might wish to interact. Sixth, a spelling error on the **Site Map** page was corrected. Seventh, additional text was added to the **Student 4** response page in the **Balancing Acts** story to match the corresponding audio. Eighth, errors in the HTML code on the **Labeling the Problem Part 3** and **LII** entry pages were corrected. Ninth, the investigator created a print version of the evaluation instruments for users to complete to replace the electronic version currently offered. Tenth, directions on the in-session questionnaire were rewritten to enhance user understanding.

Revisions Made to the Evaluation Instruments

Based on analysis of the difficulties reported by one-to-one users, several changes were made to the in-session questionnaire and post-session survey. First, it was decided that future users would be given a print version of the instruments rather than having the option of a print version or electronic version. This was deemed necessary because the majority of users either selected the print version or had problems completing the electronic version.

On the in-session questionnaire, the information about reviewer code, computer platform, and Web browser was moved from the end of the questionnaire to the beginning of the questionnaire so that users could enter this information immediately after viewing the user code on the direction sheet given to users at the beginning of the session. The directions on the in-session questionnaire were modified to clarify how users should respond to questions. The directions were changed from “Use the Web site to answer the following questions,” to “Explain how you would use the Engaging Differences Web site to answer the following questions.” Since many users had questions about recording the beginning and end time for individual questions, the directions were revised to ensure that users knew to log the time they began looking for an answer and the time they completed their response.

Information about reviewer code was moved from the end of the each section of the post-session survey to the beginning of the survey to reduce user confusion that commonly occurred during the one-to-one phase. To ensure that users were clear about the component being assessed, the related areas from the WPSS were listed along with WPSS component. For example, rather than simply using the header “**Info Pages**”, the header “**Info Pages (Disability Rights Laws, Campus Policy, Legal Implications)**” was used to clarify the areas of the WPSS that were evaluated by question in the first section of the post-session survey. Another revision to the survey was the removal of the comment box at the end of each section. To ensure that users discussed the specific component of the WPSS (i.e., **Info Pages, Info Search, Viewpoints**) rather than the WPSS in general or other sections, the comment box at the end of each section of the survey was replaced with two questions about the strengths and needed changes for the specific component of the WPSS. In order to reduce confusion among users when responding to the **Info Search** section of the survey, additional information was included on Question 6 to clarify the difference between search pages, search results, and retrieved information.

Revisions Made to the WPSS

After all data were collected during the one-to-one review phase, ratings and comments were analyzed to determine improvements needed in the WPSS. A report of current data was shared with project staff each week. Project staff discussed the data

and then rated them based on their relevancy and urgency. Because users' ratings of the WPSS and its components were positive on Likert-type scale questions, particular emphasis was placed on open response comments and difficulties reported by users.

Based on user comments during the one-to-one phase, several changes were made to the format of the WPSS. First, problems noted by users regarding the inconsistent rendering of the page features such as headers and montages on individual pages were corrected. The **Return to Top** links included at the end of each content area on individual pages were removed. Instead, the sub-navigation menus for sections provided at the top of the content area were repeated at the bottom of each page in the WPSS. This was deemed necessary for several reasons. First, while the majority of users were satisfied with the navigation features of the WPSS components, a number of users found the navigation features only somewhat helpful. In addition, the investigator noted that, while users did use the navigation menus at the top and left side of page, users did not use the **Return to Top** feature to access the sub-navigation menu at the top of the page. Finally, with the sub-navigation menu repeated at the bottom of the page, project staff determined that the return to tops hyperlinks at the end of each section on a page were unnecessary and in fact on some shorter pages were actually confusing.

While the majority of users had high marks for the **Info Search** component on the post-session survey, several users discussed the search feature as a weakness of the WPSS and recommended improvements to this section. In order to improve the effectiveness of the keyword search option, project staff explored information on the search engine within the UK Web site. The HTML code associated with search boxes on the **Site Search** page and search pages in the **Info Search** component was modified to narrow the search results provided by the UK search engine.

On the **Entry Page** to the WPSS, revisions were made to clarify the information available to the user. A brief description of the components of the WPSS was included in the content area. In addition, stories from the **Viewpoints** component were identified through the inclusion of a header called **Feature Stories**. This was deemed necessary because of user comments of confusion about what is contained in the various components and the need to become familiarize with the WPSS in order to navigate the

pages and components easily. The header for **Viewpoints** stories was included because several users viewed and/or cited information from these stories in responding to the first two questions on the in-session questionnaire, which should have been answered using factual information from the **Info Pages** component. Revisions to the **Entry Page** are presented in [Figure 11](#).

Based on data related to users' responses to the third question on the in-session questionnaire, changes were made to the **Cases Index** area of the **Info Pages** component of the WPSS. While users indicated that the information in this area was relevant, its format discouraged them from exploring the area. To facilitate use of the content in this area, content was reformatted to be included in the **Info Search** component. Entries with citations and summaries were created for individual cases and the **Cases Index** page was changed to a search page format.

Users had difficulty responding to the question about discussion forums on the in-session questionnaire. The accuracy rate was low for this question and the average number of pages viewed and minutes required to locate a response for this question were high. In addition, several users commented on the **Info Exchange** component as a weakness of the WPSS and recommended improvements to this section on the post-session survey. In order to improve this section of the WPSS, several revisions were made. First, it was renamed **Express Yourself**. Second, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component to guide users in its use. Third, the introductory page to this section was reformatted to include external discussion forums and listservs as well as **UK-ED discussion forums** for users who did not believe internal forums were sufficient for discussion. Fourth, the **UK-ED forums** were adjusted to better reflect how users might wish to interact. For example, topic forums such as **Law and Policy** were replaced with campus-specific forums such as **UK/LCC** and **KCTCS**. Finally, with the addition of new forums and name changes of current forums, the graphical icons used as visual representation for forums were deemed unnecessary by project staff. [Figure 12](#) provides an illustration on the revisions made to the **Express Yourself** component after the one-to-one phase.

Several changes were made the site navigation menu at the top of pages in the WPSS based on user recommendations. A **FAQ** section and a **Glossary** section were added to the WPSS. The **FAQ** section was created by converting information from a guide for faculty and staff that was included within the **Publications** area of the **About Us** section. Bringing this information up to the surface in the WPSS seemed logical as several users requested a question and answer format to information provided by the guide. While only one user recommended the inclusion of a glossary of terms, her discussion about its potential use for clarifying terminology used in discussions with and among campus personnel made its inclusion in the WPSS deemed necessary.

In order to allow the inclusion of the **FAQ** and **Glossary** sections on the site navigation menu, several sections were combined. First, the **Contact Us** section was combined with the **About Us** section. Within the **About Us** section, the **Publications** area was removed and its contents were either added to the sub-navigation menu such as the **Abstract** page or provided as a link on another page such as the report on the survey. Within the **Contact Us** area of the **About Us** section, contact information for the project and the feedback form were combined into one area, instead of the two separate sections as previously provided within the WPSS. Revisions to the site navigation menu are presented in [Figure 11](#).

In addition, the **Site Map** and the **Site Tips** sections were combined to make a **Site Help** section. Within this area, the accessibility features were removed from the **Site Tips** area and provided their own individual page. On the **Site Map** page, the headers for WPSS components were changed to facilitate users being able to quickly find information. For example, the header **Info Pages**, which had purple font, was replaced with the header **General Information**, which had white font with a purple background. In addition, graphical bullets for areas on the **Site Map** that slowed downloading of the WPSS were removed. [Figure 13](#) illustrates the revisions in the **Site Help** section.

The **Viewpoints** component was modified slightly as a result of the data from the one-to-one phase due to user confusion about what was contained in each component and user comments about the need for familiarizing one's self with the WPSS in order to navigate easily. To provide users with better clarification about the nature of the **Story**

Index page, the component was renamed **Viewpoints Index** on the navigation menu on the left side of each page in the WPSS. In order to provide an overview of the component to users to enhance navigation, an introductory paragraph was added to the **Story Index** page. Because a new story was added (i.e., **Room for Improvement**), the inclusion of the introductory paragraph, and the fact that most users make selections based on the information clearly visible on the screen when a page is initially viewed, the **Story Index** page was divided into two index pages for **Viewpoints** stories.

Consumer Analysis Phase

In this section, the results for the consumer analysis phase, which answer the last three research questions, are presented along with a discussion of these results. In addition, revisions made to the WPSS based on the results from this phase are described.

As discussed in the methods section, the consumer analysis phase of the formative evaluation was conducted with three groups of on the UK campus: (a) five academic administrators, (b) five instructional personnel, and (c) five auxiliary service administrators. During individual sessions, fifteen users from the target audience responded to one of three in-session questionnaires, with seven similar, but not identical, short answer questions designed for each constituent group ([Appendix J](#)). On the in-session questionnaire, users were required to provide the beginning and ending time for each question along with their response. While users completed the questionnaire, the investigator completed a tracking form ([Appendix H](#)) and bug report form ([Appendix I](#)). At the end of each evaluation session, users completed a post-session survey ([Appendix J](#)).

Thirteen users viewed the WPSS on a Windows computer and two users used a Macintosh computer. Nine users viewed the WPSS using the Internet Explorer browser and six users used the Netscape browser.

Research Question #4: According to Representatives of the Target Population, Was the WPSS Effective in Providing Information About Accommodating Students with Disabilities in Higher Education?

To determine the effectiveness of the WPSS in providing information about accommodation, data were collected from in-session questionnaires completed by

targeted users on the UK campus and the pathway chart completed by the investigator while the user completed the in-session questionnaire.

[Table 18](#) presents the results of users' responses on the in-session questionnaires. While both group of administrators, academic and auxiliary service, obtained similar mean scores on the in-session questionnaire (i.e., accuracy rates of 76% and 79% respectively), instructional personnel obtained a higher mean score (i.e., accuracy rate of 90%) than the other two groups. All instructional personnel respond correctly to the first question, which required the user to explore the **Info Pages** component of the WPSS for campus policy, while academic administrators obtained an accuracy rate of 80% and auxiliary service administrators obtained an accuracy rate of 90%. For Question 2, which required the user to explore the **Info Pages** component of the WPSS to locate the process for determining whether an accommodation is reasonable, instructional personnel obtained a mean accuracy rate of 70%, academic administrators obtained a mean accuracy rate of 20%, and auxiliary service administrators obtained a mean accuracy rate of 40%. While all instructional personnel and academic administrators responded correctly to the third question, which required the user to explore the **Info Pages** and **Info Search** components of the WPSS for information about disability rights laws and legal cases, auxiliary service administrators obtained a mean accuracy rate of 90%. For Question 4, which required the user to explore the **Info Search** component of the WPSS to locate literature related to the scenario presented at the beginning of the in-session questionnaire, both groups of administrators received a mean score of 80%, while all instructional personnel responded correctly. All users responded correctly to the fifth question on the in-session questionnaire, which required the user to explore the **Services and Experts** area of the **Info Search** component to find UK personnel who might be able to provide assistance in the scenario presented at the beginning of the in-session questionnaire. For Question 6, which required the user to explore the **Express Yourself** component of the WPSS for information about discussion forums, instructional personnel obtained a mean score of 80%, academic administrators obtained a mean score of 50%, and auxiliary service administrators obtained a mean score of 60%. On the final question, which required the user to explore the **Viewpoints** component of the WPSS for students' viewpoints, the

accuracy rate for instructional personnel was 80%, the accuracy rate for academic administrators was 100%, and the accuracy rate for auxiliary service administrators was 90%.

[Table 18](#) also illustrates the number of pages viewed to locate responses to questions on the in-session questionnaire. Instructional personnel viewed a mean of 4.9 pages per question, academic administrators viewed a mean of 5.2 pages per question, and auxiliary service administrators viewed a mean of 5.8 pages per question to locate responses on the in-session questionnaire.

The average number of pages viewed by users to respond to the first question on the in-session questionnaire, which required the user to explore the **Info Pages** component of the WPSS for campus policy, was 3.6 pages. Academic administrators viewed an average of one more page than auxiliary service administrators and instructional personnel to respond to this question.

For question 2, which required the user to explore the **Info Pages** component of the WPSS to locate the process for determining whether an accommodation is reasonable, the average number of pages viewed by users to locate a response was 5.1 pages. The averages for instructional personnel and academic administrators were inflated because an instructional employee viewed 14 pages and an academic administrator viewed 11 pages to locate a response to this question. Instructional personnel viewed an average of one more page than academic and auxiliary service administrators to respond to this question.

Users viewed an average of 4.8 pages in order to respond to the third question on the in-session questionnaire, which required the user to explore the **Info Pages** and **Info Search** components for information about disability rights laws and legal cases. Instructional personnel, academic administrators, and auxiliary service administrators viewed an average of 4.8, 4.4, and 5.2 pages in the WPSS to respond to this question. The average number of pages viewed by instructional personnel and auxiliary service administrators were inflated because a second instructional employee and an auxiliary service administrator viewed 15 pages to locate a response to this question.

For Question 4, which required the user to explore the **Info Search** component of the WPSS to locate literature related to the scenario presented at the beginning of the

in-session questionnaire, the average number of page viewed by users to locate an answer was 5.1 pages. The average number of pages viewed by academic administrators and auxiliary service administrators to locate a response to this question were inflated because a second academic administrator viewed 13 pages and a second auxiliary service administrator viewed nine pages. Even with the inflation in the averages of both groups of administrators, instructional personnel viewed the largest number of pages in order to locate an answer to the fourth question.

The average number of pages viewed by users to locate a response to the fifth question, which required the user to explore the **Services and Experts** area of the **Info Search** component to find UK personnel who might be able to provide assistance in the scenario presented at the beginning of the in-session questionnaire, was 7.6 pages. The average number of pages viewed ranged from 4.2 pages for instructional personnel to 11.8 pages for auxiliary service administrators. The average number of pages viewed by academic administrators and auxiliary service administrators were inflated because the first academic administrator viewed 15 pages and the first and second auxiliary service administrators viewed 16 pages and 19 pages respectively to locate a response.

For Question 6, which required the user to explore the **Express Yourself** component of the WPSS for information about discussion forums, the average number of pages viewed by users to respond was 5.4 pages. The average number of pages viewed by academic administrators was inflated because two administrators viewed ten pages to locate a response to the sixth question. While auxiliary service administrators explored 7.4 pages locating an answer, instructional personnel and academic administrators viewed an average of 4.4 pages and 5.2 pages respectively.

Users viewed an average of 5.1 pages in the WPSS in order to respond to the final question on the in-session questionnaire, which required the user to explore the **Viewpoints** component of the WPSS for students' viewpoints. The average number of pages viewed by academic administrators was inflated because the first administrator viewed 18 pages to locate a response to this question. Academic administrators viewed an average of 6.8 pages, while instructional personnel and auxiliary service administrators viewed nearly the same number of pages to locate a response to this final question, 4.6 pages and 4.2 pages respectively.

When analyzing data for specific questions on the in-session questionnaire, the WPSS was more effective at providing certain information (i.e., campus policy, legal cases, related literature, discussion forums, and perspectives on disability issues) as opposed to other information (i.e., reasonable accommodations and campus services). The accuracy rate was high and mean number of pages viewed was low for Questions 1, 3, 4, 6, and 7. Consequently, no changes were made in the WPSS areas that provided information about campus policy, legal cases, related literature, and perspectives on disability issues.

While the mean number of pages viewed was low for the second question, the accuracy rate for users also was low. To improve the effectiveness of the WPSS to deliver information about whether an accommodation is reasonable, project staff highlighted areas of the WPSS that provide information about reasonable accommodations at the bottom of the left navigation menu on the **Entry Page**.

While the accuracy rate was high, the mean number of pages viewed by both groups of administrators to locate an answer to the fifth question was high. While the average number of pages viewed by academic administrators and auxiliary service administrators to locate a response to this question were inflated, nearly three-fourths of consumer analysis users viewed five or more pages to locate a response. In addition, a majority of users reported difficulties when using the search features in the **Services and Experts** area of the **Info Search** component. Issues with the UK search engine that prevented users from accessing the entries in the **Services and Experts** area were due to server errors, which were resolved at the end of this phase.

Summary. The WPSS was effective in providing information to personnel on the UK campus. All three constituent groups obtained an accuracy rate of 76% or higher on the in-session questionnaire. Consumer analysis users viewed an average of 5.3 pages per question to locate responses to the in-session questionnaire. Accuracy rates may have been confounded by technical difficulties experienced by users while interacting with the WPSS.

When analyzing data for specific questions on the in-session questionnaire, the WPSS was more effective at providing certain information (i.e., campus policy, legal cases, related literature, discussion forums, and perspectives on disability issues) as

opposed to other information (i.e., reasonable accommodations and campus services). To improve the effectiveness of the WPSS in providing information to postsecondary personnel, two actions were taken. First, areas of the WPSS that provided information about reasonable accommodations were highlighted as feature items at the bottom of the left navigation menu on the **Entry Page**. Second, issues with the UK search engine that prevented users from accessing the entries in the **Services and Experts** area were resolved.

Research Question #5: According to Representatives of the Target Population, How Did Users Perceive the WPSS?

To determine the perception of users about the WPSS, targeted users on the UK campus were asked to complete a post-session survey after interacting with the WPSS. The post-session survey was divided into four sections. Three survey sections focused on the **Info Pages**, **Info Search**, and **Viewpoints** components of the WPSS. The majority of items in the first three sections of the survey were questions to which the user could respond using a 3-point Likert-type scale. At the end of each section, two questions designed to elicit open-ended responses about the strengths and weaknesses of the individual WPSS section were presented. The final section included questions designed to elicit open-ended responses to general questions about the strengths and weaknesses of the WPSS.

Consumer analysis users were asked to assess the **Info Pages** component of the WPSS with respect to the elements of motivation, design, and navigation. [Table 19](#) presents reviewers' responses to the first section of the post-session survey. Users agreed that the page layout was attractive and navigation features were helpful. All users agreed that the content was clearly organized, held their interest, and was useful to their professional activities. Nearly all users agreed that the content of this section was easy to understand. One user commented that the pages were colorful. Another user commented that the pictures were helpful. A third user commented that the usefulness of the **Info Pages** component depended on the circumstances.

The final two items of the **Info Pages** section of the post-session survey were open-ended questions. These questions invited users to discuss the strengths of this

component and recommend changes that should be made to it. [Table 20](#) presents comments made by users at the end of the first section of the survey.

Fourteen users discussed the strengths of the **Info Pages** component. While most comments made by users were related to the **Info Pages** component, several comments made by users discussed other components of the WPSS. Comments related to other components will be discussed later in this section. Only those related to the **Info Pages** component will be addressed below.

Three users commented on the succinctness of the information in the **Info Pages** component. Four users noted the comprehensiveness of the information contained in this component. One user commented on the clarity of the information. Eight users commented on the ease of locating information within this component. One user appreciated the colors used in the page format. Another user reported that the component was not “overdone.”

Eight users recommended changes that should be made to the **Info Pages** component. One user commented on another section of the WPSS, rather than the **Info Pages** component as requested. This suggestion will be discussed later in this section. One user recommended highlighting the Disability Resource Center more within the **Campus Policy** area. This recommendation was unclear as this campus resource was provided as a hyperlink on each page in this area.

Another user suggested having more direct links to campus resources and including the names of administrators for these offices. Hyperlinks for campus resources within the **Info Pages** component were designed to link to an entry page in the **Info Search** component to provide the user with contact information as well as a brief description of the services available from the selected resource. Names of administrators for individual offices were not included in the WPSS, except in the **FAQ** section, in order to limit maintenance of the WPSS in the future.

A third user requested the addition of more “specifics or examples” in some areas of this component. All areas of the **Info Pages** component had not been developed prior to the consumer analysis phase. Specifics about techniques for providing accommodations will be included in these areas in the future.

Four users recommended changes to the organization of **Info Pages** component. One user suggested reorganizing the links in the left navigation menu so that the **Disability Rights Laws** area is listed first because it serves as a “basic foundation” to the other **Info Pages** links. The hyperlinks for legal information were grouped together and placed at the bottom of **Info Pages** section of the left navigation menu based on the anticipated needs of users. In order to aid users in understanding the relevant legal issues for other **Info Pages** areas, hyperlinks are embedded in the content or provided as an option in the yellow link boxes dispersed throughout the individual pages.

A second user recommended changing the title of the **Legal Implications** area to Overview of Disability Laws. This was not deemed necessary because it would cause user confusion with the overview of legislation provided in the **Disability Rights Laws** area.

A third user suggested making a separate page containing information about how to determine reasonable accommodations. This recommendation was unclear since a separate page about determining reasonable accommodations was present in the **Legal Implications** area.

A fourth user requested a reduction in the number of steps required to locate information in this component. To reduce the number of steps required by users to access information about campus policy, three versions of the WPSS were created (i.e., UK version, LCC version, and KCTCS version). This allowed users to access campus specific policy from the **Campus Policy** hyperlink rather than accessing a page listing hyperlinks to policy pages for the three institutions.

In the second section of the post-session survey, users were asked to assess the **Info Search** component of the WPSS with respect to the elements of motivation, design, and navigation. [Table 21](#) presents users’ responses to this section of the survey. All users agreed that they liked the format of the search pages and retrieved information, the topical listings were useful, and the navigation features were helpful. One user commented that there were some “awfully broad listings.” A second user questioned whether the font was too small on these pages. A third user recommended including a full reference and a fourth user requested a more elaborate summary.

Nearly all users agreed that the keyword feature was easy to use and retrieved relevant and useful information. One academic administrator found the keyword feature difficult to use. She recommended having a search engine just for the WPSS as well as “broader search, as it is now.” One auxiliary service administrator did not agree that the retrieved information was useful or relevant. She was frustrated because the search feature did not pull up all resources (e.g., relevant cases). One user commented that while the search feature “didn’t work very well”, the format was “pretty easy.” A second user appreciated the campus resources, while a third user noted that it took awhile to obtain a connection.

The final two items of the **Info Search** section of the post-session survey were open-ended questions. These questions invited users to discuss the strengths of this component and recommend changes that should be made to it. [Table 22](#) presents the comments made by user at the end of the **Info Search** section of the survey.

Fourteen users discussed the strengths of the **Info Search** component. One user commented that he was “neutral on that issue,” and another user reported “any search engine take[s] time to learn.” Three users commented on the ease of locating information using the search features within this component. Three users appreciated the clarity of this component. One user noted that the **Info Search** component contained a “broad base of information,” while another user viewed it as “ready access to information.”

Three users commented on the flexibility of the **Info Search** component. Specifically, one user appreciated the option of searching using the search box as well as the topical listings below. Two users commented on the links. One user noted that there were “lots of good links”, while another users discussed the links to published articles. In the **Info Pages** section of the survey, one user indicated that the **Related Literature** areas and **Campus Resources** listing were strengths.

Seven users recommended changes that should be made to the **Info Search** component. Two users made comments about the WPSS in general rather than focusing on the **Info Search** component as requested. One user recommended project staff continue constructing the WPSS, while another user suggested adding label for main areas on the left navigation menu on all pages within the WPSS.

Two users encouraged the inclusion of online documents as much as possible in the **Related Literature** area of this component. While this area did not contain hyperlinks to online documents during this phase, project staff planned to add entries for online publications in the future.

Another user commented that the title **Relevant Cases** does not indicate legal references immediately to the user. To clarify the type of information contained in this area, the **Relevant Cases** area was renamed **Legal Cases**.

Four users commented specifically on the UK search engine. One user recommended adding a local site search, while another user noted that it hampered the effectiveness of this component. A third user suggested enlarging the type on the search results page provided by the UK search engine. A fourth user indicated that he didn't like the "top ten Web format" of the search results page. While project staff also had concerns with the use of the UK search engine, it was not deemed logical to employ a different search engine due to monetary reasons and the availability of the UK search engine.

In the third section of the post-session survey, users were asked to assess the **Viewpoints** component of the WPSS with respect to the elements of motivation, design, navigation, and media. [Table 23](#) presents users' responses to this section of the post-session survey. All users agreed that the stories held their interest and caused them to explore their attitudes about disabilities and accommodation. One user commented that it was difficult to rate his interest level and whether the stories caused exploration of his attitudes because he scanned the stories rather than reading them. Another user commented the stories would allow one "to be more aware on a daily basis".

All users liked the format of the story pages and story response pages. One user commented that the text was easy to read and that it was like listening to a person tell a story. Another user commented that he did not notice the new window opening at first, but he liked the fact that the text in these windows link to other resources. A third user commented that the use of a new window seemed "more organized."

Nearly all users agreed that the media enhanced the content and the navigation features helped navigation in the **Viewpoints** component of the WPSS. The same auxiliary service administrator who gave negative ratings in the previous section did not

agree that the media enhanced content. She commented that she did not notice the media. One user appreciated the images included in this section, while a second user recommended including at least one male student in the **Balancing Acts** story. A third user commented that the navigation features allowed the injection of other valuable information while the reader was engaged.

The final two items of the **Viewpoints** section of the post-session survey were open-ended questions. These questions invited users to discuss the strengths of the **Viewpoints** component and recommend changes that should be made to it. [Table 24](#) presents the comments made by users at the end of the third section on the post-session survey.

Fourteen users discussed the strengths of the **Viewpoints** component. Three users commented on the personal nature of the **Viewpoints** component. One administrator noted that it “hits home with people.” Seven users discussed how the stories provided the student’s perspective on challenges they experience in daily life. One user commented that it was helpful to “connect to other people (not just resources).” Another user appreciated the links provided to other components of the WPSS within the stories. Two users noted the variety of stories and one user indicated that the **Viewpoints** component was a “great resource.” One user commented that the component was attractive, while another user indicated that the **Viewpoints** component was “very thorough” and “well done.” In addition, two users noted that the **Viewpoints** component was a strength in the first section of the post-session survey.

Eight users recommended changes that should be made to the **Viewpoints** component. While one user commented that the component was “very user friendly,” he also questioned whether the stories would occasionally change. Three users recommended adding more stories to the component. One user suggested including stories related to different types of disabilities and marking them based on the type of disability discussed. Another user suggested gearing the component toward the questions or concerns that campus personnel were most likely to have about the accommodation process and disabilities. New stories focused on different disabilities and disability issues related to accommodation at the postsecondary level will be added to the **Viewpoints** component on a regular basis.

Another user was concerned about whether the title of the component accurately depicted its content. A second user commented that it was hard to locate stories from the **Entry Page** because a user needed to know the exact title to locate stories. The **Entry Page** was not designed so that the user could access all stories from this location. Instead, several stories are featured on this page and a hyperlink is provided to an index of all stories in **Viewpoints** component.

The fourth and final section of the post-session survey contained four open-ended questions. These questions invited users to discuss the strengths and weaknesses of the WPSS, recommend improvements that should be made to it, and provide additional comments. [Table 25](#) presents users' comments in this section of the survey.

All users discussed the strengths of the WPSS. Three users commented that the WPSS was a good resource for campus personnel to locate information about disabilities to help in individual situations. Twelve users noted the ease of navigating the WPSS to locate information. One user commented that the user "can find quick answers and detailed explanations." Another user indicated that the WPSS made "finding complex info a snap." A third user noted that the WPSS was "very user friendly," while a fourth user commented that it provided "ready access to information."

Five users commented on the comprehensiveness of the information contained in the WPSS. One administrator noted that the information was "very useful and timely." An instructional employee reported that it was "very informative and very helpful." Another administrator commented that the WPSS provided "good, straightforward info."

Three users commented on the writing style used in the WPSS. Specifically, one administrator noted that it had a "nice balance of info oriented and easy to read." Another administrator commented that the WPSS was well organized. Two users commented on the attractiveness of the WPSS. One user appreciated that the WPSS presented a "human side" to disability issues not provided in campus policies. Another user commented specifically on the images used to enhance the content in the WPSS.

Several users commented on specific components of the WPSS. One user commented on the campus resources contained in the **Info Search** component, while

another user noted that the **Info Pages** component clearly overviewed laws and policy. A third user rated the **Viewpoints** component as a strength of the WPSS.

Ten users discussed the weaknesses of the WPSS. One user commented that it was hard to reflect the full range of disability issues in a manageable format, especially in the **Viewpoints** component. Another user cited technical problems (i.e., server difficulties, missing audio, missing applications) as a weakness of the WPSS. While the technical problems with the **Info Search** component were caused by server errors, the missing audio and applications were isolated problems with unknown causes.

One user commented that she had trouble using the search engine to locate information on resources. The technical difficulties experienced by this user were due to server errors.

This same user noted that there were not enough links to online articles in the **Related Literature** area. While this area did not contain hyperlinks to online documents during this phase, project staff planned to add entries for online publications in the future.

Another user indicated that a local site search was needed. While project staff also had concerns with the use of the UK search engine, it was not deemed logical to employ a different search engine due to monetary reasons and the availability of the UK search engine.

This same user suggested identifying the legal cases in the **Relevant Cases** area of the **Info Search** component by renaming it Relevant Legal Cases. To clarify the type of information contained in this area, the **Relevant Cases** area was renamed **Legal Cases**.

Two users commented that the UK resources, specifically the Disability Resource Center, were not visible enough in the WPSS. Since hyperlinks for campus resources were embedded in the content of relevant pages in the **Info Pages** component, campus resources were offered as a topical listing in the **Services and Experts** area, and there was a page listing contact information and a brief description of all campus resources in the **FAQ section**, it was unclear why these users indicated that campus resources were not visible enough.

A third user indicated that knowing what the section titles meant would be helpful. Since title tags described the content in areas of the WPSS available from hyperlinks on the left navigation menu, the reasoning behind this comment was not clear.

A fourth user reported that it was not easy to quickly locate information. A fifth user found the WPSS to be “exhausting.” This same user suggested that users want simple answers and do not need “all this background.” Based on this feedback, project staff highlighted the **FAQ** section at the bottom of the left navigation menu on the **Entry Page** to allow users to quickly access information in a question and answer format.

Nine users recommended improvements that should be made to the WPSS. Two users recommended addressing weaknesses noted in the WPSS, while one user commented that the WPSS could be a resource for students. Another user suggested adding more variety to the **Viewpoints** component. In the future, new stories focused on different disabilities and disability issues related to accommodation at the postsecondary level will be added to the **Viewpoints** component.

A third user recommended increasing the size of the font on the search results pages provided by the UK search engine. It was not possible to redesign this page since it would require the UK Webmaster to create a new design to be used by the UK Web site so this recommendation was not implemented.

One administrator recommended including section titles on the left navigation menu. Since title tags described the content in areas of the WPSS available from hyperlinks on the left navigation menu, this recommendation was not implemented.

An instructional employee suggested changing the title of the **Legal Implications** area to Overview of Disability Law. This was not deemed appropriate because it would cause user confusion with the overview of legislation provided in the **Disability Rights Laws** area.

Another instructional employee recommended making UK resources more easily identifiable. Since hyperlinks for campus resources were embedded in the content of relevant pages in the **Info Pages** component, campus resources were offered as a topical listing in the **Services and Experts** area, and there was a page listing contact information and a brief description of all campus resources in the **FAQ section**, it was unclear why this users indicated that campus resources were not easily identifiable.

An academic administrator noted that the **UK Guide** in the **FAQ** section was difficult to locate. Another academic administrator suggesting making the WPSS more “drill down” by starting with the answer and then giving background if someone wants it. Based on this feedback, project staff highlighted the **FAQ** section at the bottom of the left navigation menu on the **Entry Page** to allow users to quickly access information in a question and answer format.

Eight users provided additional comments about the WPSS. One user commented on the ease of the session. Five users congratulated the project staff on good work. An administrator noted that the project needed to “get the word out” about the WPSS. A second administrator commented that project seemed “very worthwhile” and hoped the WPSS would be available soon for use by campus personnel and students. A third administrator reported that the WPSS was “nicely developed” and should prove very helpful to campus personnel and students providing they know about it.

Summary. Users generally agreed that the **Info Pages** component was attractive, easy to navigate and understand, interesting, clearly organized, and useful in their professional activities. With regard to the **Info Search** component, users also agreed that the keyword search feature was easy to use, the retrieved information was relevant and useful, the format of the search pages and retrieved information was acceptable, the topical listings were useful, and the navigations features were helpful. Users agreed that the **Viewpoints** component held their interest, caused them to explore their attitudes about disabilities and accommodation, and was easy to navigate. Finally, users agreed that the format of the story responses was useful, that the media enhanced the content, and that they liked the story page format in the **Viewpoints** component. Users’ perceptions of the WPSS were generally positive and nearly all of the negative ratings on the post-session survey (i.e., three out of five) were attributed to one auxiliary service administrator.

Analysis of user comments on the post-session survey, however, indicated that there were areas in the WPSS that required revision. Based on these data, three actions were taken by project staff to improve the WPSS. First, three versions of the WPSS (i.e., UK version, LCC version, and KCTCS version) were created to reduce the

number of steps required by users to access information about campus policy. Second, the **Relevant Cases** area in the **Info Search** component was renamed **Legal Cases** to clarify the content contained in this area. Third, project staff highlighted selected items, such as the **FAQ** section, at the bottom of the left navigation menu on the **Entry Page** to allow users to quickly access information.

Research Question #6: According to Representatives of the Target Population, What Difficulties Did Users Encounter While Interacting with the WPSS?

To assess the difficulties users encountered while interacting with the WPSS, data were collected during the individual evaluation sessions. Users recorded the time when they began to locate an answer and when they ended responding to the question on in-session questionnaires. The investigator also used a bug report form ([Appendix I](#)) to note errors in the WPSS reported by users during individual sessions. In addition, each session was tape recorded and transcribed so that user comments could be analyzed after the session.

[Table 26](#) presents the amount of time required by users to respond to questions on the in-session questionnaire. Overall, the average amount of time per question required by users to locate responses on the in-session questionnaire did not appear to present any difficulties during the consumer analysis phase. Instructional personnel spent an average of 1.9 minutes per question exploring the WPSS to locate responses to the in-session questionnaire. Academic administrators spent an average of 2.1 minutes per question exploring the WPSS, while auxiliary service administrators spent an average of 2.7 minutes per question locating responses to the in-session questionnaire.

For Question 1, which required the user to explore the **Info Pages** component of the WPSS for campus policy, the mean time required for all users to find an answer within the WPSS was 2.3 minutes. While the average amount of time required by academic administrators was low, it was inflated because an administrator spent four minutes exploring the WPSS to locate an answer. The average amount of time required by auxiliary service administrators also was inflated because an administrator spent nine minutes locating an answer to the first question.

The average amount of time required for users to respond to the second question, which required the user to explore the **Info Pages** component of the WPSS to locate the process for determining whether an accommodation is reasonable, was less than three minutes. The average amount of time required by auxiliary service administrators was inflated because the same administrator spent six minutes locating an answer to Question 2.

For Question 3, which required the user to explore the **Info Pages** and **Info Search** components for information about disability rights laws and legal cases, users required an average of 2.2 minutes to locate an answer. Again, The average amount of time required by auxiliary service administrators was inflated because the same administrator spent eight minutes locating an answer to the third question.

Users required an average of 2.2 minutes to locate a response to the fourth question, which required the user to explore the **Info Search** component of the WPSS to locate literature related to the scenario presented at the beginning of the in-session questionnaire. The average amount of time required by academic administrators was inflated because a second administrator spent five minutes locating an answer to the Question 4.

The average amount of time spent by users to locate a response to the fifth question on the in-session questionnaire, which required the user to explore the **Services and Experts** area of the **Info Search** component to find UK personnel who might be able to provide assistance in the scenario presented at the beginning of the in-session questionnaire, was 2.7 minutes. For Question 6, which required the user to explore the **Express Yourself** component of the WPSS for information about discussion forums, users spent an average of 2.3 minutes locating a response. The average amount of time required by auxiliary service administrators was inflated because the same administrator spent eight minutes locating an answer to the sixth question. Users spent an average of 1.9 minutes exploring the WPSS to locate a response to the final question on the in-session questionnaire, which required the user to explore the **Viewpoints** component of the WPSS for students' viewpoints.

Auxiliary service administrators appeared to have some difficulty locating a response to the fifth question on the in-session questionnaire. They required nearly

twice as much time to locate information about campus services as instructional personnel and academic administrators (i.e., a mean of 4.2 minutes, 1.6 minutes, and 2.4 minutes respectively). This was partially due to server errors that prevented users from accessing campus resources in the **Services and Experts** area of the **Info Search** component.

Once the session began, the investigator noted errors reported by consumer analysis users. Errors were recorded as one of five types of errors: (a) mechanical (i.e., spelling, grammar), (b) navigation (i.e., links, navigation menu), (c) media (i.e., audio, image), (d) title tags, and (e) page format (i.e., font, color, and size). [Table 27](#) presents the number and types of errors reported users. Fourteen users reported a total of 27 errors.

Approximately half of the errors reported were related to navigation. Fourteen users experienced difficulties when attempting to search in the **Services and Experts** and/or **Relevant Cases** area of the **Info Search** component. These errors were due to server errors that were resolved at the end of the phase. In addition, one user reported a dead link in the **FAQ** section of the WPSS. The HTML code was revised so that the hyperlink functioned properly.

Of the other 12 errors reported by users, the majority were related to page formatting. The bottom sub-navigation menu rendered incorrectly on the computer screen of two users. The menu would break the line of text and continue in a linear format after highlighted text, which indicated the page currently being viewed by the user. For two users, the font for the **Relevant Cases** hyperlink on the **Services and Experts** search page differed from the other hyperlinks in the left navigation menu. The HTML code for the pages affected was revised to resolve these errors.

The page header on two **Campus Policy** pages (i.e., **Instructional Accommodations Policy** page and **Confidentiality Statement** page) in the **Info Pages** section rendered incorrectly on one user's computer. Rather than both sections of the header being purple, the first section was purple and the second section was black on her computer. This was an isolated error and the cause was unknown.

There were no mechanical errors or problems with title tags noted during evaluation sessions. Three users, however, reported problems using media in the

WPSS. Two users were unable to listen to the audio used in the **Balancing Acts** story in the **Viewpoints** component, while another user could not see an image on a response page for the **Room for Improvement** story in the **Viewpoints** component. The audio errors were computer specific problems. One user did not have his speakers turned on and the other user had a new computer without a media application. The missing image was due to a faulty link in the HTML code that was resolved at the end of the phase.

Based on the number and type of requests for assistance, nearly all users required clarification of directions on the evaluation instruments during the consumer analysis phase. The need to record the beginning and ending times for individual questions necessitated technical assistance during seven sessions. Four users asked for clarification of specific questions on the in-session questionnaire (i.e., Questions 1, 3, and 5), while five users needed explanation of items on the post-session survey (i.e., Item 4 in the **Info Pages** section, Item 4 in the **Info Search** section, Items 2 and 4 in the **Viewpoints** section). Two users asked for clarification of the meaning of **Info Pages** on the post-session survey. Finally, the investigator discussed the options for responding to questions (i.e., copying specific content, recording the page name(s), specifying the URL(s), paraphrasing information) on the in-session questionnaire with 12 users. In all cases, the investigator was able to assure the user that he or she was accurately completing the in-session questionnaire. Since the users appeared to need assurance rather than clarification, it was unclear whether the directions on these instruments needed to be revised.

Ten users required assistance due to problems using the UK search engine to search the **Services and Experts** and **Relevant Cases** areas in the **Info Search** component. When the users attempted to conduct a search in these areas, they received a message that there were no entries that matched their search request. This occurred whether they typed in a request or used the topical listings. In order to allow them to continue with the session, the investigator described the search results page and they type of information that would have been provided on the retrieved information pages. These difficulties were due to server errors that were resolved at the end of the consumer analysis phase.

Two users had difficulty typing the URL for the WPSS in the address field of their Web browser window. Upon review of the URL typed by the users, it was determined that they had left out a character. They added the missing character and were able to complete the session. One user requested assistance from the investigator in closing a Web browser window because she was using an unfamiliar computer during the evaluation session. The investigator demonstrated how to perform this task and she was able to complete the session. Two users needed technical assistance due to audio problems in the **Viewpoints** component. One user was unable to hear the sound until he turned on his speakers. The other administrator was unable to open the audio files on his computer because he did not have a media application software on his computer. These difficulties were related to the technical skills of the user and did not require revision in the WPSS.

Summary. The main difficulties encountered during the consumer analysis phase consisted of the amount of time required by auxiliary service administrators to locate a response to the fifth question on the in-session questionnaire, some confusion over the evaluation instruments, and a few technical problems. Five actions were taken to resolve these problems. First, server errors that prevented users from accessing the **Services and Experts** and **Related Literature** areas in the **Info Search** component were resolved. Second, the HTML code for a hyperlink in the **FAQ** section was revised so that the hyperlink functioned properly. Third, the HTML code for pages that contained a bottom sub-navigation menu was revised. Fourth, the HTML code for the **Relevant Cases** area hyperlink on the **Services and Experts** search page was revised so that the font matched other font in the left navigation menu. Fifth, the HTML code for a missing image on the **Room for Improvements** story page was revised so that the image was rendered.

Revisions Made to the WPSS

After all data were collected during the consumer analysis review phase, ratings and comments were analyzed to determine improvements needed in the WPSS. A report of current data was shared with project staff each week. Project staff discussed the data and then rated them based on their relevancy and urgency. Because users' ratings of the WPSS and its components were positive on Likert-type scale questions,

particular emphasis was placed on comments made and difficulties reported by consumer analysis users.

Based on user comments during the consumer analysis phase, project staff addressed several technical problems within the WPSS. Issues with the UK search engine that prevented users from accessing the entries in the **Services and Experts** and **Relevant Cases** areas of the **Info Search** component were resolved at the end of this phase. In addition, the faulty links and page formats (i.e., differing font in the left navigation menu, line separation in the bottom sub-navigation menu, missing image) reported by users were corrected.

During evaluation sessions, the investigator noted that several users attempted to use the color bullets to the left of descriptions on the **Entry Page** as hyperlinks. While not recorded as an error or difficulty by users, the bullets were made hyperlinks to the sections of the **Site Map** that correlated to the type of information described (e.g., the purple bullet was linked to the **Info Pages** component on the **Site Map**) to allow users an option for accessing information. On the left navigation menu, the **Relevant Cases** area of the **Info Search** component was renamed **Legal Cases** based on a faculty member's suggestion to clearly identify that the area contained court cases rather than case studies.

Other revisions to the WPSS were made in an attempt to decrease the amount of time spent and number of pages viewed by users to locate information. First, three versions of the WPSS were created (i.e., UK version, LCC version, and KCTCS version), rather than providing information for all three institutions in one site. This reduced the number of steps required by users to access information about campus policy as well the **Faculty Guide**. Since the drop down menu for the **Campus Policy** area in the **Info Pages** component in the left navigation menu was no longer necessary, project staff reassessed the need for these menus in other areas of the **Info Pages** component and determined it was unnecessary because sub-navigation menus provided adequate navigation within the **Disability Rights Laws** and **Legal Implications** areas. Finally, project staff decided to highlight selected items at the bottom of the left navigation menu on the **Entry Page**. This was deemed necessary

because users continued to have difficulty locating information, such as how to determine whether an accommodation is reasonable, within the WPSS.

Field Trial Phase

In this section, the results for the field trial phase, which answer the last three research questions, are presented along with a discussion of these results. In addition, revisions made to the WPSS based on the results from this phase are described.

As discussed in the methods section, the trial phase of the formative evaluation was conducted with three groups of on the UK campus: (a) ten academic administrators, (b) 15 instructional employees, and (c) five auxiliary service administrators. Users from the target audience responded independently to an in-session questionnaire ([Appendix J](#)) and post-session survey ([Appendix J](#)) during this phase. E-mail messages ([Appendix A](#) and [Appendix B](#)) were sent to specific campus personnel, selected based on their position, requesting their participation in this research. This process continued until 30 individuals (i.e., ten academic administrators, 15 instructional employees, and five auxiliary service administrators) agreed to participate and submitted the evaluation instruments. Upon agreeing to participate in the investigation, users received a package containing written directions for completing the session, a consent form, a print copy of one of the three in-session questionnaires, depending on their position, and a print copy of the post-session survey. The evaluation instruments and the consent form were submitted to the investigator via campus mail using a self-addressed envelope.

Twenty-two users viewed the WPSS on a Windows computer, two users used a Macintosh computer, and six users did not report the computer platform used to view the WPSS. Ten users viewed the WPSS using the Internet Explorer Web browser, 13 users used the Netscape Web browser, one user used the AOL Web browser, and six users did not report the Web browser used to view the WPSS.

Research Question #4: According to Representatives of the Target Population, Was the WPSS Effective in Providing Information About Accommodating Students with Disabilities in Higher Education?

To determine the effectiveness of the WPSS in providing information about accommodation, targeted users on the UK campus were asked to complete an in-session questionnaire while interacting with the WPSS.

[Table 28](#) presents the results of users' responses on the in-session questionnaires. While the instructional personnel and academic administrators obtained similar mean scores on the in-session questionnaire (i.e., 78% and 74% respectively), the auxiliary service administrators obtained a mean score of 94%. For Question 1, which required the user to explore the **Info Pages** component of the WPSS for campus policy, all auxiliary service administrators were able to locate a response. The accuracy rate for academic administrators was 78%, while the rate for instructional personnel was 93%. Academic and auxiliary service administrators obtained similar mean scores on the second question, which required the user to explore the **Info Pages** component of the WPSS to locate the process for determining whether an accommodation is reasonable (i.e., an accuracy rate of 70% and 67% respectively), while instructional personnel obtained an accuracy rate of 57%. For Question 3, which required the user to explore the **Info Pages** and **Info Search** components for information about disability rights laws and legal cases, instructional personnel obtained an accuracy rate of 87%, while all administrators responded correctly. Auxiliary service administrators had an accuracy rate of 100%, instructional personnel had an accuracy rate of 90%, and academic administrators had an accuracy rate of 78% for the fourth question on the in-session questionnaire, which required the user to explore the **Info Search** component of the WPSS to locate literature related to the scenario presented at the beginning of the in-session questionnaire. For Question 5, which required the user to explore the **Services and Experts** area of the **Info Search** component to find UK personnel who might be able to provide assistance in the scenario presented at the beginning of the in-session questionnaire, while auxiliary service administrators had an accuracy rate of 90%, instructional personnel and academic administrators had nearly identical accuracy rates (i.e., 77% and 78% respectively). Auxiliary service administrators obtained a mean

score of 100% and instructional personnel obtained a mean score of 70% for the final two questions on the in-session questionnaire, while academic administrators obtained a mean score of 61% and 70% for these questions.

Summary. The WPSS was effective in providing information to personnel on the UK campus. All three constituent groups obtained an accuracy rate of 74% or higher on the in-session questionnaire. A number of factors, however, may have been responsible for the differences among the three constituent groups. First, the smaller sample size of auxiliary service administrators may have confounded the results. In addition, the scores may have been affected by technical difficulties experienced while interacting with the WPSS. Consequently, no changes were made in the WPSS based on these data.

Research Question #5: According to Representatives of the Target Population, How Did Users Perceive the WPSS?

To determine the perception of users about the WPSS, targeted users on the UK campus were asked to complete a post-session survey after interacting with the WPSS. The post-session survey was divided into four sections. Three survey sections focused on the **Info Pages**, **Info Search**, and **Viewpoints** components of the WPSS. Items in the first three sections of the survey were questions to which the reviewer could respond using a 3-point Likert-type scale. Reviewers were invited to write comments at the end of each section. The final section included questions designed to elicit open-ended responses to general questions about the strengths and weaknesses of the WPSS.

Users were asked to assess the **Info Pages** component of the WPSS with respect to the elements of motivation, design, and navigation. [Table 29](#) presents reviewers' responses to this section of the post-session survey. All users agreed that the page layout was attractive and that navigation features were helpful in the **Info Pages** component. One user commented that the pages were a "little busy" and that the structure was not clear from the design. Another user noted that the pages were very clear. A third user indicated that he would have liked more color on the **Info Pages**. A fourth user commented that the clear layout makes it easy to use the WPSS and that the hyperlinks provided "ample directions to turn."

All users agreed that content in the **Info Pages** component was easy to understand and held their interest. While one academic administrator reported that the organization of the content was unclear, all other users agreed that the content was clearly organized. While one instructional employee did not find the content useful, all other users agreed that the content was useful to their professional activities. One user commented that the pages provided concise summaries plus depth when desired. Another user noted that the graphics were “clear, simple, but distinctive.” A third user commented that the information would be useful for accommodating a student with learning disabilities.

The final two items of the **Info Pages** section of the post-session survey were open-ended questions. These questions invited users to discuss the strengths of this component and recommend changes that should be made to it. [Table 30](#) presents the comments made by users at the end of the first section of the post-session survey.

Twenty-eight users discussed the strengths of the **Info Pages** component. One user commented that the section contained a “lot of legal cases” and two users commented on the discussion forums and **Faculty Guide**, rather discussing the strengths of the **Info Pages** component. Another administrator commented on the attractiveness of the WPSS.

Seven users commented on the comprehensiveness of the information, while 13 users noted the clear organization and concise information within the **Info Pages** component. Ten users noted the ease of finding information using this component. One instructional employee commented on the “excellent navigation features,” while two administrators commented on the quality of hyperlinks. One instructional employee appreciated the national resources available, while another instructional employee valued the ability to contact experts for further assistance. Two administrators indicated that the **Campus Policy** area was a strength of the **Info Pages** component and one administrator found the **Legal Implications** area helpful.

Sixteen users recommended changes that should be made to the **Info Pages** component. While the majority of comments were about the **Info Pages** component, a few users discussed other components of the WPSS instead. Recommendations

related to the **Info Pages** component are addressed below, while recommendations about areas of the WPSS are addressed later in this section.

One user noted the need to keep the section updated. Another user indicated the content in the **Info Pages** component was a “little stilted in places,” but that this was due to the nature of the subject matter. A third user noted that the specifics of information in this component were not clear. These recommendations did not identify specific changes to the **Info Pages** component so project staff did not address them at this time.

Two users suggested including more information in the **Info Pages** component. One instructional employee suggested including information about state laws and positive statement about UK’s desire for participation by students with learning disabilities. Another user suggested the inclusion of more information about physical disabilities to “balance” the information about learning disabilities in this component. All areas of the **Info Pages** component had not been developed prior to this phase. Thus, these suggestions were not implemented at this time.

Four users recommend changes to the design of the **Info Pages** component. While one user suggested the use of more color, another user recommended the use of better graphics and fonts. A third user recommended simplifying the design. These recommendations were based on personal preference and thus were not implemented. A fourth user suggested increasing the font size or providing the user with a JavaScript to increase the font if desired. Since the WPSS was designed using style sheets and a user could use browser features to enlarge the font, this recommendation was deemed unnecessary.

Five users made recommendations for revisions to the navigation features provided in the **Info Pages** component. One administrator recommended the use of a “crumb trail” to aid navigation, rather than headers. To provide users a clearer picture of the relative location of pages in the **Info Pages** component, the sub-navigation menus at the top and bottom of these pages were changed to a breadcrumb trail that shows the path followed by the user to access the page.

Another administrator suggested making the **Campus Policy** link more prominent. All areas in the **Info Pages** component were given the same level of

attention because the WPSS was designed for all postsecondary personnel, not just those interested in campus policy.

Two users recommended testing to ensure that all hyperlinks work within the section. Hyperlinks in the WPSS were tested repeatedly prior to posting. These users, however, were referring to hyperlinks to areas in the **Info Pages** component that have not been developed. When they are added to the WPSS, hyperlinks will be checked throughout the WPSS to ensure that they are functioning properly.

An instructional employee suggested including a feature that allowed the user to “type a question and get some help or some pointers.” While this was an excellent recommendation, it was deemed infeasible for two reasons: (a) **Info Pages** areas that provide tips for etiquette and instructional accommodations have not been developed; and (b) such a feature would require an expert system which is beyond the scope of this project.

In the second section of the post-session survey, users were asked to assess the **Info Search** component of the WPSS with respect to the elements of motivation, design, and navigation. [Table 31](#) presents users’ responses to this section of the post-session survey. Nearly all users agreed that the keyword search feature was easy to use and the majority of users agreed that it retrieved relevant and useful information. An auxiliary service administrator who reported that the keyword search feature was difficult and did not retrieve relevant or useful information commented that she “came up empty-handed.” An instructional employee who reported the retrieved information was not relevant commented that no results were obtained for an unknown reason. Three users indicated that they did not use the keyword search feature, while a fourth user indicated that she did not understand the meaning of keyword search feature. While one user indicated he did not notice the search feature initially, an instructional employee commented that it was easy to search.

The majority of users agreed that they liked the format of the search pages and retrieved information. An academic administrator who did not like either format commented that the format of the search pages were “several steps down in sophistication” and “harder to read.” The same auxiliary service administrator who “came up empty-handed” using the search features did not like the format of the search

pages. Another user commented that he had to check to assure that he was not in the UK Library pages when viewing retrieved information.

Nearly all users agreed that the topical listings on search pages were useful and that navigation features were helpful. The same auxiliary service administrator who “came up empty-handed” using the search features did not find the navigation features in the **Info Search** component to be helpful. One user noted that the topical listings were logical and allowed room for additions in the future. Another user indicated that the topical listings “seemed redundant.”

The final two items of the **Info Search** section of the post-session survey were open-ended questions. These questions invited users to discuss the strengths of this component and recommend changes that should be made to it. [Table 32](#) presents comments made by users at the end of the second section on the post-session survey. Eighteen users discussed the strengths of the **Info Search** component.

One user commented that all of the previous survey items about the **Info Search** component were strengths, while another user noted that it was a “needed item.” A third user commented that the **Info Search** component was straightforward. Three users reported that the section was clearly organized and that the search feature functioned correctly. One user, however, questioned whether it was simply the UK Site Search. Another user noted the search features were consistent in “look and feel” with UK’s search engine.

Two users commented on the depth of data included in the **Info Search** component, while another user commented that the section provided information for those conducting detailed searches. An instructional employee commented specifically on the currency of data included in this component. This same user noted the inclusion of brief overviews of articles and court cases as a benefit. Two users reported that strengths of the **Info Search** component were its ease of use and the topical listings on the search pages. One instructional employee commented that the listings helped her to navigate.

Twelve users recommended changes that should be made to the **Info Search** component. One user noted that the topical listings were “too vague” to assist the user. Four users commented on difficulties using the search, especially locating campus

resources in the **Services and Experts** area. These difficulties were caused by server errors and faulty HTML code on the **Services and Experts** search page that were resolved at the end of the field trial phase. Two users suggested explaining the search features. This recommendation was deemed unnecessary because the search pages contained a hyperlink to information about the search feature in the **Site Tips** section.

Five users recommended changes to the design and layout of pages in the **Info Search** component. One user suggesting using “better graphics.” Two users commented on the color-coding used within the WPSS. Neither user immediately noticed the use of the color red to distinguish the **Info Search** component. These recommendations were based on personal preference and thus were not implemented during this phase.

Another user recommended matching the design of the search pages to the rest of the WPSS. While the search results page had a different design than the rest of the WPSS, it was not possible to redesign this page since it would require the UK Webmaster to create a new design to be used by the UK Web site.

An instructional employee suggested adding room for subcategories under the topical listings on the search pages. While there are no subcategories listed on the topical listings, the design of the search pages would allow the addition of subcategories if necessary.

In the third section of the post-session survey, users were asked to assess the **Viewpoints** component of the WPSS with respect to the elements of motivation, design, navigation, and media. [Table 33](#) presents users’ responses to this section of the post-session survey. Nearly all of the users agreed that the format of the story responses was useful. All users agreed that the navigation features were helpful.

All users agreed that the stories held their interest and that they liked the format of the story pages. One user commented that the story titles were not descriptive and that he relied on the story captions for content. Another user reported that the stories were the best part of the WPSS.

The majority of users agreed that the media enhanced the content in the **Viewpoints** component. An instructional employee who reported that the media did not enhance the content commented that the media was “redundant” and “slow.” One user

reported that she was unable to access the audio on her computer, while another user indicated that she disliked audio on computers.

The majority of users agreed that the stories caused them to explore their attitudes about disability and accommodation. One instructional employee commented that while the stories did not cause him explore his attitudes, they were “nice to read.” Another user noted that she did not read all the stories.

The final two items of the **Viewpoints** section of the post-session survey were open-ended questions. These questions invited users to discuss the strengths of this component and recommend changes that should be made to it. [Table 34](#) presents users’ comments at the end of the third section of the post-session survey.

Twenty-two users discussed the strengths of the **Viewpoints** component. One user commented that the component seemed “well designed.” Two users reported on the ease of navigation, while another user noted its accessibility. One instructional employee indicated that it was a “nice addition.”

Five users commented that the stories were good resources to inform campus personnel, especially those who are not accustomed to thinking about disability issues. One user reported that the “value of the website comes through quickly here.” Four users commented on the range of opinions and experiences presented in the stories. Six users suggested that the **Viewpoints** component personalized disability issues, while three users noted that it provided a “real world perspective.” One user commented that the stories are a “clear depiction of common problems set in an easily understood format.” An administrator commented on the “interest of features” and the timeliness of the information. Another administrator commented on the student perspectives represented in the **Balancing Acts** story.

Ten users recommended changes in the **Viewpoints** component. One user suggested the use of “better graphics” and the inclusion of a brief summary for each story. Neither recommendation was acted upon because the first was a personal preference and the second was unnecessary since a brief summary was provided for each story on the **Story Index** pages.

Another user recommended adding video clips to the stories or more pictures if broadband connections were not available. The WPSS was intentionally designed

without video clips and with few graphics to allow easy access by users with limited technical skills as well as users accessing the WPSS with computer that have slow connections and limited memory.

One user suggested providing links to other stories within the component so that the user did not have to return to the **Story Index** pages to select a new story. Because the sub-navigation menu within stories was designed to navigate to other parts of the same story, this recommendation was deemed infeasible.

Three users recommended adding more stories. New stories focused on different disabilities and disability issues related to accommodation at the postsecondary level will be added to the **Viewpoints** component on a regular basis.

One user questioned whether the stories were real or manufactured. If they were manufactured, she suggested adding real stories so the user “doesn’t feel manipulated.” Since stories in this section were based on real-life accounts from students with disabilities, no changes were required in the section based on this comment.

An instructional employee commented that the **Similar Difficulties** story was confusing because the disability was not initially identified. Since each person with a disability has different strengths and weaknesses, the WPSS was designed using the functional model (Blackhurst & Lahm, 2000) as an underlying theme. Thus, identification of the student’s disability was not deemed necessary in stories.

Another instructional employee reported that the writing was a “bit didactic” and some of the story responses were a “bit pat.” This is an isolated recommendation that was not implemented.

The fourth and final section of the post-session survey contained four open-ended questions. These questions invited users to discuss the strengths and weaknesses of the WPSS, recommend improvements that should be made to it, and provide additional comments. [Table 35](#) presents users’ comments made in this section of the survey.

Twenty-five users discussed the strengths of the WPSS. One user commented that the WPSS seemed “useful for the stated purpose,” while another user reported that the WPSS would be “very beneficial as a resource for those grappling w/ issues of disability accommodation.” A third user rated the WPSS as “faculty-friendly.”

Two users found the WPSS attractive, while one user commented on the “strong” graphics and “bold” colors. Nine users commented on the breadth and depth of information provided in the WPSS. According to one administrator, the WPSS provided “one-stop shopping.” Another administrator noted the conciseness and accuracy of information provided. Four users reported that the WPSS answered questions quickly. Five users commented on the clear and concise organization of the WPSS, while nine users noted its ease of use and navigation.

Several users commented on specific areas of the WPSS. Two users made comments specific to the **Info Pages** component. One user noted the inclusion of “key points” of campus policy, while the other user appreciated the policy and law contained in this section. A third user commented on the opportunity to gain others’ input via the **Info Search** and **Express Yourself** components. A fourth user noted the **Viewpoints** component and **FAQ** section as strengths of the WPSS. A fifth user indicated that the **Site Help** section was great, but that it should be labeled **Site Map** instead.

Twenty users discussed the weaknesses of the WPSS. One user commented that weaknesses were addressed in previous sections of the post-session survey. A second user was concerned that the in-session questionnaire implied that users were expected to apply or interpret laws and legal cases. Two users were concerned with the publicity of the WPSS and ability of campus personnel to access it, especially from the UK Home Page.

Four users noted technical problems as weaknesses. One user reported that some parts of the WPSS did not work, while another user indicated that some items and searches take a long time to load. A third user indicated that the **Campus Resources** hyperlink on the **Services and Experts** search page in the **Info Search** component did not function properly. A fourth user reported that she did not understand the **Info Search** component because it did not function properly. These difficulties were caused by server errors and faulty HTML code on the **Services and Experts** search page that were resolved at the end of the field trial phase.

One user reported that some information was difficult to access using the WPSS, while another user commented that she did not find “very much practical” information to assist in accommodating a student with a disability. A third user reported that the WPSS

was not clear on specific issues. A fourth user suggested combining the information provided in the **Disability Rights Laws** and **Legal Implications** areas of the **Info Pages** component. A fifth user recommended dividing the information on pages in the **Campus Policy** area of the **Info Pages** component into subsections according disability type. The **Info Pages** component was not complete prior to the field trial phase. The first three recommendations should be addressed when content about providing instructional accommodations, assistive technology, and etiquette are added to this component. The other two recommendations are isolated recommendation and thus were deemed unnecessary at this time.

One user found the WPSS to be unattractive, while another user found the format of the WPSS to be “somewhat confusing.” These weaknesses were not acted upon because they were isolated comments based upon personal preference.

One user commented on the difference between the formats of the search pages, search result pages, and retrieved information pages in the **Info Search** component. While the search results page had a different design than the other pages in the **Info Search** section, it was not possible to redesign this page since it would require the UK Webmaster to create a new design to be used by the UK Web site.

Another user reported that the color-coding was a “bit unnecessary” and suggested using headings instead of colors to distinguish sections of the WPSS. The reason behind this recommendation was unclear since page headers and montages were used along with the colors to identify components of the WPSS.

Fifteen users recommended improvements that should be made to the WPSS. One user commented that only “minor adjustments” were needed to the WPSS. A second user suggested the WPSS be linked to the UK Web site, while a third user recommended obtaining feedback from users after the WPSS has been in use for a year or two.

While one user recommended condensing the information contained within the WPSS, seven users suggested the addition of content to the WPSS. One user recommended adding more directions to legal counsel and disability support services on campus, while a second user suggested including more stories in the **Viewpoints** component. A third user requested the addition of a section specifically for faculty on

accommodating students with disabilities. A fourth user suggested devoting a page to UK success stories. The **Info Pages** component was not complete prior to this phase. Additional content related to interacting with individuals with disabilities, providing instructional accommodations, and creating accessible environments will be added to this component. In addition, new stories, including “success stories,” will be added to the **Viewpoints** component on a regular basis.

A fifth user recommended providing a directory of key campus personnel, while a sixth user recommended adding a “getting started” section for novices. A seventh user recommended offering “categories of choice” for faculty, students, and administrators. These recommendations were deemed unnecessary for two reasons: (a) the **FAQ** section provided a directory of key campus personnel and a starting point for novice users and (b) all areas listed on the left navigation menu could be “categories of choice” for faculty, students, and administrators depending on individual needs.

An administrator questioned the inclusion of “so much legal stuff.” This comment was reasonable since the areas developed thus far in the **Info Pages** component were focused on legal issues. Additional content related to interacting with individuals with disabilities, providing instructional accommodations, and creating accessible environments will be added to this component, which will lessen the focus of the WPSS on legal issues.

A second administrator recommended the elimination of the left navigation menu and the reliance on **Info Pages** component, which contain a “more detailed account of the information.” This recommendation was not implemented because removal of the left navigation menu would limit user control and freedom to access information based on their own preferences.

A third administrator indicated the **FAQ** section was “buried” and need to be made more accessible to users. While the **FAQ** section was accessible from the site navigation menu at the top of each page in the WPSS and was highlighted on the **Entry Page**, the **FAQ** section was renamed **Faculty Guide** to better reflect the purpose of this section of the WPSS.

Two users recommended changes to the design of the WPSS. An administrator suggested the use of “better graphics” within the WPSS. This was an isolated

recommendation based on personal preference and thus was not implemented. An instructional employee indicated that the color-coding was a “bit unnecessary” and suggested using headings instead of colors to distinguish components of the WPSS. The reason behind this recommendation was unclear since page headers and montages were used along with the colors to identify components of the WPSS.

Twelve users provided additional comments about the WPSS. Three users thanked the investigator for their participation in the research. One user recommended the use of a different source for audio files, while a second user suggested clarifying the WPSS structure via stronger design elements. A third recommended using text along the border of the left navigation menu to reinforce the color codes for various WPSS components. A fourth user reported that he did not use the search feature in the WPSS.

Six users discussed the usefulness of the WPSS. One administrator commented that the WPSS was a “great tool for the university community,” while a second administrator indicated he would use the WPSS as “a source to recommend to faculty, students, & others.” A third administrator indicated that the WPSS would be a “valuable resource for advisors.” One instructional employee recommended that the WPSS be included in New Faculty Orientation, while a second instructional employee recommended making all faculty and staff aware of the WPSS as soon as possible. A third instructional employee reported that the WPSS “could be much more valuable to someone with little or no experience in dealing with lots of different disabilities.”

Summary. Users generally agreed that the **Info Pages** component was attractive, easy to navigate and understand, interesting, clearly organized, and useful in their professional activities. With regard to the **Info Search** component, users also agreed that the keyword search feature was easy to use, the retrieved information was relevant and useful, the format of the search pages and retrieved information was acceptable, the topical listings were useful, and the navigations features were helpful. Users agreed that the **Viewpoints** component held their interest, caused them to explore their attitudes about disabilities and accommodation, and was easy to navigate. Finally, users agreed that the story responses opening a new window was useful, that the media enhanced the content, and that they liked the story page format in the **Viewpoints** component. Because the users’ perceptions of the WPSS were positive

and the majority of negative ratings (i.e., 16 of 21 negative ratings) were attributed to five users, no changes in the WPSS were necessary.

Analysis of user comments on the post-session survey, however, indicated that there were areas in the WPSS that required revision. Based on these data, three actions were taken by project staff to improve the WPSS. First, the sub-navigation menus at the top and bottom of pages in the **Info Pages** component were changed to a breadcrumb trail that shows the path followed by the user to access the page. Second, faulty HTML code for the campus resources listing on the **Services and Experts** search page was revised. Third, the **FAQ** section was renamed **Faculty Guide** to better reflect the purpose of this section of the WPSS.

Research Question #6: According to Representatives of the Target Population, What Difficulties Did Users Encounter While Interacting with the WPSS?

To assess the difficulties users encountered while interacting with the WPSS, data were collected during the individual evaluation sessions. Users recorded the time when they began to locate an answer and when they ended responding to questions on the in-session questionnaire. In addition, the investigator collected data from user comments on in-session questionnaires and post-session surveys submitted during the field trial phase.

[Table 36](#) presents the amount of time required by users to respond to questions on the in-session questionnaire. The average amount of time per question required by users to locate responses on the in-session questionnaire did not appear to present any difficulties during the field trial phase. Auxiliary service administrators spent an average of 3.4 minutes per question exploring the WPSS to locate responses to the in-session questionnaire. Instructional personnel spent an average of 2.5 minutes per question exploring the WPSS, while academic administrators spent an average of 2.8 minutes per question locating responses to the in-session questionnaire.

For Question 1, which required the user to explore the **Info Pages** component of the WPSS for campus policy, the mean time required for users to locate an answer within the WPSS was 3.2 minutes. While the average of amount of time required by academic administrators was low (i.e., mean of 2.8 minutes), it was inflated because one administrator spent nine minutes exploring the WPSS to locate a response. The

average amount of time required for users to respond to the second question on the in-session questionnaire, which required the user to explore the **Info Pages** component of the WPSS to locate the process for determining whether an accommodation is reasonable, was 3.2 minutes.

For Question 3, which required the user to explore the **Info Pages** and **Info Search** components for information about disability rights laws and legal cases, field trial users required an average of 3.1 minutes to locate a response. The average of amount of time required by auxiliary service administrators was inflated because an auxiliary service administrator spent eight minutes locating a response to the third question.

Users spent an average of 2.1 minutes exploring the WPSS to locate a response to the fourth question, which required the user to explore the **Info Search** component of the WPSS to locate literature related to the scenario presented at the beginning of the in-session questionnaire. The mean amount of time spent by academic administrators and instructional personnel were inflated because a second academic administrator required seven minutes and an instructional employee spent eight minutes locating a response to this question.

For Question 5, which required the user to explore the **Services and Experts** area of the **Info Search** component to find UK personnel who might be able to provide assistance in the scenario presented at the beginning of the in-session questionnaire, an average of 2.3 minutes was required by users to locate an answer. Again, the mean amount of time spent by academic administrators and instructional personnel were inflated because a third academic administrator required eight minutes and the same instructional employee spent nine minutes locating a response to this question.

Users spent an average of 3.2 minutes locating a response to the sixth question, which required the user to explore the **Express Yourself** component of the WPSS for information about discussion forums. While the mean amount of time spent by academic administrators was low (i.e., mean of 3.3 minutes), it was inflated because a fourth academic administrator spent 13 minutes locating a response to the Question 6. Users required 2.6 minutes to locate a response to the final question on the in-session

questionnaire, which required the user to explore the **Viewpoints** component of the WPSS for students' viewpoints.

Auxiliary service administrators appeared to have some difficulty locating a response to the second question on the in-session questionnaire. They required twice as much time as the other two groups to locate a response to this question. A plausible explanation is that instructional personnel and academic administrators had a higher probability of beginning the exploration process on the **Instructional Accommodation Policy** page, which contained the necessary information.

While one user did not record responses to the questions on the in-session questionnaire, six users did not record the computer platform or Web browser used to review the WPSS. One user returned a post-session survey that was missing the second and fourth page. These pages included the last three questions about the **Info Pages** component, the first two questions about the **Info Search** component, and the first seven questions about the **Viewpoints** component. A second user commented that she was not clear about the direction for responding to questions on the in-session questionnaire. A third user included a requested for clarification of the first question on the in-session questionnaire, while a fourth user noted that he was not clear about the sixth item in the **Info Search** section of the post-session survey. Four users did not respond to items in the **Viewpoints** section of the post-session survey and seven users did not respond to items in the **Info Search** section of the post-session survey. Since these errors were isolated, their cause was unknown. Consequently, no changes were made to the evaluation instruments.

Based on an analysis of user comments on evaluation instruments, the majority of difficulties were related to technical problems. Twelve users reported problems using the UK search engine to search the **Info Search** component. Ten users reported errors when trying to use the **Campus Resources** hyperlink on the **Services and Experts** search page. While one user was unable to obtain search results using the **Related Literature** search page, another was unable to obtain any results using the three search pages (i.e., **Services and Experts**, **Related Literature**, and **Legal Cases**) in the **Info Search** component. These difficulties were due to server errors and faulty

HTML code on the **Services and Experts** search page, which were resolved at the end of the field trial phase.

Two users were not able to access the internal discussion forums in the **Express Yourself** component. This technical difficulty also was due to a server error.

One user was unable to access the **Viewpoints** component of the WPSS and had difficulty returning to the **Entry Page** from a third level page in the **Info Pages** component. A second user commented that the purple line under the montage in the **Info Pages** component appeared blue on her computer screen. This same user noted that initially she was unaware of the featured items and stories on the **Entry Page** of the WPSS because she did not scroll down the page. These isolated problems have not occurred in previous phases and their cause was unknown.

Another user reported that the hyperlinks to several **Info Pages** areas (e.g., **Etiquette, Instructional Accommodations**) did not work. This was not an error because these areas of the WPSS had not been developed prior to this phase. When the areas are created, the title in the left navigation menu will be changed to a hyperlink to signify their availability.

One user had difficulty typing the URL for the WPSS in the address field of his Web browser window. Since he submitted the evaluation instruments, it is assumed that he was able to resolve this problem independently.

Three users reported technical problem due to missing or slow audio in the **Viewpoints** component. It may be that the users' computers did not have an application available for accessing audio files. Another possibility is that the users did not have the sound on their computer turned on prior to accessing the audio and did not realize that it was turned off. A final explanation is that the users' computers did not have sufficient random access memory to access the audio files.

Summary. The main difficulties encountered during the field trial phase consisted of the amount of time required by auxiliary service administrators to locate a response to the second question on the in-session questionnaire, some confusion over the evaluation instruments, and a few technical problems. One action was taken to alleviate these difficulties. Faulty HTML code for the campus resources listing on the **Services and Experts** search page was revised.

Revisions Made to the WPSS

After all data were collected during the field trial phase, ratings and comments were analyzed to determine improvements needed in the WPSS. A report of current data was shared with project staff each week. Project staff discussed the data and then rated them based on their relevancy and urgency. Because users' ratings of the WPSS and its components were positive on Likert-type scale questions, particular emphasis was placed on open response comments and difficulties reported by users.

Based on user comments during the field trial phase, project staff addressed technical difficulties reported. Since ten users noted problems with the **Campus Resources** hyperlink on the **Services and Experts** search page in the **Info Search** component, project staff compared the HTML code of this page to the other two search pages. Upon review, an additional set of parenthesis was found in the HTML code for the topical listing on the **Services and Experts** search page. The other search-related problems reported by users were attributed to problems with the index of the UK search engine, which was rebuilt during this phase. The discussion forums in the **Express Yourself** component, which were inaccessible to several users due to server errors, were rebuilt at the end of this phase as well.

Since about half of the users were only somewhat clear about the organization of the **Info Page** component, several revisions were made to navigation menus in this section. To provide users a clearer picture of the relative location of pages in the **Info Pages** component, the sub-navigation menus at the top and bottom of these pages were changed to a breadcrumb trail that shows the path followed by the user to access the page. Several titles on the left navigation menu were changed to clarify the informational areas available in the **Info Pages** component. The **Physical Accessibility** area was combined with information on Web accessibility from the **Accessible Technology** area and renamed **Accessibility Guidelines**. The **Accessible Technology** area was renamed **Assistive Technology** to better reflect the information contained in this area after the removal of the Web accessibility content. [Figure 14](#) illustrates these changes in the navigation menus for the **Info Pages** component.

Based on user comments and responses to the questions on the in-session questionnaire, revisions were made to the site navigation menu. First, the **FAQ** section, which contained the **Faculty Guide**, was renamed **Faculty Guide**. This was deemed necessary because only two users reported use of the **Faculty Guide**, even after it was highlighted on the **Entry Page** during the previous evaluation phase. In order to accommodate the longer name for the **Faculty Guide** section, it was necessary to remove an item from the site navigation menu. The **Site Search** feature was removed as a hyperlink and provided as a search box on the **Entry Page**. This seemed appropriate since the majority of people who access Web sites expect a site to provide a search feature in this manner rather than as a hyperlink to another page (Krug, 2000). Finally, the **Site Help** section was renamed **Site Map**. While only one user discussed this section and the need for a name change, his point about users preferring to navigate via a site map was significant. To ensure that users were aware help was provided, a brief sentence was added to the **Entry Page** to guide novice users to tips about using the WPSS. [Figure 15](#) provides an illustration of the changes made to the site navigation menu on the **Entry Page**.

Table 2. Number of Usability Heuristic Violations Identified by Five Design Reviewers

Usability Heuristics	Number of Usability Heuristic Violations Identified by Design Reviewers							
	Info Pages	View-points	Info Search	Express Yourself	Entry Page	Specific Page(s)	Entire WPSS	Totals
1. Visibility of system status	0	2	1	2	1	3	6	15
2. Speaks user's language	0	1	0	2	3	2	1	9
3. User control & freedom	0	1	0	0	0	0	2	3
4. Consistency & standards	0	2	1	0	1	2	2	8
5. Recognition rather than recall	0	1	0	0	1	0	0	2
6. Flexibility & ease of use	0	2	0	1	3	0	3	9
7. Aesthetic & minimalist design	0	0	0	0	0	4	4	8
8. Progressive level of detail	1	0	0	0	0	1	0	2
9. Help & documentation	0	0	0	1	1	3	2	7
Totals	1	9	2	6	10	15	20	63

Table 3. Responses of Five Content Reviewers on the Info Pages Section

Items	Summary of Responses of Content Reviewers on the Info Pages Section			
	Not Current	Current	Very Current	Total
1. Represents current practice				
Disability Rights Law	0	2	3	5
Campus Policy	0	1	1	2
Legal Implications	0	4	1	5
Cases Index	0	4	1	5
	<u>Not Accurate</u>	<u>Accurate</u>	<u>Very Accurate</u>	<u>Total</u>
2. Provides accurate information				
Disability Rights Law	0	3	2	5
Legal Implications	0	2	3	5
Cases Index	0	3	2	5
	<u>Not Complete</u>	<u>Complete</u>	<u>Very Complete</u>	<u>Total</u>
3. Completeness of information				
Disability Rights Law	0	2	3	5
Disability Rights Law	0	4	1	5
Campus Policy	0	2	3	5
Legal Implications	0	3	2	5
Cases Index				

Table 3 (continued). Responses of Five Content Reviewers on the Info Pages Section

	<u>Not Clear</u>	<u>Clear</u>	<u>Very Clear</u>	<u>Total</u>
4. Clearly communicates information				
Disability Rights Law	0	2	3	5
Campus Policy	0	2	3	5
Legal Implications	0	2	3	5
Cases Index	0	2	3	5
	<u>Not Feasible</u>	<u>Feasible</u>	<u>Very Feasible</u>	<u>Total</u>
5. Feasibility of use	0	2	2	4
	<u>Not Likely</u>	<u>Likely</u>	<u>Very Likely</u>	<u>Total</u>
6. Likely to promote confidence	0	3	1	4
Totals:	0	43	37	80

Table 4. Responses of Five Content Reviewers on the Viewpoints Section

Items	Summary of Response of Content Reviewers on the Viewpoints Section			
	Not Current	Current	Very Current	Total
1. Represent current practice	0	1	4	5
2. Provides accurate information	<u>Not Accurate</u> 0	<u>Accurate</u> 2	<u>Very Accurate</u> 3	<u>Total</u> 5
3. Clearly communicates information	<u>Not Clear</u> 0	<u>Clear</u> 1	<u>Very Clear</u> 4	<u>Total</u> 5
4. Vignettes are sufficiently complex	<u>Not Complex Enough</u> 2	<u>Complex</u> 0	<u>Sufficiently Complex</u> 3	<u>Total</u> 5
5. Helpful in exploring attitude	<u>Not Helpful</u> 1	<u>Helpful</u> 3	<u>Very Helpful</u> 1	<u>Total</u> 5
6. Likely to promote confidence	<u>Not Likely</u> 1	<u>Likely</u> 4	<u>Very Likely</u> 0	<u>Total</u> 5
7. Media supports understanding	<u>Does Not Support</u> 0	<u>Supports Content</u> 4	<u>Strongly Supports</u> 1	<u>Total</u> 5
Totals:	4	15	16	35

Table 5. Responses of Five Content Reviewers on the Info Search Section

Items	Summary of Responses of Content Reviewers on the Info Search Section			
	Not Current	Current	Very Current	Total
1. Represents current practice				
Services and Experts	0	4	1	5
Related Literature	0	4	1	5
	<u>Not Accurate</u>	<u>Accurate</u>	<u>Very Accurate</u>	<u>Total</u>
2. Provides accurate information				
Services and Experts	0	3	2	5
Related Literature	0	3	2	5
	<u>Not Complete</u>	<u>Complete</u>	<u>Sufficiently Complete</u>	<u>Total</u>
3. Completeness of information				
Services and Experts	0	4	1	5
Related Literature	1	3	1	5
	<u>Not Clear</u>	<u>Clear</u>	<u>Very Clear</u>	<u>Total</u>
4. Clearly communicates information				
Services and Experts	0	3	2	5
Related Literature	0	3	2	5

Table 5 (continued). Responses of Five Content Reviewers on the Info Search Section

	<u>Not Feasible</u>	<u>Feasible</u>	<u>Very Feasible</u>	<u>Total</u>
5. Feasibility of use	1	4	0	5
	<u>Not Likely</u>	<u>Likely</u>	<u>Very Likely</u>	<u>Total</u>
6. Likely to promote confidence	1	4	0	5
Totals:	3	35	12	50

Table 6. Responses of Five Content Reviewers on the WPSS

Items	Summary of Responses of Content Reviewers on the WPSS			
	Not Appropriate	Appropriate	Very Appropriate	Total
1. Appropriateness for:				
Academic Administrators	0	2	3	5
Instructional Personnel	0	1	3	4
Auxiliary Service Administrators	0	0	4	4
2. Likelihood of enhancing accommodations	<u>Not Likely</u> 0	<u>Likely</u> 3	<u>Very Likely</u> 2	<u>Total</u> 5
3. Representative of current views	<u>Not Current</u> 0	<u>Current</u> 0	<u>Very Current</u> 4	<u>Total</u> 4
4. Accurately represents best practices	<u>Not Accurate</u> 0	<u>Accurate</u> 1	<u>Very Accurate</u> 3	<u>Total</u> 4
5. Sufficiently complete	<u>Not Complete</u> 0	<u>Complete</u> 3	<u>Very Complete</u> 2	<u>Total</u> 5
6. Feasibility of use	<u>Not Feasible</u> 0	<u>Feasible</u> 4	<u>Very Feasible</u> 0	<u>Total</u> 4
7. Media supports understanding	<u>Does Not Support</u> 0	<u>Supports Content</u> 4	<u>Strongly Supports</u> 1	<u>Total</u> 5
Totals:	0	18	22	40

Table 7. Strengths, Weaknesses, Improvements, and Additional Comments from Five Content Reviewers

Items	Summary of Comments from Content Reviewers
Strengths	<ol style="list-style-type: none"> 1. Good targeting of users. 2. Wide range of info available. 3. Good to start simple and provide links to more complex. 4. Good selection of topics. 5. Clarity of the information presented. 6. Information is presented in layperson’s terms. 7. Clean visual effects. 8. Website is not cluttered. 9. Ease with which you can move within a section – and to other sections. 10. I think the WPSS can be a tremendous asset to administrators, instructional personnel, parents and high school students. 11. Very thorough and user friendly. 12. Very easy to access information. 13. Information is clear and like the way that different viewpoints are expressed to get individual to think about where he or she is on the spectrum of views.
Weaknesses	<ol style="list-style-type: none"> 1. A little annoying to navigate in the site – I found the site visually distracting. At times there were elements where I did not see the relationship to the content (e.g., headers at the top of viewpoint

Table 7 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Five Content Reviewers

Weaknesses (continued)	<p>stories.) There also seemed to me to be too many visual elements at any given time (double nav bars, right hand related link boxes).</p> <ol style="list-style-type: none"> 2. The Viewpoints stories seemed a little predictable. Presenting attitudes and then clicking into why those attitudes are wrong wouldn't seem calculated to get the desired response from the reader. I suspect one might be more inclined to stop clicking if the insight gained was "You're wrong and here's why!" 3. I had trouble finding information that might answer specific hypothetical questions. I'm not an expert on search engines so I can't be much help. When I entered commonly used terms such as "Electronic Reader" or even more specific "Kurzweil" or "WYNN" I got nothing. I got a few hits for "scribe" and many unrelated hits for "sign language interpreter." 4. None. 5. I am very concerned that the links to some of the more important accessibility issues do not work. 6. Make sure that not too much information is on page. Individuals with specific LD problems may become overwhelmed by too much on screen.
Improvements	<ol style="list-style-type: none"> 1. Try to simplify the format and lose extraneous visual objects. 2. Integrate the audio clips with the Viewpoint stories. 3. I'm not sure the Viewpoints stories will change behaviors. They might. It will be interesting to evaluate. 4. Not sure how to make the search more valuable. 5. Maybe it was me although I usually am successful when I venture on to Google or other web based engines.

Table 7 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Five Content Reviewers

Improvements (continued)	<ol style="list-style-type: none"> 6. In Viewpoints, reevaluate the titles you use. I can't remember them exactly but found them to be less than descriptive. 7. None at this time. 8. I am still unable to open the following pages: Physical Accessibility, Etiquette, Instructional Accommodation, and Accessible Technology. 9. In Viewpoints it might be helpful to add an explanation of the purpose of the section on the front page.
Additional Comments	<ol style="list-style-type: none"> 1. I think you are definitely well down the right track. I like the template concept and think you are hitting the right issues in the viewpoint section. You've undertaken a huge task and are clearly making progress toward improving the experience and outcomes of individuals who experience college with a disability. Thank you for your work and asking for comments. Best wishes. 2. Thanks for letting me participate. You are doing a great job. I really like the site.

Table 8. Number of Accessibility Heuristic Violations Identified by 15 Individuals with Disabilities

Accessibility Heuristics	Number of Accessibility Heuristic Violations Identified by Individuals with Disabilities							
	Info Pages	View-points	Info Search	Express Yourself	Entry Page	Specific Page(s)	Entire WPSS	Totals
1. Text equivalent provided	0	1	0	0	1	4	4	10
2. Content is clear w/out use of colors	1	1	1	0	1	0	5	9
3. Simple & clear language	2	0	0	0	1	6	2	11
4. Clear & consistent navigation	0	0	0	1	1	5	5	12
5. Context & orientation information provided	0	2	1	0	1	4	0	8
Totals:	3	4	2	1	5	19	16	50

Table 9. Responses of 15 Individuals with Disabilities on the WPSS

Items	Summary of Responses of Individuals with Disabilities on the WPSS			
	Not Appropriate	Appropriate	Very Appropriate	Total
1. Appropriateness for postsecondary personnel	1	7	7	15
2. Likelihood of enhancing accommodations	<u>Not Likely</u>	<u>Likely</u>	<u>Very Likely</u>	<u>Total</u>
	1	6	7	14
3. Representative of current views on accommodation	<u>Not Current</u>	<u>Current</u>	<u>Very Current</u>	<u>Total</u>
	0	7	7	14
4. Accurately represents best practices	<u>Not Accurate</u>	<u>Accurate</u>	<u>Very Accurate</u>	<u>Total</u>
	0	5	9	14
5. Feasibility of use	<u>Not Feasible</u>	<u>Feasible</u>	<u>Very Feasible</u>	<u>Total</u>
	1	3	9	13
Totals:	3	28	39	70

Table 10. Strengths, Weaknesses, Improvements, and Additional Comments from 15 Individuals with Disabilities

Items	Summary of Comments from Individuals with Disabilities
Strengths	<ol style="list-style-type: none"> 1. Information current and accurate. 2. Could be quite useful for professors and personnel about what to accommodate. 3. The WPSS site offers a useful collection of resources, information, and links. 4. Starting point for people with questions. 5. Offers information concerning where to go for problem solving. 6. See comments for questions 1 and 2. Two is a strength only if the WPSS is well publicized. 7. Easy to read and understand. 8. The info exchange is a much needed area; I especially like how you can get involved in a discussion with others who face disabilities. (N=2) 9. The Services and Experts section is a much needed area. 10. Very comprehensive; Sea of information; Wealth of information about an important topic; Has lots of information available for browsing or searching (N=4). 11. It offers viewpoints from different individuals (deans, instructors, disabled students); The website touches base on all aspects of disabilities. (N=2) 12. I was amazed. I didn't know what was there. 13. The major strengths that the WPSS explains and goes into detail about the laws for students with disabilities; Legal issues and discussions of campus policies. (N=2)

Table 10 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from 15 Individuals with Disabilities

Strengths (continued)	<ol style="list-style-type: none"> 14. Links to useful resources. 15. It is also has in taking individual to the exact information they are looking through pictures and hyperlinks. 16. Personal stories of individuals with disabilities; I especially like how there are comments made from actual students with disabilities. (N=2) 17. Colorful site which is fairly easy to navigate through. 18. Simply the fact that it's being done, anyway to get this information out is a huge help to students with all types of problems. 19. Nice colors. 20. Drawing the Line: greatest strength; No Manual: very good. 21. I think that there are many strengths in this website. It is very easy to find information and the website is laid out well so a person can do this.
Weaknesses	<ol style="list-style-type: none"> 1. Site is dicey for a visually impaired person to navigate. 2. Some sections are without personal touch. 3. ?? 4. The site has many nooks and crannies – this can make it cumbersome and even tedious to navigate. I found Viewpoints particularly cumbersome; The downside of offering so much information is that there are a lot of submenus and a lot of text. Administrators and faculty – who have little time or patience – want fast answers and might prefer more direct, immediate, and

Table 10 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from 15 Individuals with Disabilities

Weaknesses (continued)	<p>simplified access to information. (N=2)</p> <ol style="list-style-type: none"> 5. White lettering. 6. Addition for student forum; A minor weakness is that you need more forums. (N=2) 7. Pictures need text boxes. 8. Relate ADA Title II to post-secondary ed. 9. The welcome page is filled with ambiguity and makes one wonder why they are reading it, and what it is. 10. I wish all students (disabled and perspective) knew about the site. 11. Overly busy on certain pages/ a lot of reading. 12. I wasn't sure how relevant it was to me as a person with a disability. 13. No concrete directions for how faculty members should respond to student when approached about providing accommodations. 14. Look at last page. 15. I don't really see any weaknesses. The only thing I can think of is how people will find out about this website.
Improvements	<ol style="list-style-type: none"> 1. See above comments. 2. Take care of links; Review each section for consistency of format. For instance in the links " for the

Table 10 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from 15 Individuals with Disabilities

Improvements (continued)	IDEA FAQs take the user to a page with a description and the link to a site – in other areas (like Rehab Act Section 504 FAQ) – the external links go directly to the linked site. (N=2)
	<ol style="list-style-type: none"> 3. More personal touch. 4. Not every link and title on every page. 5. It looks great to me; Other than technical, nothing; I think the website is thorough with its information and laid out well. I don't think that any improvements are necessary. (N=3) 6. Simplify navigation and content. 7. Consider having a brief description appear when the user has their mouse positioned on the menu bar items. This would help explain and clarify the purpose for each subsection (maybe use the IDEAPRACTICES.org website as a model). 8. Rather than have the search index items (e.g., Universal Design) go to a page of search hits – consider offering pages of selected links with a brief (one sentence) description for your major topics. Also, the use of Site Search and Info Search as two <u>different</u> pages with slightly different menus is confusing. 9. Consider refining and reducing the section devoted to IDEA with a stronger emphasis on transition plans and secondary to post secondary transition programs (maybe some links to projects. It seems that postsecondary personnel (and students) would be most interested in the elements of IDEA that directly affect postsecondary admission, adjustment, and service delivery. 10. Some sections of “tips” seem to be incomplete – this may be because the site is still under development. Eventually, each area will need to be checked for completeness.

Table 10 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from 15 Individuals with Disabilities

Improvements (continued)	<ol style="list-style-type: none"> 11. Consider the use of video or even supporting and complementary off line activities to focus and use with the Viewpoints section. The concept is good but I'm not sure about the usability. 12. Provide names and numbers of companies who provide personal care attendants. 13. Be more specific on welcome page. Say what it is and why it is important. Lose the "magazine touch" and gear it more towards a question and answer format. That kind of seems to be what you're after, but why not be more plain and simple like this. Target your audience and don't make them dig through the fluff to get answers; Make it clearer the objective of the site – especially if you expect it to be used by students. (N=2) 14. All disabled student need to know about this site. 15. I would recommend that the WPSS would be mandatory for postsecondary personnel to be familiar with according to their students with disabilities. I do not really think that the WPSS needs improvement, except their needs to be a easy way to get it through the UK Web page by using keywords such as ADA, IDEA, disabilities, etc. It should take a person to WPSS web-page. 16. Provide clearer directions to faculty members and administrators on ways they can help – maybe by including quotes from students. 17. Possibly categorize different types of disabilities and accommodations for quicker ease of answer finding. 18. More sites with real information.
Additional Comments	<ol style="list-style-type: none"> 1. Clear out the bugs and you'll have a dynamite site. 2. The WPSS site is comprehensive and has much valuable information. The amount of information presented and navigation issues discussed above made evaluation a very time consuming

Table 10 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from 15 Individuals with Disabilities

Additional Comments (continued)	endeavor. I attempted to (and I think I did) go to each subsection but did not have the time to be as thorough as I would like to have been.
	3. The WPSS site is comprehensive and has much valuable information. The amount of information presented and navigation issues discussed above made evaluation a very time consuming endeavor. I attempted to (and I think I did) go to each subsection but did not have the time to be as thorough as I would like to have been.
	4. Should be required for faculty.
	5. I love your Web Site. I think it will be so beneficial to students, parents, faculty and staff; The WPSS is a wonderful tool for postsecondary personnel for easy access to laws concerning students with disabilities. (N=2)
	6. Despite my negative comments, I like the project. Be aware however, that the greatest website in the world will make no difference to anyone if people don't know about it. Lobby to get links on all UK websites, in all academic departments and in all housing and publications for students with disabilities; This website should be added as a link to go to in the university's main website. I think doing this would be very helpful to current students and to incoming students looking at information on the University. (N=2)
	7. Navigation was easy and straight forward. I especially liked the yellow color highlite when the mouse was over a choice.
	8. I thought the website was really interesting and well laid out. It was easy to find information; Well done, nicely laid out presentation. (N=2)

Table 11. Accuracy Rate and Number of Pages Viewed by One-to-One Users

Questions	Accuracy Rate of One-to-One Users	Number of Pages Viewed to Locate a Response	
		Mean	Range
1. UK's policy on providing accommodations:			
Instructional Personnel ^a	100%	5.8	4-8
Academic Administrators ^a	100%	3.8	2-9
Auxiliary Service Administrators ^a	100%	3.2	2-5
2. Determining whether a requested accommodation is reasonable:			
Instructional Personnel ^a	90%	3.2	1-7
Academic Administrators ^a	70%	3.6	1-6
Auxiliary Service Administrators ^a	50%	6.6	2-10
3. Court cases and/or federal laws to support position:			
Instructional Personnel ^a	90%	4.2	2-8
Academic Administrators ^a	100%	4.4	2-9
Auxiliary Service Administrators ^a	100%	7.2	2-13
4. Literature to help understand situation:			
Instructional Personnel ^a	80%	7.4	1-15
Academic Administrators ^a	100%	6.6	2-14
Auxiliary Service Administrators ^a	100%	5.2	1-13

Table 11 (continued). Accuracy Rate and Number of Pages Viewed by One-to-One Users

Questions	Accuracy Rate of One-to-One Users	Number of Pages Viewed to Locate a Response	
		Mean	Range
5. Individuals on campus to assist in situation:			
Instructional Personnel ^a	90%	3.4	2-5
Academic Administrators ^a	100%	6.4	2-15
Auxiliary Service Administrators ^a	100%	8.8	2-26
6. Location to discuss situation with others anonymously:			
Instructional Personnel ^a	80%	5.8	2-11
Academic Administrators ^a	60%	15.6	4-36
Auxiliary Service Administrators ^a	20%	12.6	2-21
7. How to gain understanding about the student's point of view:			
Instructional Personnel ^a	100%	4.2	1-8
Academic Administrators ^a	100%	10.4	2-27
Auxiliary Service Administrators ^a	90%	7.0	2-15

NOTE: ^a N=5

Table 12. Responses of One-to-One Users on the Info Pages Section

Items	Summary of Responses of One-to-One Users on the Info Pages Section			
	Difficult	Fairly Easy	Very Easy	Total
1. Easy to understand				
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>No</u>	<u>Somewhat</u>	<u>Yes</u>	<u>Total</u>
2. Attractive layout				
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	0	0	5	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
3. Held interest				
Instructional Personnel ^a	0	3	2	5
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	0	0	5	5
	<u>Not At All</u>	<u>Somewhat</u>	<u>Helped a Lot</u>	<u>Total</u>
4. Navigation features helped				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	1	4	5

Table 12 (continued). Responses of One-to-One Users on the Info Pages Section

Items	Summary of Responses of One-to-One Users on the Info Pages Section			
	<u>Unclear</u>	<u>Somewhat Clear</u>	<u>Very Clear</u>	<u>Total</u>
5. Organization clear				
Instructional Personnel ^a	1	0	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
6. Useful to professional activities				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	0	5	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>Totals:</u>			
	1	20	69	90

NOTE: ^a N=5

Table 13. Responses of One-to-One Users on the Info Search Section

Items	Summary of Responses of One-to-One Users on the Info Search Section			
	Difficult	Fairly Easy	Very Easy	Total
1. Easy to search using keyword feature				
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	1	0	4	5
Auxiliary Service Administrators ^a	0	2	3	5
2. Information relevant				
	<u>Not Relevant</u>	<u>Somewhat Relevant</u>	<u>Very Relevant</u>	<u>Total</u>
Instructional Personnel ^a	1	1	3	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	2	3	5
3. Information useful				
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
Instructional Personnel ^a	1	0	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	0	5	5
4. Format of search page				
	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked It a Lot</u>	<u>Total</u>
Instructional Personnel ^a	1	0	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	2	3	5

Table 13 (continued). Responses of One-to-One Users on the Info Search Section

Items	Summary of Responses of One-to-One Users on the Info Search Section			
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
5. Topical listings on search pages				
Instructional Personnel ^a	1	0	4	5
Academic Administrators ^a	0	0	5	5
Auxiliary Service Administrators ^a	0	0	5	5
	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked It a Lot</u>	<u>Total</u>
6. Format of retrieved information				
Instructional Personnel ^a	1	1	3	5
Academic Administrators ^a	1	1	3	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>No</u>	<u>Somewhat</u>	<u>Yes</u>	<u>Total</u>
7. Navigation features helped navigation				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	1	4	5
Totals:	7	22	76	105

NOTE: ^a N=5

Table 14. Responses of One-to-One Users on the Viewpoints Section

Items	Summary of Responses of One-to-One Users ^a on the Viewpoints Section			
	No	Somewhat	Yes	Total
1. Held interest				
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	0	0	5	5
Auxiliary Service Administrators ^a	0	1	4	5
2. Media enhanced content				
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
Instructional Personnel ^a	2	0	3	5
Academic Administrators ^a	1	0	4	5
Auxiliary Service Administrators ^a	0	0	5	5
3. Format of story pages				
	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked it a Lot</u>	<u>Total</u>
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	0	0	5	5
Auxiliary Service Administrators ^a	0	1	4	5
4. Story responses opening new window				
	<u>Not Useful</u>	<u>It Was Acceptable</u>	<u>Very Useful</u>	<u>Total</u>
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	1	0	4	5

Table 14 (continued). Responses of One-to-One Users on the Viewpoints Section

Items	Summary of Responses of One-to-One Users on the Viewpoints Section			
	<u>Not Helpful</u>	<u>Somewhat Helpful</u>	<u>Helped a Lot</u>	<u>Total</u>
5. Navigation features helped navigation				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
6. Explore personal attitudes				
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	0	0	5	5
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
Totals	4	15	71	90

NOTE: ^a N=5

Table 15. Strengths, Weaknesses, Improvements, and Additional Comments from One-to-One Users

Items	Summary of Comments from One-to-One Users ^a
Strengths	<ol style="list-style-type: none"> <li>1. Meeting an important need; The fact that the site exists and can be given as a resource is very important; Provides resources that can respond to questions and provide assistance; The ability to search the site quickly to find information that is key to helping a student or colleague navigate university policy and to learn more about how the university can help; Knowing someone has organized and presented info on this topic in a very useful fashion is inviting; It provided faculty with access to information of policies, laws, strategies, literature, etc. It provided faculty with a means to have a conversation with other faculty about students with disabilities. (N=6) <li>2. Navigability (once I got oriented) was good; Very navigable. Intuitive; Easy to navigate. (N=3) <li>3. References and research excellent; Listing of resources and literature very helpful; Hyperlinks to extra-university resources are very helpful. (N=3) <li>4. Legalities good; Variety of information including federal to local and campus resources/policies. (N=2) <li>5. Viewpoints a powerful touch!; The stories are significant additions. I liked the cases for placing a human face on the laws and service needs. (N=2) <li>6. Wealth of information; Wealth of potential information available in a single site; Comprehensive info; The gathering of information and links in one place is the strongest feature; The site covers a vast amount of information relative to providing accommodations for the disabled; It's a wonderful clearinghouse of information. (N=7) <li>7. Well organized; well organized by topic and use; Major headings were reasonably clear and provided a guide to where to go to find out more information. (N=4) <li>8. Great design of the web site; sections were attractively laid out as well, and provided a sense of comfort with the site. (N=2)

Table 15 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from One-to-One Users

Strengths (continued)	<ol style="list-style-type: none"> 9. Clear and extensive information on learning disabilities – crucial for the university to have such a site. 10. Visually inviting; Pleasing to look at. (N=2) 11. Both formal and personal. 12. The variety of formats is bound to appeal to a number of users with different learning needs; It seems to have information that would be related to any user or information-seeker. (N=2) 13. The information is quite useful and practical. 14. Information is presented succinctly.
Weaknesses	<ol style="list-style-type: none"> 1. On the first page I was a little confused as to where to go to get what I needed. But I got oriented quickly. 2. Needs a search component (e.g., I could plug in “learning disabilities” and get what I needed. 3. No weaknesses really; None evident in this brief interaction w/ components of the site; I didn’t really see any at this time. (N=3) 4. Not always clear what one will find in each section – but this is inevitable on web sites. 5. Could be problems for those with slow computers and not the right plug-ins. 6. Perhaps not as direct as possible in answering a specific question. It seemed to take me a considerable while to answer a straightforward question. 7. Hard to say. It was easy to get around the site but a little more time to be really familiar with the resources would help a lot.

Table 15 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from One-to-One Users

Weaknesses (continued)	<ol style="list-style-type: none"> 8. Location of info about UK. Some links aren't connecting. 9. Would like FAQ section for campus administrators, intervention tips, problem solving resources more directly identified specific to campus. 10. Nothing major; my previous comment touches on a weakness in terms of link "tags" or titles. 11. In some cases, CASE Law, for instance, once you moved to deeper levels within the website, the information became confusing or overwhelming. The info exchange site was potentially useful, but I was confused and thought it was a more general information site (for instance nationally) rather than a more campus-specific site. 12. In the description of Viewpoints Forum, it would be helpful to know that the conversation could be anonymous. 13. The navigation for someone like me who does not use this type of site often meant that I needed help and would spend a good deal of time exploring the site.
Improvements	<ol style="list-style-type: none"> 1. See above. 2. Perhaps a hyperlink to the emails of key resource people at the Disability Resource Center. 3. In Netscape mode – distinguish between external and internal links for court info. 4. No recommendations at this point; None at this point – it is very well organized. (N=2) 5. Maybe more of a question and answer format, with frequently asked questions and answers to these; Add often asked questions and answers that are organized for a quick read, then have ways to find out the details from other sections. (N=2) 6. Make sure text is large enough for readers who may have some visual impairment.

Table 15 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from One-to-One Users

Improvements (continued)	<ol style="list-style-type: none"> 7. Even though graphics tend to slow a site down, a few more pictures of icons might help with the navigation. 8. Add glossary of terms, tips for intervention/facilitating workplace acceptance/accommodation. 9. I don't think that Info Exchange clearly defines to me what is located in that area. 10. Put UK info in a separate folder; Organize article search topically; I would try to narrow the search results down a bit. I might also try to provide leading phrases as a guide on where to go. For instance, could you type in a topic such as anonymous information to help guide one through the various sections of the site? (N=3) 11. Add a succinct listing of campus contact names/numbers/e-mails; Have an easily found listing of service centers on the UK campus. I know you have it, but the format did not make it instantly recognizable as THE listing of service centers. I am suggesting a page on which each center is listed (and hot-linked) with a brief description of the center's mission or purpose. (N=2)
Additional Comments	<ol style="list-style-type: none"> 1. Excellent site; Overall it is well-done; Nice work; Well done! (N=4) 2. I will use this site once it's available; Looking forward to using this!! (N=2) 3. I moved through the question-answering exercise quickly, in part b/c this is familiar info generally. My usual tendency w/ a site is to go thru in a more orderly manner [area by area] to get a "lay of the land" but that is not always possible when question/situation arises and info must be located quickly – which the organization of this site does allow. 4. Site is very informative and addresses the issues confronting the disabled. 5. Would be helpful for student visiting other UK web sites could link with this web site. 6. This site is very user friendly. The information is presented in an informative manner and one can tell that they would be welcome to go to any of the offices described for further assistance.

Table 15 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from One-to-One Users

Additional Comments (continued)	<p>7. I can tell a great deal of development time has gone into this site.</p> <p>8. Overall it is attractive; The graphics are great and give the site an appealing look, and makes the subject more “real.” (N=2)</p> <p>9. A very useful and practical website for faculty and students; Has the makings of a very valuable instrument for faculty and staff to address their questions to. Certainly, far better than anything that exists now; It will provide a valuable service to our entire university community. (N=3)</p> <p>10. I would also like to see some reference to what accommodations are appropriate for faculty members with disabilities. This has already posed a severe problem in my college, and with the aging of the faculty, this may become a more acute problem.</p>
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NOTE: ^a Instructional Personnel: N=5; Academic Administrators: N=5; Auxiliary Service Administrators: N=5

Table 16. Number of Minutes Required by One-to-One Users to Respond to Questions

Questions	Number of Minutes Required to Locate a Response	
	Mean	Range
1. UK's policy on providing accommodations:		
Instructional Personnel ^a	3.8	2-8
Academic Administrators ^a	3.2	1-7
Auxiliary Service Administrators ^a	2.6	2-4
2. Determining whether a requested accommodation is reasonable:		
Instructional Personnel ^a	3.0	1-7
Academic Administrators ^a	2.8	1-5
Auxiliary Service Administrators ^a	2.8	2-4
3. Court cases and/or federal laws to support position:		
Instructional Personnel ^a	1.4	1-9
Academic Administrators ^a	2.6	1-7
Auxiliary Service Administrators ^a	4.2	1-10
4. Literature to help understand situation:		
Instructional Personnel ^a	3.4	1-9
Academic Administrators ^a	4.0	1-8
Auxiliary Service Administrators ^a	3.6	1-10
5. Individuals on campus to assist in situation:		
Instructional Personnel ^a	4.2	1-12
Academic Administrators ^a	3.8	1-6
Auxiliary Service Administrators ^a	4.4	1-16
6. Location to discuss situation with others anonymously:		
Instructional Personnel ^a	2.2	1-4
Academic Administrators ^a	6.2	1-17
Auxiliary Service Administrators ^a	6.6	1-14

Table 16 (continued). Number of Minutes Required by One-to-One Users to Respond to Questions

Questions	Number of Minutes Required to Locate a Response	
	Mean	Range
7. How to gain understanding about the student's point of view:		
Instructional Personnel ^a	2.2	1-3
Academic Administrators ^a	3.8	1-7
Auxiliary Service Administrators ^a	3.2	1-7

NOTE: ^a N=5

Table 17. Number of Errors Reported by One-to-One Users

Error Types	Number of Errors Reported by One-to-One Users			
	Instructional Personnel ^a	Academic Administrators ^a	Auxiliary Service Administrators ^a	Total
Mechanics	0	0	1	1
Navigation	0	2	4	6
Media	2	0	1	3
Title Tags	0	0	0	0
Page Format	2	0	1	3
Total	4	2	7	13

NOTE: ^a N=5

Table 18. Accuracy Rate and Number of Pages Viewed by Consumer Analysis Users

Questions	Accuracy Rate of Consumer Analysis Users	Number of Pages Viewed to Locate a Response	
		Mean	Range
1. UK's policy on providing accommodations:			
Instructional Personnel ^a	100%	4.0	2-6
Academic Administrators ^a	80%	3.0	2-4
Auxiliary Service Administrators ^a	90%	4.0	2-8
2. Determining whether a requested accommodation is reasonable:			
Instructional Personnel ^a	70%	5.8	1-14
Academic Administrators ^a	20%	4.8	1-11
Auxiliary Service Administrators ^a	40%	4.6	1-9
3. Court cases and/or federal laws to support position:			
Instructional Personnel ^a	100%	4.8	1-15
Academic Administrators ^a	100%	4.4	1-8
Auxiliary Service Administrators ^a	90%	5.2	1-15
4. Literature to help understand situation:			
Instructional Personnel ^a	100%	6.2	1-10
Academic Administrators ^a	80%	5.6	1-13
Auxiliary Service Administrators ^a	80%	3.6	2-9

Table 18 (continued). Accuracy Rate and Number of Pages Viewed by Consumer Analysis Users

Questions	Accuracy Rate of Consumer Analysis Users	Number of Pages Viewed to Locate a Response	
		Mean	Range
5. Individuals on campus to assist in situation:			
Instructional Personnel ^a	100%	4.2	1-9
Academic Administrators ^a	100%	6.8	2-15
Auxiliary Service Administrators ^a	100%	11.8	7-19
6. Location to discuss situation with others anonymously:			
Instructional Personnel ^a	80%	4.4	2-8
Academic Administrators ^a	50%	5.2	1-10
Auxiliary Service Administrators ^a	60%	7.4	3-12
7. How to gain understanding about the student's point of view:			
Instructional Personnel ^a	80%	4.6	2-9
Academic Administrators ^a	100%	6.8	2-19
Auxiliary Service Administrators ^a	90%	4.2	1-8

NOTE: ^a N=5

Table 19. Responses of Consumer Analysis Users on the Info Pages Section

Items	Summary of Responses of Consumer Analysis Users on the Info Pages Section			
	Difficult	Fairly Easy	Very Easy	Total
1. Easy to understand				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	1	1	3	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>No</u>	<u>Somewhat</u>	<u>Yes</u>	<u>Total</u>
2. Attractive layout				
Instructional Personnel ^a	0	0	5	5
Academic Administrators ^a	0	3	2	5
Auxiliary Service Administrators ^a	0	2	3	5
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
3. Held interest				
Instructional Personnel ^a	0	0	5	5
Academic Administrators ^a	0	3	2	5
Auxiliary Service Administrators ^a	0	1	4	5
	<u>Not At All</u>	<u>Somewhat</u>	<u>Helped a Lot</u>	<u>Total</u>
4. Navigation features helped				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	1	4	5

Table 19 (continued). Responses of Consumer Analysis Users on the Info Pages Section

Items	Summary of Responses of Consumer Analysis Users on the Info Pages Section			
	<u>Unclear</u>	<u>Somewhat Clear</u>	<u>Very Clear</u>	<u>Total</u>
5. Organization clear				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	0	1	4	5
6. Useful to professional activities	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	1	4	5
Totals:	1	23	66	90

NOTE: ^a N=5

Table 20. Strengths and Improvements from Consumer Analysis Users on the Info Pages Section

Items	Comments of Consumer Analysis Users ^a on the Info Pages Section
Strengths	<ol style="list-style-type: none"> 1. Reference Materials – Legal/Articles. 2. Clearly described section on Campus Resources. 3. Personal Stories. 4. A lot of good info; A ton of great information; Comprehensive; Thorough. (N=3) 5. Succinct; To the point info. (N=3) 6. Easy to use; Easy to navigate and find info; Easy to navigate through the Info Pages; Easy to find answers/info; Easy to access information to answer specific questions & browsing would be easy just to learn more; Get a short answer quickly with links to longer answers & more info. (N=7) 7. The content of the info was very useful, especially the info in the Viewpoints section. 8. Easy to understand & follow; Given in easy to understand language. (N=2) 9. Easy links. 10. Clearly presented. 11. Good colors. 12. Clear functions. 13. Basic information. 14. Good info & links; not overdone.

Table 20 (continued). Strengths and Improvements from Consumer Analysis Users on the Info Pages Section

Improvements	<ol style="list-style-type: none">1. Highlight DRC in campus section more, if not on main page of site; More direct link to UK offices & names of administrators. (N=2)2. None; N/C; Looks pretty good; None that I would recommend. (N=5)3. Perhaps list law section 1st – “basic foundation” to other info links.4. Not sure – I didn’t read through all of the options carefully – i.e., my problem – not the pages.5. I would change the title of <u>Legal Implications</u> to Overview of Disability Laws.6. Put “what counts as reasonable accom.” as a separate page.7. Information about anonymous discussion was very hard to find.8. Needs more meat in some areas – more specifics or <u>examples</u>.9. Reduce # of steps you need to take to get to info.
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NOTE: ^a Instructional Personnel: N=5; Academic Administrators: N=5; Auxiliary Service Administrators: N=5

Table 21. Responses of Consumer Analysis Users on the Info Search Section

Items	Summary of Responses of Consumer Analysis Users on the Info Search Section			
	Difficult	Fairly Easy	Very Easy	Total
1. Easy to search using keyword feature				
Instructional Personnel ^a	1	1	3	5
Academic Administrators ^a	0	3	2	5
Auxiliary Service Administrators ^a	0	2	3	5
	<u>Not Relevant</u>	<u>Somewhat Relevant</u>	<u>Very Relevant</u>	<u>Total</u>
2. Information relevant				
Instructional Personnel ^a	0	3	3	6
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	1	1	3	5
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
3. Information useful				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	3	2	5
Auxiliary Service Administrators ^a	1	2	2	5
	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked It a Lot</u>	<u>Total</u>
4. Format of search page				
Instructional Personnel ^a	0	4	2	6
Academic Administrators ^a	0	4	1	5
Auxiliary Service Administrators ^a	0	3	2	5

Table 21 (continued). Responses of Consumer Analysis Users on the Info Search Section

Items	Summary of Responses of Consumer Analysis Users on the Info Search Section			
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
5. Topical listings on search pages				
Instructional Personnel ^a	0	2	3	5
Academic Administrators ^a	0	1	4	5
Auxiliary Service Administrators ^a	0	2	3	5
6. Format of retrieved information	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked It a Lot</u>	<u>Total</u>
Instructional Personnel ^a	0	3	2	5
Academic Administrators ^a	0	3	2	5
Auxiliary Service Administrators ^a	0	3	2	5
7. Navigation features helped navigation	<u>No</u>	<u>Somewhat</u>	<u>Yes</u>	<u>Total</u>
Instructional Personnel ^a	0	0	5	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	0	5	5
Totals:	3	44	60	107

NOTE: ^a N=5

Table 22. Strengths and Improvements from Consumer Analysis Users on the Info Search Section

Items	Comments of Consumer Analysis Users ^a on the Info Search Section
Strengths	<ol style="list-style-type: none"> 1. Typing in a key word and being connected to that info regardless of what links are below search key. 2. <u>Almost</u> any reference I typed was given. Lots of good links; Broad base of information; Had a number of choices (N=3) 3. Easy to find info.; Very easy to access & find needed info; Ease of use; good info; Ready access to information (N=4) 4. Made easy by short section describing area prior to viewing. 5. Neutral on that issue. 6. Articles appear to be very helpful information. 7. Links to published articles. 8. I think any search engine takes time to learn. 9. Flexibility. 10. Clear, simple; Clear – not too busy; Clearly labeled sections and labels (N=3)
Improvements	<ol style="list-style-type: none"> 1. As many full text documents as possible. I doubt many people will look for the articles at the library. 2. UK search engine obviously hampers the effort to be the best it can be. 3. Relevant <u>cases</u> doesn't stand out as a legal reference immediately. 4. Continue to work constructing the site.

Table 22 (continued). Strengths and Improvements from Consumer Analysis Users on the Info Search Section

Improvements (continued)

5. Perhaps label each main area - For example: Info Pages/Purple, Info Search/ Red
6. Can't think of any; None; N/S (N=6)
7. Again, add local site search.
8. Accessibility to online documents.
9. Enlarge the type on the results page, (for the older faculty!).
10. Don't like top ten Web format for search results.

NOTE: ^a Instructional Personnel: N=5; Academic Administrators: N=5; Auxiliary Service Administrators: N=5

Table 23. Responses of Consumer Analysis Users on the Viewpoints Section

Items	Summary of Responses of Consumer Analysis Users on the Viewpoints Section			
	No	Somewhat	Yes	Total
1. Held interest				
Instructional Personnel ^a	0	0	5	5
Academic Administrators ^a	0	3	2	5
Auxiliary Service Administrators ^a	0	0	5	5
2. Media enhanced content	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
Instructional Personnel ^a	0	0	5	5
Academic Administrators ^a	0	1	2	3
Auxiliary Service Administrators ^a	1	0	4	5
3. Format of story pages	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked it a Lot</u>	<u>Total</u>
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	2	3	5
Auxiliary Service Administrators ^a	0	0	5	5
4. Story responses opening new window	<u>Not Useful</u>	<u>It Was Acceptable</u>	<u>Very Useful</u>	<u>Total</u>
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	2	2	4
Auxiliary Service Administrators ^a	0	1	4	5

Table 23 (continued). Responses of Consumer Analysis Users on the Viewpoints Section

Items	Summary of Responses of Consumer Analysis Users on the Viewpoints Section			
	<u>Not Helpful</u>	<u>Somewhat Helpful</u>	<u>Helped a Lot</u>	<u>Total</u>
5. Navigation features helped navigation				
Instructional Personnel ^a	0	1	4	5
Academic Administrators ^a	0	4	1	5
Auxiliary Service Administrators ^a	0	1	4	5
6. Explore personal attitudes	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
Instructional Personnel ^a	0	0	5	5
Academic Administrators ^a	0	4	1	5
Auxiliary Service Administrators ^a	0	1	4	5
Totals	1	22	64	87

NOTE: ^a N=5

Table 24. Strengths and Improvements from Consumer Analysis Users on the Viewpoints Section

Items	Comments of Consumer Analysis Users ^a on the Viewpoints Section
Strengths	<ol style="list-style-type: none"> 1. Personal Connection – Hits Home with People; Personal nature captures attention; Personal perspective (N=3) 2. A great resource. 3. Helps me to identify with the challenges students w/ disabilities face daily; Student side of situation; Comments & experiences shared by students is very helpful; It makes real a student’s challenges & helps professors understand that challenge. (N=4) 4. Especially helpful to connect to other people (not just resources). 5. Presented many facets of the issue I wouldn’t have thought of on my own. 6. Variety & links; Variety. (N=2) 7. Provides perspective for folks who are not challenged. 8. Attractiveness. 9. Very thorough & well done. Impressive! 10. Basic – but “true to life” – “real examples/views”.
Improvements	<ol style="list-style-type: none"> 1. Very user friendly – Would Viewpoints occasionally change? 2. More personal anecdotes from students w/ disabilities, if possible; Include more stories; Add more stories! (N=3)

Table 24 (continued). Strengths and Improvements from Consumer Analysis Users on the Viewpoints Section

Improvements (continued)	<ol style="list-style-type: none"> 3. Very user friendly – Would Viewpoints occasionally change? 4. More personal anecdotes from students w/ disabilities, if possible; Include more stories; Add more stories! (N=3) 5. Again, I don't know that "Viewpoints" actually depicts the content. 6. None; N/S. (N=4) 7. Hard to find from home, you need to know exact title. 8. Maybe more different types of disabilities and marked by type of disability. 9. Should be geared more to most likely questions/concerns – What do I need to do to tackle a specific problem.
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NOTE: ^a Instructional Personnel: N=5; Academic Administrators: N=5; Auxiliary Service Administrators: N=5

Table 25. Strengths, Weaknesses, Improvements, and Additional Comments from Consumer Analysis Users

Item	Summary of Comments from Consumer Analysis Users on the WPSS
Strengths	<ol style="list-style-type: none"> <li>1. Easy to Navigate; Fairly easy to navigate; Very user friendly – easy to navigate & locate information. (N=4) <li>2. Provides info about specific Campus Resources. <li>3. Comprehensive; Loaded with info; The amount of information & links; Is exhaustive. (N=4) <li>4. Clearly overviews laws, UK’s responsibilities, & resources. <li>5. Great resource to find any/all info on disabilities. <li>6. Makes finding complex info a snap; Can find quick answers and detailed explanations. (N=2) <li>7. Info is very useful and timely. <li>8. Site is organized well – not too much “copy.” <li>9. Very helpful as individual student situations occur in my teaching (and for working with the TAs whom I supervise). I think we would use this information often. <li>10. Presents human side of issue not heard by policies. <li>11. Useful resources for faculty, students, and admin. <li>12. The ease of use. (N=3) <li>13. The Viewpoints section. <li>14. Beautifully designed, <u>very</u> informative & very helpful.

Table 25 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Consumer Analysis Users

Strengths (continued)	<p>15. Speed.</p> <p>16. Images.</p> <p>17. Writing; Writing style is a nice balance of info oriented and easy to read; The lang. used to explain different concepts. (N=3)</p> <p>18. Easy access to substantial amounts of info.</p> <p>19. Ready access to information.</p> <p>20. Attractive presentation.</p> <p>21. Good, straightforward info.</p>
Weaknesses	<p>1. Search results; had trouble getting info on resources.</p> <p>2. Not enough links w/ complete articles or research.</p> <p>3. Resource Ctr.'s not in visible enough locations w/in site.</p> <p>4. If I had to pick... I'd say the search engine w/in the site.</p> <p>5. None; No major weaknesses – just building on the current site; None – well done! (N=5)</p> <p>6. Knowing just what title/label/link would be most helpful – I'd guess this would become much easier with frequent use.</p> <p>7. UK resources are not at the forefront.</p> <p>8. Need local site search.</p>

Table 25 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Consumer Analysis Users

Weaknesses (continued)	<ol style="list-style-type: none"> 9. Occasional difficulties w/ server; my lack audio, etc. applications. 10. Is exhausting – most searches. 11. Sort out <u>legal</u> cases from others in relevant cases. Or identify all as relevant legal cases. 12. Hard to reflect the full range of disability issues & disabilities in a manageable format (here I'm thinking particularly of viewpoints section). 13. Not easy to <u>very</u> quickly locate information. I had to search & under normal situation I would give up searching. 14. Want a clear simple answer – they don't want all this background.
Improvements	<ol style="list-style-type: none"> 1. Fix or modify all of the weaknesses; See above. (N=2) 2. Possibly put area titles on the left hand navigation...i.e. Policy and the law: a. Disability Rights laws, b. Campus Policies 3. None; Don't know; N/A; None that are not already being addressed. (N=4) 4. Although used for training/resource = great focus I think the site could be a resource for students. 5. Make UK more easily identifiable at the top or bottom. 6. Except changing legal implications to Overview of Disability Law there aren't any. 7. More variety in viewpoints.

Table 25 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Consumer Analysis Users

Improvements (continued)	<ol style="list-style-type: none"> 8. Enlarge font on search results & maybe some other pages. 9. Took me until now (end of session) to find <u>UK Guide</u> I should have found that much earlier. 10. Make it more drill down – start with answer then give background if someone wants it.
Additional Comments	<ol style="list-style-type: none"> 1. Great Job; Good job; Good work; This is an incredible site; Great contribution!! (N=5) 2. Need to get the word out about this site. 3. Project seems very worthwhile. I like the site – I hope it will be available soon for faculty & staff...& students! 4. An easy session! 5. Nicely developed site. Should prove very helpful to faculty, admin., and students providing they know about it!

NOTE: ^a Instructional Personnel: N=5; Academic Administrators: N=5; Auxiliary Service Administrators: N=5

Table 26. Number of Minutes Required by Consumer Analysis Users to Respond to Questions

Questions	Number of Minutes Required to Locate a Response	
	Mean	Range
1. UK's policy on providing accommodations:		
Instructional Personnel ^a	2.0	1-4
Academic Administrators ^a	1.5	5-4
Auxiliary Service Administrators ^a	2.0	1-4
Determining whether a requested accommodation is reasonable:		
Instructional Personnel ^a	2.4	1-4
Academic Administrators ^a	2.6	1-5
Auxiliary Service Administrators ^a	2.8	1-6
3. Court cases and/or federal laws to support position:		
Instructional Personnel ^a	2.0	1-4
Academic Administrators ^a	1.8	1-3
Auxiliary Service Administrators ^a	2.8	1-8
4. Literature to help understand situation:		
Instructional Personnel ^a	2.4	1-5
Academic Administrators ^a	2.0	1-5
Auxiliary Service Administrators ^a	2.2	1-4
5. Individuals on campus to assist in situation:		
Instructional Personnel ^a	1.6	8-4
Academic Administrators ^a	2.4	1-5
Auxiliary Service Administrators ^a	4.2	3-6
6. Location to discuss situation with others anonymously:		
Instructional Personnel ^a	1.2	8-2
Academic Administrators ^a	2.8	1-5
Auxiliary Service Administrators ^a	3.0	1-8

Table 26 (continued). Number of Minutes Required by Consumer Analysis Users to Respond to Questions

Questions	Number of Minutes Required to Locate a Response	
	Mean	Range
7. How to gain understanding about the student's point of view:		
Instructional Personnel ^a	2.0	1-4
Academic Administrators ^a	1.6	1-3
Auxiliary Service Administrators ^a	2.0	1-4

NOTE: ^a N=5

Table 27. Number of Errors Reported by Consumer Analysis Users

Error Types	Number of Errors Reported by Consumer Analysis Users			
	Instructional Personnel ^a	Academic Administrators ^a	Auxiliary Service Administrators ^a	Total
Mechanics	0	0	0	0
Navigation	5	5	5	15
Media	1	0	2	3
Title Tags	0	0	0	0
Page Format	7	2	0	10
Totals:	13	7	7	27

NOTE: ^a N=5

Table 28. Accuracy Rates of Field Trial Users

Questions	Accuracy Rates of Field Trial Users
1. UK's policy on providing accommodations:	
Instructional Personnel ^a	93%
Academic Administrators ^b	78%
Auxiliary Service Administrators ^c	100%
2. Determining whether a requested accommodation is reasonable:	
Instructional Personnel ^a	57%
Academic Administrators ^b	67%
Auxiliary Service Administrators ^c	70%
3. Court cases and/or federal laws to support position:	
Instructional Personnel ^a	87%
Academic Administrators ^b	100%
Auxiliary Service Administrators ^c	100%
4. Literature to help understand situation:	
Instructional Personnel ^a	90%
Academic Administrators ^b	78%
Auxiliary Service Administrators ^c	100%
5. Individuals on campus to assist in situation:	
Instructional Personnel ^a	77%
Academic Administrators ^b	78%
Auxiliary Service Administrators ^c	90%
6. Location to discuss situation with others anonymously:	
Instructional Personnel ^a	70%
Academic Administrators ^b	61%
Auxiliary Service Administrators ^c	100%

Table 28 (continued). Accuracy Rates of Field Trial Users

Questions	Accuracy Rates of Field Trial Users
7. How to gain understanding about the student's point of view:	
Instructional Personnel ^a	70%
Academic Administrators ^b	53%
Auxiliary Service Administrators ^c	100%

NOTE: ^a Instructional Personnel: N=15

NOTE: ^b Academic Administrators: N=10

NOTE: ^c Auxiliary Service Administrators: N=5

Table 29. Responses of Field Trial Users on the Info Pages Section

Items	Summary of Responses of Field Trial Users on the Info Pages Section			
	Difficult	Fairly Easy	Very Easy	Total
1. Easy to understand				
Instructional Personnel ^a	0	6	9	15
Academic Administrators ^b	0	4	6	10
Auxiliary Service Administrators ^c	0	2	3	5
	<u>No</u>	<u>Somewhat</u>	<u>Yes</u>	<u>Total</u>
2. Attractive layout				
Instructional Personnel ^a	0	7	8	15
Academic Administrators ^b	0	4	6	10
Auxiliary Service Administrators ^c	0	1	4	5
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
3. Held interest				
Instructional Personnel ^a	0	6	9	15
Academic Administrators ^b	0	4	6	10
Auxiliary Service Administrators ^c	0	2	3	5
	<u>Not At All</u>	<u>Somewhat</u>	<u>Helped a Lot</u>	<u>Total</u>
4. Navigation features helped				
Instructional Personnel ^a	0	2	13	15
Academic Administrators ^b	0	3	7	10
Auxiliary Service Administrators ^c	0	0	5	5

Table 29 (continued). Responses of Field Trial Users on the Info Pages Section

Items	Summary of Responses of Field Trial Users on the Info Pages Section			
	<u>Unclear</u>	<u>Somewhat Clear</u>	<u>Very Clear</u>	<u>Total</u>
5. Organization clear				
Instructional Personnel ^a	0	6	8	14
Academic Administrators ^b	1	6	3	10
Auxiliary Service Administrators ^c	0	4	1	5
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
6. Useful to professional activities				
Instructional Personnel ^a	1	6	7	14
Academic Administrators ^b	0	7	3	10
Auxiliary Service Administrators ^c	0	2	3	5
	<u>Totals:</u>	<u>2</u>	<u>72</u>	<u>104</u>
				<u>178</u>

NOTE: ^a Instructional Personnel: N=15

NOTE: ^b Academic Administrators: N=10

NOTE: ^c Auxiliary Service Administrators: N=5

Table 30. Strengths and Improvements from Field Trial Analysis Users on the Info Pages Section

Items	Comments of Field Trial Users ^a on the Info Pages Section
Strengths	<ol style="list-style-type: none"> 1. Large topics areas were noted. 2. Clear distinction of aspects of issues. 3. Clear concise language; Clear, concise information; Clear, direct; Direct & to the point – very good; Easy to read information – concise, nice large print! (N=5) 4. Embedded links. 5. Easy to access; Easy to use. You don't have to look very long to find what you need; Easy to follow; Info easy to find; Rapid access. (N=6) 6. Complete; Very comprehensive; <u>Depth</u> of information; Depth, should I need it; Comprehensive information; Lots of information. (N=6) 7. Good quality information, good links. 8. "Campus policy" was the most useful, although the "legal implications" page was also helpful. 9. Excellent navigation features; Information is provided in a clear, succinct way at a glance. I didn't need to take much time to navigate and found out where things are. (N=2) 10. The pages had a lot of legal cases. I'm not sure why. Am I suppose to know the cases? 11. Well organized; Index well done, easy to find the right topics; Clear road map; Clear, logical arrangement of sections and links; Very clearly displayed info to get to other info; Comprehensive index of pages (N=6) 12. Filled with national resources.

Table 30 (continued). Strengths and Improvements from Field Trial Analysis Users on the Info Pages Section

<p>Strengths (continued)</p>	<p>13. Opportunity for individuals to express themselves.</p> <p>14. Accessible, concise summaries – answer questions quickly.</p> <p>15. Contacts if I still have questions.</p> <p>16. All of the above: e.g., ease of use, clear organization, etc.</p> <p>17. Faculty Guide.</p> <p>18. The section names suggest their information content nicely.</p> <p>19. I did get the information needed in most cases.</p> <p>20. <u>Policy information</u> specifics.</p> <p>21. Attractive setting.</p>
<p>Improvements</p>	<p>1. Specifics not as clear.</p> <p>2. Better graphics and fonts.</p> <p>3. None; I can't think of any. It was easy to use and quick to yield the "answer;" None – very easy to use, informative and a valuable tool. (N=5)</p> <p>4. I thought the headers were a "crumb trail"; that is, clicking on the item to the left would take me back where I'd been. Instead, went to UK Policy Overview. (I like "crumb trails.")</p> <p>5. Perhaps increase the default font size or attach a javascript that will allow novice (who does not know that it is easy) to increase the size of the printed info.</p> <p>6. Simplify design.</p>

Table 30 (continued). Strengths and Improvements from Field Trial Analysis Users on the Info Pages Section

Improvements (continued)	<ol style="list-style-type: none"> 7. More color. 8. Keep it updated. 9. “Campus policy” links need to be as prominent as possible. 10. The prose is a little stilted in places, but this is probably inevitable, given the subject matter. 11. Shorter site name...uk_ed/in... _ shows up as error if underline is used. 12. Be able to type a question and get some help or some pointers. The list of laws may make sense to somebody who knows it all. I did not understand its implications clearly. 13. General note – for a while, I didn’t scroll down on the “Homepage” and was missing “Featured Items” and “Featured Stories” as a resource – my fault – but where your at the top you tend to look at that as the “whole page”. 14. More information about physical disabilities to balance the learning disabilities. 15. I think its confusing to have the listing of the different sections down the LHS of the Home Page. Hitting the purple box gave me access to much more information, but at the beginning I used the list on the left.
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NOTE: ^a Instructional Personnel: N=15; Academic Administrators: N=10; Auxiliary Service Administrators: N=5

Table 31. Responses of Field Trial Users on the Info Search Section

Items	Summary of Responses of Field Trial Users on the Info Search Section			
	Difficult	Fairly Easy	Very Easy	Total
1. Easy to search using keyword feature				
Instructional Personnel ^a	0	6	7	13
Academic Administrators ^b	0	7	2	9
Auxiliary Service Administrators ^c	1	1	1	3
	<u>Not Relevant</u>	<u>Somewhat Relevant</u>	<u>Very Relevant</u>	<u>Total</u>
2. Information relevant				
Instructional Personnel ^a	3	2	8	13
Academic Administrators ^b	0	6	3	9
Auxiliary Service Administrators ^c	1	2	2	5
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
3. Information useful				
Instructional Personnel ^a	1	4	9	14
Academic Administrators ^b	0	6	2	8
Auxiliary Service Administrators ^c	1	2	1	4
	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked It a Lot</u>	<u>Total</u>
4. Format of search page				
Instructional Personnel ^a	1	8	6	15
Academic Administrators ^b	1	7	1	9
Auxiliary Service Administrators ^c	1	2	1	4

Table 31 (continued). Responses of Field Trial Users on the Info Search Section

Items	Summary of Responses of Field Trial Users on the Info Search Section			
	<u>Not Useful</u>	<u>Somewhat Useful</u>	<u>Very Useful</u>	<u>Total</u>
5. Topical listings on search pages				
Instructional Personnel ^a	0	3	10	13
Academic Administrators ^b	0	6	4	10
Auxiliary Service Administrators ^c	0	1	3	4
	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked It a Lot</u>	<u>Total</u>
6. Format of retrieved information				
Instructional Personnel ^a	0	6	8	14
Academic Administrators ^b	1	7	2	10
Auxiliary Service Administrators ^c	0	1	2	3
	<u>No</u>	<u>Somewhat</u>	<u>Yes</u>	<u>Total</u>
7. Navigation features helped navigation				
Instructional Personnel ^a	0	4	11	15
Academic Administrators ^b	0	5	5	10
Auxiliary Service Administrators ^c	1	0	3	4
Totals:	12	86	91	189

NOTE: ^a Instructional Personnel: N=15

NOTE: ^b Academic Administrators: N=10

NOTE: ^c Auxiliary Service Administrators: N=5

Table 32. Strengths and Improvements from Field Trial Analysis Users on the Info Search Section

Items	Comments of Field Trial Users ^a on the Info Search Section
Strengths	<ol style="list-style-type: none"> 1. Clear articulation of components of issue. 2. It works; I was able to get the required information; It is well-designed and seems to work. (But isn't it just the UK Site Search?) (N=3) 3. Allows for easy quick access; Good access to a range of sources. (N=2) 4. Rich source of data; Good depth (N=2) 5. The topical links; Your categories seemed appropriate and helped me navigate to where I needed to go. (N=2) 6. Needed item. 7. Information is out there, for administrators performing a detailed search. 8. Relatively easy to use. 9. I didn't know what I was supposed to be searching for. 10. Current cases/literature/brief overview of article/court case. 11. All of the above. 12. Clear, simple; Again, clear, logical arrangement of menus, subjects, and links; Again very strait forward. (N=3) 13. Consistent look & feel w/ University's search engine.
Improvements	<ol style="list-style-type: none"> 1. Better graphics.

Table 32 (continued). Strengths and Improvements from Field Trial Analysis Users on the Info Search Section

Improvements (continued)	<ol style="list-style-type: none"> 2. Resource list too vague, too broad. 3. Often hard to pinpoint search. 4. When I tried to find campus expertise, I ran into a couple of “walls”. 5. Match the “view” (personalities) of the search pages to the rest of the site. 6. If red is color key, use reds for all section banners & links here so users “get it” – I did not pick up on the color coding til you repeated it a second time in this section (now I know all colors are significant but you can make that clear immediately via better graphic strategies). 7. Explain what the search is for. 8. In the services & experts section, I could not link to campus resources. 9. Titles/headings on left side of page indicating these are search links. 10. Room to add some subcategories to main categories for browsing. 11. None that I can think of; None; N/A. (N=3) 12. I didn’t catch on to the color coding. Not sure it’s very important. But pretty! 13. I’m really not sure how this redial should be working and I’ve been a librarian for a # of years – I’m [Am] I in too big of a hurry?
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NOTE: ^a Instructional Personnel: N=15; Academic Administrators: N=10; Auxiliary Service Administrators: N=5

Table 33. Responses of Field Trial Users on the Viewpoints Section

Items	Summary of Responses of Field Trial Users on the Viewpoints Section			
	No	Somewhat	Yes	Total
1. Held interest				
Instructional Personnel ^a	0	5	9	14
Academic Administrators ^b	0	3	6	9
Auxiliary Service Administrators ^c	0	1	4	5
2. Media enhanced content	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
Instructional Personnel ^a	1	5	6	12
Academic Administrators ^b	1	4	4	9
Auxiliary Service Administrators ^c	1	1	3	5
3. Format of story pages	<u>Didn't Like It</u>	<u>It Was Okay</u>	<u>Liked it a Lot</u>	<u>Total</u>
Instructional Personnel ^a	0	6	8	14
Academic Administrators ^b	0	5	5	10
Auxiliary Service Administrators ^c	0	2	3	5
4. Story responses opening new window	<u>Not Useful</u>	<u>It Was Acceptable</u>	<u>Very Useful</u>	<u>Total</u>
Instructional Personnel ^a				
Academic Administrators ^b	0	4	9	13
Auxiliary Service Administrators ^c	0	4	5	9
	1	1	3	5

Table 33 (continued). Responses of Field Trial Users on the Viewpoints Section

Items	Summary of Responses of Field Trial Users on the Viewpoints Section			
	<u>Not Helpful</u>	<u>Somewhat Helpful</u>	<u>Helped a Lot</u>	<u>Total</u>
5. Navigation features helped navigation				
Instructional Personnel ^a	0	4	10	14
Academic Administrators ^b	0	6	2	8
Auxiliary Service Administrators ^c	0	1	4	5
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
6. Explore personal attitudes				
Instructional Personnel ^a	2	4	8	14
Academic Administrators ^b	1	3	3	7
Auxiliary Service Administrators ^c	0	1	4	5
	<u>No</u>	<u>Sometimes</u>	<u>Yes</u>	<u>Total</u>
Totals:	7	60	96	163

NOTE: ^a Instructional Personnel: N=15

NOTE: ^b Academic Administrators: N=10

NOTE: ^c Auxiliary Service Administrators: N=5

Table 34. Strengths and Improvements of Field Trial Analysis Users on the Viewpoints Section

Items	Comments of Field Trial Users ^a on the Viewpoints Section
Strengths	<ol style="list-style-type: none"> <li>1. Breadth of points of view. <li>2. Will be good resource for those who don't work frequently with disabled students; Would be very helpful to folks who know little about disabilities; Very important for someone without LD to read – value of the website comes through quickly here; Helps those not accustomed to thinking about these issues! (N=4) <li>3. Real comments; Provides relevant, real world perspective; <u>Drama</u> of real stories; Links under “what is your viewpoint”; having a student perspective represented. (N=4) <li>4. Organizes & personalizes site structure & laws; Adds a personal touch; Puts a face to the issue; Helps personalize issue; It gave you much more of a feel for peoples' feelings and problems. (N=6) <li>5. Good examples that can inform. <li>6. Useful information; Timeliness of information. (N=2) <li>7. Accessibility. <li>8. Diversity, range of opinions & experiences; They offer a sort of catalogue of the various ways different people may respond to issues, and the Disability advocates' responses to these opinions; Type of information & lots of it; Lots of variety. (N=4) <li>9. It seemed well designed to me. <li>10. Clear depiction of common problems set in an easily understood format. <li>11. Very easy to navigate; Navigation. (N=2) <li>12. Interest of features.

Table 34 (continued). Strengths and Improvements of Field Trial Analysis Users on the Viewpoints Section

Strengths (continued)	13. It is a nice addition.
Improvements	<ol style="list-style-type: none"> 1. Better graphics. 2. Give a 1-line summary of each story on the Info Page. 3. More stories; More stories from students might help understanding of the challenges many of them face; I imagine it needs to cover a much broader number of cases. (N=3) 4. Add video clips for broadband (on campus and DSL/modem) connections. Perhaps include more pictures if broadband is out. 5. Clarify whether these are real or manufactured? If the latter, substitute real so user doesn't feel manipulated. 6. Links directly to other stories without having to go back up to index. 7. None; ?; None at this time (N=7) 8. I found the "Similar Difficulties" story confusing because the exact nature of the disability was not initially described. 9. The writing is a bit didactic, as if once we open a link, we get "the right answer." I am quite sympathetic to the need to accommodate, but some of the answers were a bit pat. For instance, in the case of whether it's necessary to accommodate in every situation, it's obvious that you won't need a microscope in an English class. But there are real and difficult questions regarding who is to pay for certain equipment or services that may pose great financial costs. I am personally inclined to say that the state should pay, but I can imagine others balking at certain costs.

NOTE: ^a Instructional Personnel: N=15; Academic Administrators: N=10; Auxiliary Service Administrators: N=5

Table 35. Strengths, Weaknesses, Improvements, and Additional Comments from Field Trial Users

Item	Summary of Comments on the WPSS from Field Trial Users ^a
Strengths	<ol style="list-style-type: none"> <li>1. Broad presentation of issue and its components. <li>2. Organized well; Kind & organization of information. (N=2) <li>3. Very useful content; Very helpful; There seems to be a lot of information about resources that students with disabilities would find useful; Overall useful for the stated purpose; When completed ~ this site will be very beneficial as a resource for those grappling w/ issues of disability accommodation. Having policies and laws readily available is a plus! (N=5) <li>4. Sophisticated windows & site organization, though not always clear to user. <li>5. Bold, bright, organized colors. <li>6. Strong graphics. <li>7. Lots of information; Comprehensive yet manageable; Thorough; Very comprehensive; Good info, complete one-stop shopping; Comprehensive information and resources; Lots of good information. (N=7) <li>8. Easy navigation; Reasonable navigation; Easy to use; Easy to use/read; Info easy to get to; Providing much needed information in an easy to follow format. I did not grope around the site hoping to find answers – I was led to the answers naturally. (N=6) <li>9. Quick, clear access to key points of <u>campus policy</u>; I learned a lot! It provides information that's easy to access (can bookmark the site) and at your fingertips. (N=2) <li>10. It is attractive; Very attractive. (N=2) <li>11. Good on policy and law.

Table 35 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Field Trial Users

Strengths (continued)	<ol style="list-style-type: none"> 12. Site help” feature is great but was last place I visited – might want to call it “site map” since many people prefer to navigate that way & find such a contents page most clear (or “site map” on home page top bar). 13. Includes professionals and people with disabilities. 14. Can get answers to <u>specific</u> questions; Answers a lot of common questions immediately. (N=2) 15. Opportunity for input if needed. 16. Faculty-friendly. 17. Viewpoints/Faculty Guide. 18. Provides information to someone who needs it right away. However, in a problem situation, I would call Disability Services. 19. Concise and accurate information; It’s clear and concise; Clear, clean, simple, straightforward (N=3)
Weaknesses	<ol style="list-style-type: none"> 1. Unattractive site. 2. Worry about survey implication that users expected to apply/interpret laws & cases. 3. Some info, re anonymity, difficult to access. 4. One dead link, apparently (Campus expertise); Some parts didn’t work. (N=2) 5. More info. than needed; Some could be overwhelmed with the amount of detail – if new to the field of disability studies; Too much info. (N=3) 6. Page format differences from the front to the search content sections; Format is somewhat confusing. (N=2)

Table 35 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Field Trial Users

Weaknesses (continued)	<ol style="list-style-type: none"> 7. Disability Rights Laws & Legal Implications section should be combined. As a stand alone page, the Disability Rights law section is not particularly helpful. 8. None, really; None; No real weaknesses; Addressed along the way. (N=6) 9. Not so clear on specific issues 10. The color-coded design is a bit unnecessary. Would prefer headings. 11. Access for UK home page? Searching “disability” didn’t get me this site; Lack of publicity that would prompt faculty to use it. (N=2) 12. When I think of the students with documented disabilities who have been in my classes in the past, I don’t think that I would have found very much practical information that would help me accommodate them – Because these problems are so individual, it may be that a website can only be of limited help – but I hope that if a similar situation arises at UK there will someone who can offer more particular assistance. 13. Some items & searches take a long time to load. 14. Don’t understand the Info Search section. 15. I found mostly information related to learning disabilities, especially in the campus policy section. Perhaps the page could be divided into subsections for disability type (i.e., learning disabilities, physical).
Improvements	<ol style="list-style-type: none"> 1. Better graphics. 2. More direction to counsel’s office as well as Disability Resource Center. 3. More stories!

Table 35 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Field Trial Users

Improvements (continued)	<ol style="list-style-type: none"> 4. A focused section for faculty that addresses the issues they will face in a collected manner. 5. Condense. 6. None, really; None; Addressed along the way. (N=4) 7. As stated before; See above. (N=2) 8. Needs a directory of <u>key</u> campus contact people. 9. Why so much legal stuff? 10. Add a section for those who know nothing about disability studies but would like to know more. Maybe a “getting started” section. 11. The color-coded design is a bit unnecessary. Would prefer headings. 12. Just minor adjustments – a really good, useful site. 13. Link it from the UK web site. 14. Needs feedback from users after a year or so. 15. FAQs are buried ~ make more accessible! 16. I think there may be a concern among faculty, especially junior faculty who are working very hard to get tenure, as to how much support we could get in accommodating special needs. For example, there is in the viewpoints section a case in which a political science prof. Had 5 students w/ special needs in one class. I am sympathetic and believe students w/ disabilities should be accommodated. However, if I had that situation described above, I would be very frustrated and feel overwhelmed, and feel like it would be impossible to do w/out help. If I had to write special exams, for example
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Table 35 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Field Trial Users

Improvements (continued)	<p>==that would take enormous time that I need to devote to publishing. Is there assistance for faculty to make accommodations? Is the institution providing financial support and technical support to us? Perhaps a page on your website devoted to cases that have worked out, ways UK has accommodated students and helped faculty, would be good.</p> <p>17. A category of choice – “Information for faculty” – what should faculty do <u>Do’s & Don’ts</u> “Information for students” “Information for administrators.”</p> <p>18. I would eliminate the second section of the navigation menu (LHS of page) and rely on the Information Pages which are much give a more detailed account of the information which can be accessed.</p>
Additional Comments	<p>1. What a great tool for the university community; Overall, the site is good and some of useful information which will be a valuable resource for advisors like me. (N=2)</p> <p>2. Would be interested in sharing with all fac., staff, & students when all ready to go!; All faculty and staff should be made aware of this site as soon as possible; It should be part of New Faculty Orientation. (N=3)</p> <p>3. Would FLASH or WAV be more appropriate than Apple software. Microsoft is dropping Apple Avi support as of Explorer 5.5 service pack 2 I believe. Perhaps offer a link to Apple to refer persons about Apple’s patch for this void would be in order.</p> <p>4. Good start, excellent content – clarify structure via stronger design elements, introduce structure of site more explicitly upon entering.</p> <p>5. Color coding is good but could be reinforced with text along left border at home page and within pages – to remind me that I’m in the search or general info zone, etc. Given my involvement, responsibilities, & experience, I doubt that I would use the site other than as source to recommend to faculty, students, & others. As with most web sites, there is more info. than will be used with most situations. Ideally, the critical information will be knowledge in the minds of those who need it: i.e., faculty should “know” policy, procedures, etc. related to learning disabilities.</p>

Table 35 (continued). Strengths, Weaknesses, Improvements, and Additional Comments from Field Trial Users

Additional Comments (continued)	<p>6. Excellent site! Thanks; Thank you for the opportunity to review this project. This is an exciting web site; Thank you for allowing me to participate in the study! It was very enlightening. (N=3)</p> <p>7. This [Viewpoints] is the least effective part of the ED website. Perhaps that's because the stories and vignettes are rather predictable, but then I've been a teacher at UK for 26 years and have seen a lot in this area. It could be much more valuable someone with little or no experience in dealing with lots of different disabilities.</p>
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NOTE: ^a Instructional Personnel: N=15; Academic Administrators: N=10; Auxiliary Service Administrators: N=5

Table 36. Number of Minutes Required by Field Trial Users to Respond to Questions

Questions	Number of Minutes Required to Respond	
	Mean	Range
1. UK's policy on providing accommodations:		
Instructional Personnel ^a	3.1	1-5
Academic Administrators ^b	2.8	1-9
Auxiliary Service Administrators ^c	4.2	2-6
2. Determining whether a requested accommodation is reasonable:		
Instructional Personnel ^a	2.8	1-8
Academic Administrators ^b	2.2	1-4
Auxiliary Service Administrators ^c	5.6	4-8
3. Court cases and/or federal laws to support position:		
Instructional Personnel ^a	2.6	1-5
Academic Administrators ^b	3.5	2-6
Auxiliary Service Administrators ^c	3.6	1-8
4. Literature to help understand situation:		
Instructional Personnel ^a	2.2	1-8
Academic Administrators ^b	2.3	.8-8
Auxiliary Service Administrators ^c	1.4	1-2
5. Individuals on campus to assist in situation:		
Instructional Personnel ^a	2.1	.5-9
Academic Administrators ^b	2.4	1-8
Auxiliary Service Administrators ^c	2.4	1-5
6. Location to discuss situation with others anonymously:		
Instructional Personnel ^a	2.7	1-5
Academic Administrators ^b	3.2	1-13
Auxiliary Service Administrators ^c	4.2	2-6

Table 36 (continued). Number of Minutes Required by Field Trial Users to Respond to Questions

Questions	Number of Minutes Required to Respond	
	Mean	Range
7. How to gain understanding about the student's point of view:		
Instructional Personnel ^a	1.9	1-5
Academic Administrators ^b	3.5	1-9
Auxiliary Service Administrators ^c	2.6	1-5

NOTE: ^a Instructional Personnel: N=15

NOTE: ^b Academic Administrators: N=10

NOTE: ^c Auxiliary Service Administrators: N=5

Figure 8a. Subsection Info Page Prior to the Expert Review Phase



Figure 8b. Subsection Info Page After the Expert Review Phase

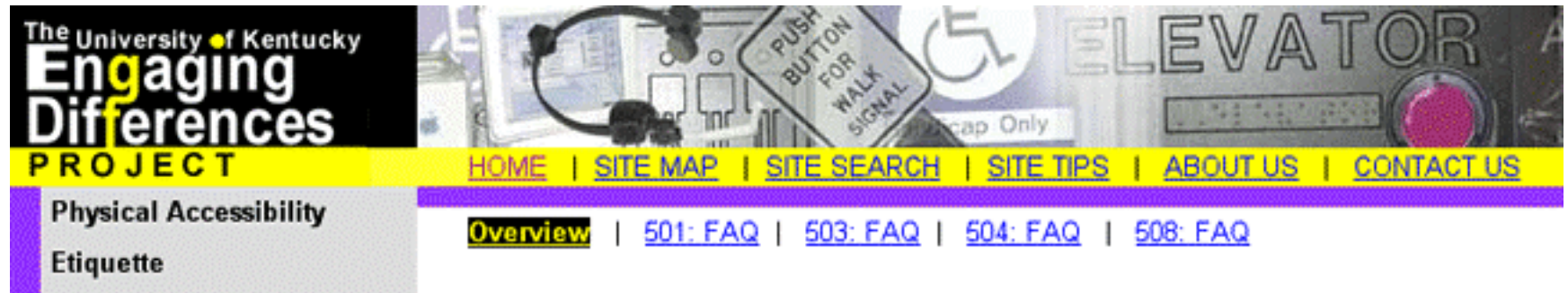


Figure 9a. Viewpoints Index Page Before Expert Review Phase

Accessible Technology
[Disability Rights Laws](#)
[Campus Policy](#)
[Legal Implications](#)
[Cases Index](#)

Services & Experts
[Related Literature](#)

Viewpoints: Story Index

[Drawing the Line](#) [No Manual](#)

[Just Part of the Mix](#) [Similar Difficulties](#)

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Figure 9b. Viewpoints Index Page After Expert Review Phase

Instructional Accommodation
Accessible Technology
[Disability Rights Laws](#)
[Campus Policy](#)
[Legal Implications](#)
[Cases Index](#)

Services & Experts
[Related Literature](#)

[Info Exchange](#)

Viewpoints: Story Index

 **[Drawing the Line](#)**
Explore the issues associated with providing accommodations for students with disabilities.


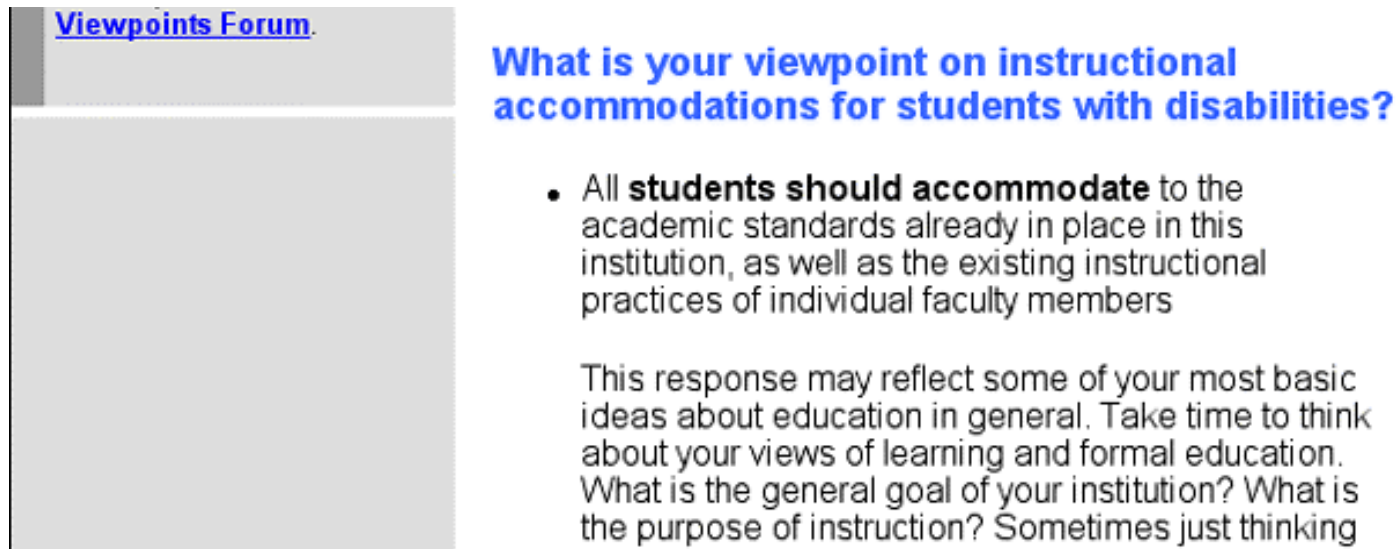
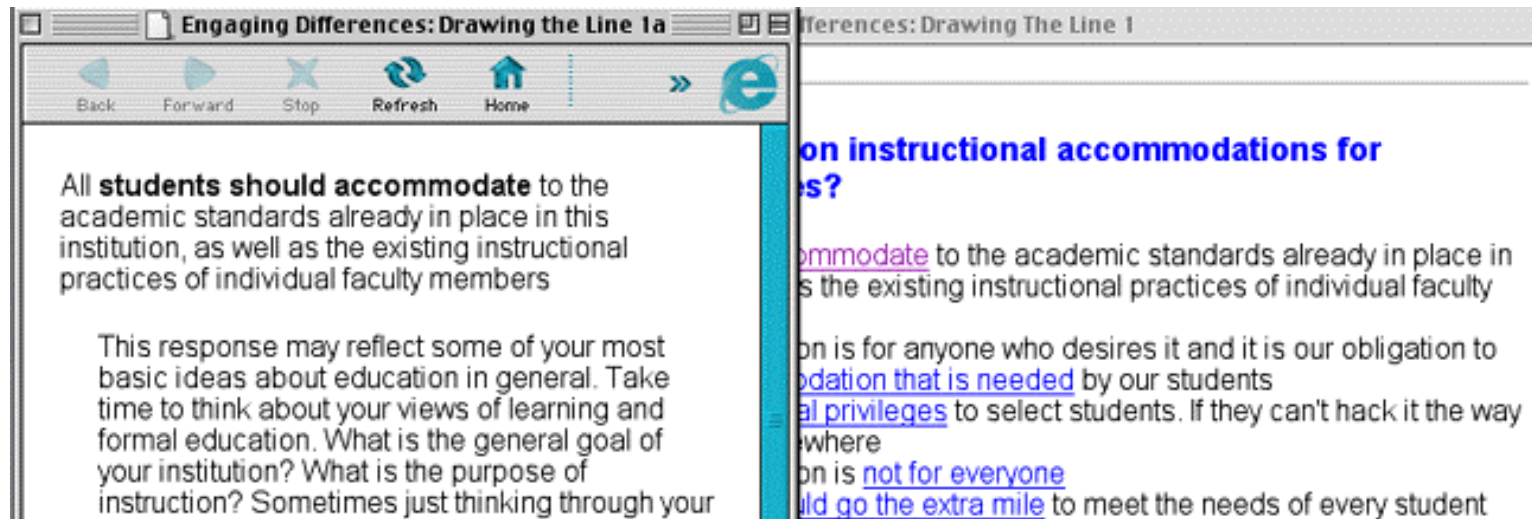
 **[Just Part of the Mix](#)**
Staff members describe disabilities as just part of the mix of human differences. Consider how we define disabilities.

Figure 10a. Response Format in Viewpoints Section Before Expert Review Phase




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Figure 10b. Response Format in Viewpoints Section After Expert Review Phase



11a. Entry Page Prior to the One-to-One Phase

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The University of Kentucky
Engaging Differences
PROJECT

[HOME](#) | [SITE MAP](#) | [SITE SEARCH](#) | [SITE TIPS](#) | [ABOUT US](#) | [CONTACT US](#)

- Physical Accessibility
- Etiquette
- Instructional Accommodation
- Accessible Technology
- [Disability Rights Laws](#)
- [Campus Policy](#)
- [Legal Implications](#)
- [Cases Index](#)

- [Services & Experts](#)
- [Related Literature](#)


- [Info Exchange](#)

- [Viewpoints](#)

Welcome!

The Engaging Differences project is focused on enhancing the quality of education and services provided to postsecondary students with disabilities.

Please [Contact Us](#) directly or learn more [About Us](#).



Is This Request Reasonable?

Who draws the line when honoring students' requests for accommodations? "I don't know where that line is!" said one administrator. In [Drawing the Line](#), explore the issues associated with providing accommodations for students with disabilities.





Figure 11b. Entry Page After the One-to-One Phase

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The University of Kentucky
Engaging Differences
PROJECT

[Home](#) | [FAQ](#) | [Glossary](#) | [Site Search](#) | [Site Help](#) | [About Us](#)

- Physical Accessibility
- Etiquette
- Instructional Accommodation
- Accessible Technology
- [Disability Rights Laws](#)
- [Campus Policy](#)
- [Legal Implications](#)

- [Services & Experts](#)
- [Related Literature](#)
- [Relevant Cases](#)

- [Express Yourself](#)
- [Viewpoints Index](#)

How Are We Doing?
Provide us with suggestions, comments, or concerns about the Engaging Differences site using the [feedback form](#).


Welcome!

The Engaging Differences project is focused on enhancing the quality of education and services provided to postsecondary students with disabilities.

Our site is divided into 4 main areas:

- General information about accessibility, accommodations, federal laws, and campus policy
- Searchable database containing service, experts, literature, and legal cases related to disability issues
- Discussion forums and list serves that allow conversations about disability issues
- Stories that present varying perspectives on accommodation as well as provide disability-related information

Featured Stories . . .

 [Is This Request Reasonable?](#)

Who draws the line when honoring students' requests for accommodations? "I don't know where that line is!" said one administrator. In [Drawing the Line](#), explore the issues associated with providing accommodations for students with disabilities.

Figure 12a. Express Yourself Overview Page Prior to the One-to-One Phase

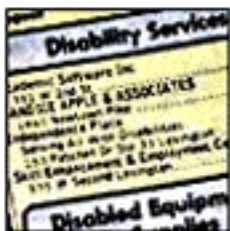
Info Exchange: Discussion Forum Index

Share your thoughts or experiences related to accommodating postsecondary students with disabilities and/or request information from the postsecondary community that will assist you in providing a quality education to these students.



Law and Policy Forum

Share thoughts and experiences about disability rights laws and campus policy on accommodating postsecondary students with disabilities.



Resources Forum

Share a service, expert, article, or book related to disability issues or request information about a resource from the postsecondary community.

Figure 12b. Express Yourself Overview Page After the One-to-One Phase

Express Yourself: Discussion Forums and Listservs

Share your thoughts or experiences related to accommodating postsecondary students with disabilities and/or request information from the postsecondary community that will assist you in providing a quality education.

Information related to use of the UK-ED Discussion Forums can be found in the [tips](#) section of this Web site.

UK-ED Discussion Forums

[Viewpoints Forum](#)

Join an ongoing discussion about accommodating postsecondary students with disabilities.

[Resources Forum](#)

Share or request information about a service, expert, article, book, case, or ruling related to disability issues.

[UK/LCC Forum](#)

Share thoughts and experiences related to accommodation with others on the UK and LCC campuses.

Figure 13a. Site Map Prior to the One-to-One Phase

Site Map

Info Pages

- Physical Accessibility
- Etiquette
- Instructional Accommodation
- Accessible Technology
- [Disability Rights Laws](#)
 - [Rehabilitation Act](#)
 - [American with Disabilities Act](#)

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Figure 13b. Site Map After the One-to-One Phase

Site Map | [Site Tips](#) | [Accessibility Features](#)

Site Help: Site Map

General Information

- Physical Accessibility
- Etiquette
- Instructional Accommodation
- Accessible Technology
- [Disability Rights Laws](#)
 - [Rehabilitation Act](#)
 - [American with Disabilities Act](#)

Figure 14a. Info Pages Navigation Menus Prior to the Field Trial Phase

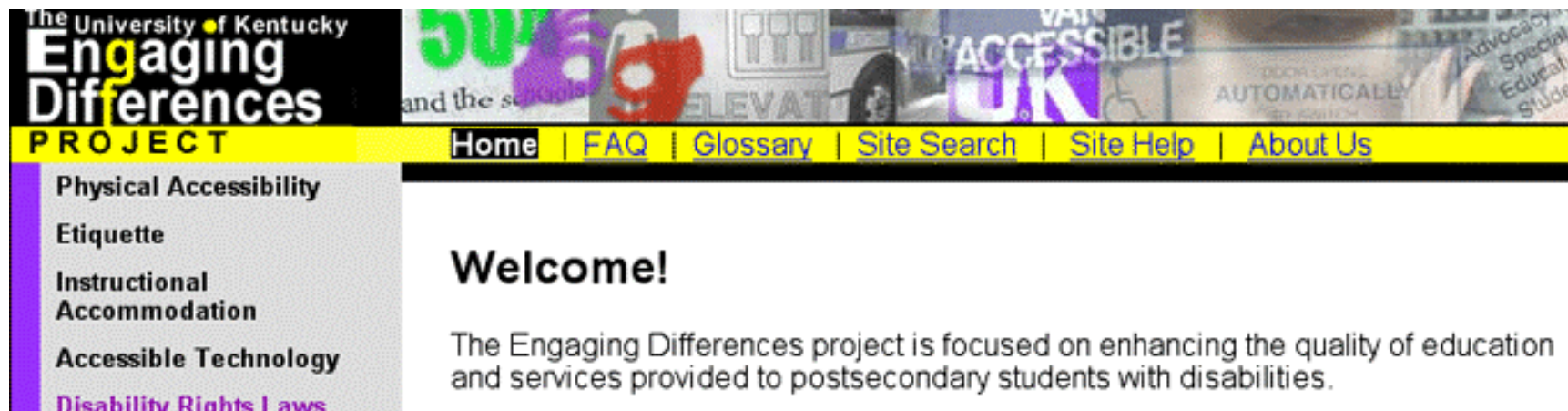
The screenshot shows a navigation menu on the left with the following items: Physical Accessibility, Etiquette, Instructional Accommodation, Accessible Technology, **Disability Rights Laws** (highlighted in yellow), Campus Policy, Legal Implications, Services & Experts, and Related Literature. The main content area at the top has a purple header with links: [Rehab Act Overview](#) | **501: FAQ** | [503: FAQ](#) | [504: FAQ](#) | [508: FAQ](#). Below the header, the section title is **Section 501: FAQ**. The main content lists several questions under the heading **What Does Section 501 Mandate?**: [Is an Employer Required to Provide Reasonable Accommodation to Applicants?](#), [Does an Employee Have to Disclose a Disability?](#), [Who Decides on and Pays for a Needed Accommodation?](#), [Is an Employer Required to Hire a Qualified Person with a Disability?](#), [Do Non-Work Areas and Employer-Provided Transportation Have to Be Accessible?](#), and [How is a Complaint Resolved?](#)

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Figure 14b. Info Pages Navigation Menus After the Field Trial Phase

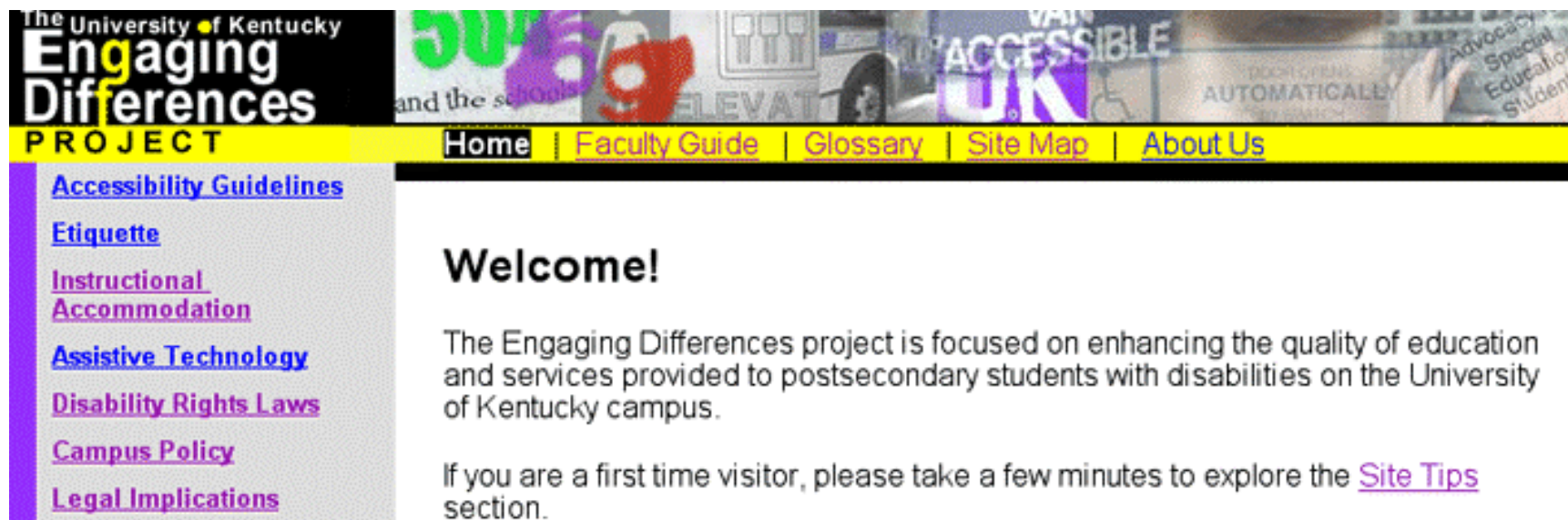
The screenshot shows the navigation menu updated with the following items: [Accessibility Guidelines](#), [Etiquette](#), [Instructional Accommodation](#), [Assistive Technology](#), **Disability Rights Laws** (highlighted in yellow), [Campus Policy](#), [Legal Implications](#), Services & Experts, Related Literature, and [Legal Cases](#). The main content area at the top has a purple header with links: [Disability Rights Laws](#) | [Rehabilitation Act](#) | **Section 501: FAQ**. Below the header, the section title is **Section 501: FAQ**. The main content lists the same questions as in Figure 14a under the heading **What Does Section 501 Mandate?**: [Is an Employer Required to Provide Reasonable Accommodation to Applicants?](#), [Does an Employee Have to Disclose a Disability?](#), [Who Decides on and Pays for a Needed Accommodation?](#), [Is an Employer Required to Hire a Qualified Person with a Disability?](#), [Do Non-Work Areas and Employer-Provided Transportation Have to Be Accessible?](#), and [How is a Complaint Resolved?](#)

Figure 15a. Site Navigation Menu Prior to the Field Trial Phase



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Figure 15b. Site Navigation Menu After the Field Trial Phase



Chapter IV

Conclusions

The purpose of this chapter is to interpret and discuss the results of this investigation. The first section presents limitations of this investigation. The second section discusses the results of this investigation. The third section describes the implications of this research for researchers and developers. The final section suggests future topics of research related to this investigation.

Limitations of the Investigation

There are several limitations of this investigation. These include the small number of participants, the influence of technical problems, and the lack of tracking data in the field trial phase. Following is a discussion of each limitation.

Small Number of Participants

While the investigator was able to recruit the desired number of reviewers and users during the four evaluation phases, the small number of reviewers and users limited the generalization of the findings of this investigation. In addition, all users were from the University of Kentucky, the campus for which the WPSS was designed. Thus, the results about the effectiveness of the WPSS among academic administrators, instructional personnel, and auxiliary service administrators is specific to the University of Kentucky and cannot be generalized to all postsecondary personnel.

Technical Problems

Several technical problems reported by some users may have affected the results of this investigation. First, the technical requirements of the on-line versions of the evaluation instruments caused difficulties for some one-to-one users. This problem, however, was resolved by providing users in the consumer analysis and field trial phases with a print version of the evaluation instruments.

A server error prevented consumer analysis and field trial users from being able to explore the **Info Search** component, especially those attempting to use topical listings on the **Services and Experts** search page. The investigator was able to describe the content of the section to consumer analysis users so that they could continue with the evaluation session. Forty percent of the field trial users reported this

technical problem; some, however, were able to resolve this problem using the keyword search feature.

A server error prevented field trial users from accessing internal discussion forums in the **Express Yourself** component. A limited number of field trial users reported this problem.

Finally, technical problems prevented a limited number of consumer analysis and field trial users from accessing audio in the **Viewpoints** component. These technical problems appeared to be machine specific and caused only minor difficulties because the audio was accompanied by text. These technical problems may have affected the ability of some users to experience the WPSS and may have depressed their scores on the in-session questionnaire and post-session survey.

Tracking Data

The lack of tracking data during the field trial phase limited the generalization of some findings of this investigation. Collection of these data would have allowed a better comparison of the effectiveness of the WPSS for postsecondary personnel.

Collection of these data, however, was deemed impractical for several reasons. First, field trial users could not be expected to locate a response in the WPSS, track the time required to locate the response, and record the path followed to locate the response for individual questions on the in-session questionnaire. Second, the time line established for this investigation did not allow for the development of scripts that would be necessary to track the path followed by the user within the WPSS. Third, project staff did not have the technical skills required to include the required coding within the WPSS to collect these data as the user responded to the in-session questionnaire.

Interpretation of Results

In light of the limitations of this investigation, the following conclusions were drawn. A discussion of results for research questions will be discussed related to the respective evaluation phases conducted.

Expert Review Phase

Design and usability experts reported difficulties related to all nine heuristics. Nine actions were undertaken to resolve problems reported by design and usability experts. First, a stronger combination of background and foreground colors was used to highlight the location of the page in the navigation menus. Second, the response pages in the **Viewpoints** component were redesigned so that the response was presented in a new Web browser window. Third, a brief introductory message was added to the **Entry Page** to inform users about the purpose of the WPSS. Fourth, the coding in the **Viewpoints** component was reviewed to determine why content in link boxes is being cut off the right hand side of the page. Fifth, story headers on the **Entry Page** were made into hyperlinks to avoid user confusion. Sixth, montages were used throughout associated components. Seventh, project staff reviewed the page layout of the WPSS to ensure that the most important information was contained on the top half of pages. Eighth, logos at the top of each page were replaced with the montages for each component. Ninth, an overview of the WPSS and information about how to use the components of the WPSS was added to the **Site Tips** section.

Subject matter experts generally agreed that the WPSS contained information that was current and best practice in the field. Subject matter experts also agreed that the media contained in the WPSS supported the content. Subject matter experts agreed that use of the WPSS was feasible and enhanced the accommodation of postsecondary students with disabilities. Finally, subject matter experts agreed that the WPSS was appropriate for postsecondary personnel.

Based on comments from subject matter experts, two actions were taken by project staff to improve the WPSS. First, project staff reviewed pages and determine that content was chunked appropriately on pages in the WPSS. Second, the logos at the top of each page were replaced with montages for associated components of the WPSS to simplify the page layout.

Individuals with disabilities generally agreed that the WPSS contained information that was current and best practice in the field. Individuals with disabilities generally agreed that use of the WPSS was feasible and enhanced the accommodation

of postsecondary students with disabilities. Finally, individuals with disabilities generally agreed that the WPSS was appropriate for postsecondary personnel.

Individuals with disabilities, however, reported difficulties related to missing alt and title tags, insufficient contrast between foreground and background colors, lengthy pages, navigation, and missing contextual and orientation information. Eleven actions were undertaken to resolve problems reported by individuals with disabilities. First, alt tags were added to images used to illustrate the featured stories on the **Entry Page** to allow individuals who use screen readers to have equal access to the content. Second, title tags were added to the site navigation menu so that the contents of available sections were clearly described. Third, the text logo was replaced with a montage with an empty alt tag so that screen readers would ignore this page decoration. Fourth, darker colors were used for section headers on pages to provide more contrast between the foreground and background. Fifth, project staff reviewed the format of pages to determine if they could be shortened or formatted differently to lessen the textual impact. Sixth, hyperlinks within the WPSS were reviewed to ensure that their format was consistent. Seventh, the sub-navigation menu were moved into the page content area so that it was separated from the site navigation menu by a line of color. Eighth, information about how to linearize Web pages, an overview of the WPSS, and information about how to use the components of the WPSS were added to the **Site Tips** section. Ninth, the **Viewpoints Index** page was changed to a linear format. Tenth, a phrase was added to identify the speaker at the beginning of each quote on **Viewpoints** story pages. Finally, the format of the response pages for stories was changed to a page that only contained the response selected by the user in a new Web browser window.

One-to-One Phase

The WPSS was effective in providing information to personnel on the UK campus. All three constituent groups (i.e., academic administrators, instructional personnel, and auxiliary service administrators) obtained an accuracy rate of 80% or higher on the in-session questionnaire. In addition, users viewed an average of 6.5 pages per question to locate responses to the in-session questionnaire.

When analyzing data for specific questions on the in-session questionnaire, the WPSS was more effective at providing certain information (i.e., campus policy, legal cases, and campus services) than other information (i.e., reasonable accommodations, discussion forums, and perspectives on disability issues). To improve the effectiveness of the WPSS in providing information to postsecondary personnel, six actions were taken. First, a **FAQ** section was added to the WPSS, which provided specific information and a direct link to the areas in the **Info Pages** component related to these topics. Second, the **Info Exchange** component was renamed **Express Yourself**. Third, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component. Fourth, the **UK-ED forums** were adjusted to better reflect how users might wish to interact. Fifth, the **Viewpoints** component was renamed **Viewpoints Index** on the navigation menu on the left side of each page in the WPSS. Sixth, an introductory paragraph was added to the **Story Index** page to provide users with an overview of the section.

Users generally agreed that the **Info Pages** component was attractive, easy to navigate and understand, interesting, clearly organized, and useful in their professional activities. With regard to the **Info Search** component, users also agreed that the keyword search feature was easy to use, the retrieved information was relevant and useful, the format of the search pages and retrieved information was acceptable, the topical listings were useful, and the navigation features were helpful. Users agreed that the **Viewpoints** component held their interest, caused them to explore their attitudes about disabilities and accommodation, and was easy to navigate. Finally, users agreed that the story responses opening a new window was useful, that the media enhanced the content, and that they liked the story page format in the **Viewpoints** component. Users' perceptions of the WPSS were generally positive and nearly all of the negative

ratings on the post-session survey (i.e., ten out of 12) were attributed to two users, one academic administrator and one instructional employee.

Analysis of user comments on the post-session survey, however, indicated that there were areas in the WPSS that required revision. Based on these data, eight actions were taken by project staff to improve the WPSS. First, the HTML code associated with search boxes in the **Info Search** component was modified to narrow the search results provided by the UK search engine. Second, information from the **Faculty Guide** in the **Publications** area of the **About Us** section was converted to a **FAQ** section. Third, a brief description of the components of the WPSS was added to the **Entry Page**. Fourth, the **Info Exchange** component was renamed **Express Yourself**. Fifth, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component. Sixth, the **UK-ED forums** in the **Express Yourself** component were adjusted from topic forums to campus-specific forums. Seventh, a **Glossary** section was added to the site navigation menu. Eighth, stories from the **Viewpoints** component were identified through the inclusion of a header called **Feature Stories** on the **Entry Page**.

The main difficulties encountered during the one-to-one phase consisted of the amount of time required by administrators to locate responses to specific questions on the in-session questionnaire, confusion over the evaluation instruments, and a few technical problems. Ten actions were taken to resolve these problems. First, the content in the **Cases Index** area of the **Info Pages** component was reformatted to be included as a searchable area in the **Info Search** section. Second, the **Info Exchange** component was renamed **Express Yourself**. Third, a hyperlink to the **Site Tips** section of the WPSS about discussion forums was included in the introduction to the **Express Yourself** component. Fourth, the introductory page to **Express Yourself** component was reformatted to include external discussion forums and listservs as well as **UK-ED discussion forums**. Fifth, the **UK-ED forums** were adjusted to better reflect how users might wish to interact. Sixth, a spelling error on the **Site Map** page was corrected. Seventh, additional text was added to the **Student 4** response page in the **Balancing Acts** story to match the corresponding audio. Eighth, errors in the HTML code on the **Labeling the Problem Part 3** and **LII** entry pages were corrected. Ninth, the

investigator created a print version of the evaluation instruments for users to complete to replace the electronic version currently offered. Tenth, directions on the in-session questionnaire were rewritten to enhance user understanding.

Consumer Analysis Phase

The WPSS was effective in providing information to personnel on the UK campus. All three constituent groups (i.e., academic administrators, instructional personnel, and auxiliary service administrators) obtained an accuracy rate of 76% or higher on the in-session questionnaire. Consumer analysis users viewed an average of 5.3 pages per question to locate responses to the in-session questionnaire. Accuracy rates may have been confounded by technical difficulties experienced by users while interacting with the WPSS.

When analyzing data for specific questions on the in-session questionnaire, the WPSS was more effective at providing certain information (i.e., campus policy, legal cases, related literature, discussion forums, and perspectives on disability issues) as opposed to other information (i.e., reasonable accommodations and campus services). To improve the effectiveness of the WPSS in providing information to postsecondary personnel, two actions were taken. First, areas of the WPSS that provided information about reasonable accommodations were highlighted as feature items at the bottom of the left navigation menu on the **Entry Page**. Second, issues with the UK search engine that prevented users from accessing the entries in the **Services and Experts** area were resolved.

Users generally agreed that the **Info Pages** component was attractive, easy to navigate and understand, interesting, clearly organized, and useful in their professional activities. With regard to the **Info Search** component, users also agreed that the keyword search feature was easy to use, the retrieved information was relevant and useful, the format of the search pages and retrieved information was acceptable, the topical listings were useful, and the navigation features were helpful. Users agreed that the **Viewpoints** component held their interest, caused them to explore their attitudes about disabilities and accommodation, and was easy to navigate. Finally, users agreed that the format of the story responses was useful, that the media enhanced the content, and that they liked the story page format in the **Viewpoints** component. Users'

perceptions of the WPSS were generally positive and nearly all of the negative ratings on the post-session survey (i.e., three out of five) were attributed to one auxiliary service administrator.

Analysis of user comments on the post-session survey, however, indicated that there were areas in the WPSS that required revision. Based on these data, three actions were taken by project staff to improve the WPSS. First, three versions of the WPSS (i.e., UK version, LCC version, and KCTCS version) were created to reduce the number of steps required by users to access information about campus policy. Second, the **Relevant Cases** area in the **Info Search** section was renamed **Legal Cases** to clarify the content contained in this area. Third, project staff highlighted selected items, such as the **FAQ** section, at the bottom of the left navigation menu on the **Entry Page** to allow users to quickly access information.

The main difficulties encountered during the consumer analysis phase consisted of the amount of time required by auxiliary service administrators to locate a response to the fifth question on the in-session questionnaire, some confusion over the evaluation instruments, and a few technical problems. Five actions were taken to resolve these problems. First, server errors that prevented users from accessing the **Services and Experts** and **Related Literature** areas in the **Info Search** component were resolved. Second, the HTML code for a hyperlink in the **FAQ** section was revised so that the hyperlink functioned properly. Third, the HTML code for pages that contained a bottom sub-navigation menu was revised. Fourth, the HTML code for the **Relevant Cases** area hyperlink on the **Services and Experts** search page was revised so that the font matched other font in the left navigation menu. Fifth, the HTML code for a missing image on the **Room for Improvements** story page was revised so that the image was rendered.

Field Trial Phase

The WPSS was effective in providing information to personnel on the UK campus. All three constituent groups (i.e., academic administrators, instructional personnel, and auxiliary service administrators) obtained an accuracy rate of 74% or higher on the in-session questionnaire. A number of factors may have been responsible for the differences among the three constituent groups. First, the smaller sample size of

auxiliary service administrators may have confounded the results. In addition, the scores may have been affected by technical difficulties experienced while interacting with the WPSS. Consequently, no changes were made in the WPSS based on these data.

Users generally agreed that the **Info Pages** component was attractive, easy to navigate and understand, interesting, clearly organized, and useful in their professional activities. With regard to the **Info Search** component, users also agreed that the keyword search feature was easy to use, the retrieved information was relevant and useful, the format of the search pages and retrieved information was acceptable, the topical listings were useful, and the navigation features were helpful. Users agreed that the **Viewpoints** component held their interest, caused them to explore their attitudes about disabilities and accommodation, and was easy to navigate. Finally, users agreed that the story responses opening a new window was useful, that the media enhanced the content, and that they liked the story page format in the **Viewpoints** component. Because the users' perceptions of the WPSS were positive and the majority of negative ratings (i.e., 16 of 21 negative ratings) were attributed to five users, no changes in the WPSS were necessary.

Analysis of user comments on the post-session survey, however, indicated that there were areas in the WPSS that required revision. Based on these data, three actions were taken by project staff to improve the WPSS. First, the sub-navigation menus at the top and bottom of pages in the **Info Pages** component were changed to a breadcrumb trail that shows the path followed by the user to access the page. Second, faulty HTML code for the campus resources listing on the **Services and Experts** search page was revised. Third, the **FAQ** section was renamed **Faculty Guide** to better reflect the purpose of this section of the WPSS.

The main difficulties encountered during the field trial phase consisted of the amount of time required by auxiliary service administrators to locate a response to the second question on the in-session questionnaire, some confusion over the evaluation instruments, and a few technical problems. One action was taken to alleviate these difficulties. Faulty HTML code for the campus resources listing on the **Services and Experts** search page was revised.

Implications for Researchers and Developers

This investigation demonstrated the value of formative evaluation in the development of Web-based performance support systems. It has implications for researchers and developers of WPSSs. Following is a discussion of each implication.

Value of Formative Evaluation in the Development Process

With the fast-paced, and often complex, design process of Web-based materials, the need for formative evaluation is great, but is sadly lacking (Dick and Carey, 1996). This investigation supports the need to build formative evaluation into the development process. Data from expert reviewers and users who represented the targeted population on the UK campus resulted in several key revisions. For example, based on feedback from individuals with disabilities as well as design and usability experts, logos were eliminated from the tops of pages and replaced with montages. This action maximized screen real estate and provided another visual cue to orient the user to specific components of the WPSS.

In addition, information about legal cases was reformatted to allow faster retrieval of situation-specific information. Based on comments from users and observations during the one-to-one phase, this information was transformed from a didactic overview of cases with hyperlinks to more detailed information to a searchable database of legal cases with summaries and hyperlinks to external resources. Finally, a Faculty Guide was added to the site navigation menu to allow easy access to information as well as another method for information retrieval.

Value of Evaluation Instruments

While the instruments developed for use in this investigation were not generic, they do provide specific factors that should be evaluated during the development process.

Design and usability. The survey for design and usability experts was designed to gather specific information about the design and usability of a WPSS based on Nielsen's usability heuristics (1994). When reviewing a WPSS during the development process for design and usability, developers should assess the following factors:

1. **Visibility of Status** - Does the WPSS keep users informed of what is going on? Does the user know where he or she is and where he or she can go next in the WPSS?
2. **Speaks User's Language** – Does the WPSS match the real world needs of the user? Is the language familiar and clear to the user? Is information presented in a natural and logical order?
3. **User Control and Freedom** – Can users control their path through the WPSS? Are users forced into certain fonts, colors, screen widths, or Web browser versions? Does the user have control of the use of multimedia (i.e., playing streaming video, downloading files, listening to audio files)?
4. **Consistency and Standards** – Is there a consistent look-and-feel to the WPSS? Does the WPSS follow standard conventions such as vocabulary, links, titles, and headers? Is the layout of the WPSS consistent in terms of colors, font, and formatting? Are platform conventions, such as HTML standards and link colors, followed in the WPSS?
5. **Recognition Rather Than Recall** – Is the user forced to remember key information across multiple pages? Are objects, actions, and options clearly visible to the user through the use of labels and descriptive links? Is content presented so that pages are succinct and focus on one topic?
6. **Flexibility and Ease of Use** – Does the WPSS allow users of varying experiences and goals to access information in a timely manner? Are the pages of the WPSS clearly labeled so that they are easy for bookmark for future use?
7. **Aesthetic and Minimalist Design** – Is the design of the WPSS visually appealing to the user? Do the pages of the WPSS contain extraneous information that is irrelevant or distracting?
8. **Progressive Levels of Detail** – Does the WPSS contain information at progressive levels of detail so that the user can select the complexity of desired information on a topic?

9. **Help & Documentation** – Does the WPSS contain help and documentation information? Is help integrated into the WPSS so the user has assistance quickly and easily? Is help provided in the user’s language?

Accessibility for individuals with disabilities. The survey for individuals with disabilities was designed to gather specific information about the accessibility of a WPSS based on the accessibility guidelines from the World Wide Web Consortium (1999). When reviewing a WPSS during the development process for accessibility, developers should assess the following factors:

1. **Text Equivalents** – Are text labels and, when necessary, longer descriptive link for images and video provided in the WPSS? Are synchronized transcripts provided for stand-alone audio files and tracks of video in the WPSS?
2. **Content is Clear without Color** – Does the WPSS convey information through color alone? When color is used to emphasize certain content, is a font effect (e.g., strong) or text links provided in the WPSS? Does the foreground and background color combinations provide enough contrast so that someone with color deficits or printing information can view the text clearly?
3. **Simple and Clear Language** – Is the language of the WPSS clear and simple? Are titles used to clarify abbreviations and acronyms used in the WPSS? Is slang and jargon defined in the WPSS? Are clear and accurate headings and link descriptions used in the WPSS? Is the main idea of the paragraph stated at the beginning of paragraphs in the WPSS? Do pages in the WPSS contain information that is irrelevant or distracting?
4. **Clear and Consistent Navigation** – Does the WPSS have a consistent layout? Can users locate navigation mechanisms in the WPSS easily? Can users easily skip navigation mechanisms to find important content? Do links in the WPSS have concise, but descriptive names? Are keyboard alternatives and tab ordering provided for navigation through the WPSS?
5. **Context and Orientation Information** – Does the WPSS provide information about accessibility features and the general layout of the WPSS? Is content

and navigation in the WPSS grouped in a logical order? Is contextual information about the relationships between links and parts of a page provided? Is content in the WPSS grouped so that pages are short and focused on one topic when possible?

Content components. The survey for subject matter experts was designed to determine whether the WPSS provided appropriate information about the provision of accommodations to students with disabilities at the postsecondary level. When reviewing a WPSS during the development process for content, developers should assess the following factors:

1. Does content in the WPSS reflect current views? Does it represent best practice in the field?
2. Is content in the WPSS accurate?
3. Is content in the WPSS complete?
4. Is content in the WPSS presented in a clear and organized manner?
5. Is content in the WPSS feasible for use by the targeted audience?
6. Does content in the WPSS promote user confidence in application of the information?
7. Does content in the WPSS promote exploration of user attitudes and biases about the topic?
8. Does the use of media support understanding of the content in the WPSS?
9. Is content in the WPSS appropriate for use by the targeted audience?

WPSS features and components. The in-session questionnaires were designed to determine whether the WPSS provided information about common issues related to accommodation at the postsecondary level. In addition, the post-session survey was designed to assess the content as well as specific features of the WPSS. When reviewing a WPSS during the development process for features and components, developers should assess the following factors:

1. Is the user able to find answers to questions using the WPSS?
2. How long does it take the user to locate desired information in the WPSS?
3. How many pages does the user view to locate desired information in the WPSS?

4. Is content in the WPSS easy to understand?
5. Are the features of the WPSS easy to use?
6. Is the WPSS visually appealing to the user? Is the format of the WPSS acceptable to the user?
7. Does the content in the WPSS hold the user's interest?
8. Are the navigation features of the WPSS (i.e., navigation menus, links, buttons) helpful to the user?
9. Is the WPSS clearly organized?
10. Is the information in the WPSS relevant to the user? Is it useful to the user?
11. Does the use of media in the WPSS enhance understanding of content for the user?
12. Does the WPSS allow for personal exploration of attitudes by the user?

Types of evaluation. The nature of the evaluation instruments developed for this investigation provides direction for the design of evaluation instruments for future investigations. While the instruments were designed according to Dick and Carey's (1996) approach to instructional design, they also were developed to reflect the medium through which instruction was delivered. For example, during the expert review phase individuals with disabilities were asked to evaluate the WPSS based on accessibility guidelines from the World Wide Web Consortium (1999) via a heuristic evaluation. This allowed the individuals to report any violation within the WPSS, instead of responding to specific items on a survey designed to assess its accessibility. By employing an open-ended evaluation, project staff were able to make key revisions related to accessibility, such as eliminating the text logo at the top of each page, which would not have been indicated using a Likert-type scale instrument.

The design of in-session questionnaires for one-to-one, consumer analysis, and field trial phases also reflected a focus on the medium. Rather than a pre-test/post-test method, users were given a scenario-based instrument that required them to use the WPSS to locate responses. Finally, the post-session survey for users measured dimensions such as motivation and navigation as well as the impact of specific design features such as opening new Web browser windows and search engines.

Suggestions for Future Research

The limitations of this investigation, the feedback from users during evaluation sessions, and the investigator's experiences in developing this WPSS indicate the need for research specific to the implementation of the UK-ED WPSS as well as the implementation of WPSSs in educational environments in the future. The following questions are recommended topics for future research:

1. Is the UK-ED WPSS, in its complete form, effective for use at the postsecondary education level? What barriers to its use on the UK campus exist? What resources are required for its implementation?
2. Does the UK-ED WPSS have an impact on the accommodation process? How can such data be collected and interpreted?
3. What can tracking data tell the WPSS developer? How can such data be collected and interpreted?
4. What features should be built into a WPSS to enhance user performance in an educational environment?
5. What are the barriers to implementation of a WPSS in an educational environment?
6. What are the most effective methods for promoting use of a WPSS in an educational environment?

Summary

This study used Dick and Carey's (1996) model of instructional design to conduct a formative evaluation of a Web-based performance support system (WPSS) designed for academic administrators, instructional employees, and auxiliary service administrators to enhance accommodations for postsecondary students with disabilities. During the expert review phase, subject matter experts, instructional design and usability experts, and individuals with disabilities completed surveys to assess the degree to which the WPSS contained current content, included elements of effective design, and was accessible to individuals with disabilities. During the one-to-one, consumer analysis, and field trial phases, academic administrators, instructional personnel, and auxiliary service administrators on the University of Kentucky campus completed a questionnaire using the WPSS to assess the degree to which the WPSS

was effective in providing information. In addition, users completed a survey to assess their perceptions of the WPSS. Finally, data were collected to assess difficulties encountered by users.

Results from the expert review phase of the evaluation suggest that the WPSS contained current content, included elements of effective design, and was accessible to individuals with disabilities. Analysis of the questionnaire scores from all phases revealed that users obtained a mean accuracy rate of 74% or higher on the in-session questionnaire. In addition, all users required a mean of 3.9 minutes or less per question to locate responses for items on the questionnaire. The perceptions of all users about the WPSS were positive. Results also indicated that users reported a variety of technical difficulties; however, the majority were related to server errors.

Appendix A
Recruitment Letters For Evaluation Phases

To: Design Expert Reviewer
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Request for Participation in Evaluation of UK-ED Web-based performance support system

Dear Design Expert Reviewer,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant, and a doctoral candidate in the Department of Special Education and Rehabilitation Counseling. Currently I am conducting my dissertation research, which involves the formative evaluation of the Web-based performance support system (WPSS) to support postsecondary personnel in accommodating adult learners with disabilities that is being designed for the UK-ED project.

I am contacting you to request your assistance in the evaluation of this WPSS. Your participation would require that you: (1) review the UK-ED WPSS on-line and (2) complete a survey related to its usability and design.

You may indicate your willingness to participate in this study by responding to this message via an e-mail or leaving a voicemail message at (859) 257-7973. Also indicate whether you prefer to have a hard copy of the survey mailed to you or to download a pdf version of it. Please include your mailing address in your response.

After receiving your agreement, I will send an e-mail message containing a short set of directions and a link to the UK-ED WPSS. Upon receiving instructions, I request that you review the WPSS and submit the survey within two weeks. If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voicemail so that I may contact another prospective participant.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

To: Content Expert Reviewer
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Request for participation in evaluation of UK-ED Web-based performance support system

Dear Content Expert Reviewer,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant, and a doctoral candidate in the Department of Special Education and Rehabilitation Counseling. Currently I am conducting my dissertation research, which involves the formative evaluation of the Web-based performance support system (WPSS) to support postsecondary personnel in accommodating adult learners with disabilities that is being designed for the UK-ED project.

I am contacting you to request your assistance in the evaluation of this WPSS. Your participation would require that you: (1) review the UK-ED WPSS on-line and (2) complete an on-line survey related to the completeness and accuracy of information presented in the WPSS.

You may indicate your willingness to participate in this study by responding to this message or leaving a voicemail message at (859) 257-7973.

After receiving your agreement, I will send an e-mail message containing a short set of directions and links to the UK-ED WPSS and the on-line survey. Upon receiving instructions, I request that you review the WPSS and complete the survey within two weeks.

If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voicemail so that I may contact another prospective participant.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

To: Individual with a Disability
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Request for participation in evaluation of Web-based performance support system

Dear Individual with a Disability,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant, and a doctoral candidate in the Department of Special Education and Rehabilitation Counseling. Currently I am conducting my dissertation research, which involves the formative evaluation of the Web-based performance support system (WPSS) to support postsecondary personnel in accommodating adult learners with disabilities that is being designed for the UK-ED project.

I am contacting you to request your assistance in the evaluation of this WPSS. Your participation would require that you: (1) review the UK-ED WPSS on-line and (2) complete a two-part survey related to its accessibility.

You may indicate your willingness to participate in this study by responding to this message or leaving a voicemail message at (859) 257-7973. Also, let me know your preference for transmission of the survey: hard copy, Word document, or pdf file.

After receiving your agreement, I will send an e-mail message containing a short set of directions and a link to the UK-ED WPSS as well as the survey. Upon receiving instructions, I request that you review the WPSS and submit the survey within two weeks.

If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voicemail so that I may contact another prospective participant.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

To: One-to-One User

From: Kristina Krampe <kmkram1@pop.uky.edu>

Subject: Request for Participation in Evaluation of UK-ED Web-based performance support system

Dear One-to-One User,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant, and a doctoral candidate in the Department of Special Education and Rehabilitation Counseling. Currently I am conducting my dissertation research, which involves the formative evaluation of the Web-based performance support system (WPSS) to support postsecondary personnel in accommodating adult learners with disabilities that is being developed for the UK-ED project.

I am contacting you to request your assistance in the evaluation of this WPSS. Your participation would require that you: (1) respond to a series of questions while using the WPSS in an individual session and (2) complete an online satisfaction survey at the end of the session.

You may indicate your willingness to participate in this study by responding to this message or leaving a voice-mail message at (859) 257-7973. After receiving your agreement, I will contact you to arrange a one-on-one session to review the WPSS and complete evaluation materials between now and date two weeks later.

If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voice-mail so that I may contact another prospective participant.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

To: Consumer Analysis User
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Request for Participation in Evaluation of UK-ED Web-based performance support system

Dear Consumer Analysis User,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant, and a doctoral candidate in the Department of Special Education and Rehabilitation Counseling. Currently I am conducting my dissertation research, which involves the formative evaluation of a Web-based performance support system (WPSS) to support postsecondary personnel in accommodating adult learners with disabilities that is being designed for the UK-ED project.

I am contacting you to request your assistance in the evaluation of this WPSS. Your participation would require that you take approximately one hour to: (1) respond to a series of questions while using the WPSS in session and (2) complete a survey at the end of the session.

You may indicate your willingness to participate in this study by responding to this message via an e-mail message at kmkram1@pop.uku.edu or leaving a voicemail message at (859) 257-7973. After receiving your agreement, I will contact you to arrange a one-on-one session to review the WPSS and complete evaluation materials between date message sent and date two weeks later.

If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voicemail so that I may contact another prospective participant.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

To: Field Trial Academic Administrator
From: Kristina Krampe <kmkram1@uky.edu>
Subject: Request for Participation in Evaluation of UK-ED Web-based performance support system

Dear Field Trial Academic Administrator,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant from the Office of Postsecondary Education, which is focused on the development of a Web-based performance support system (WPSS) to support campus personnel in accommodating adult learners with disabilities. Dr. William Berdine, Professor and Chair of the Department of Special Education and Rehabilitation Counseling, is the principal investigator and directly supervises all project activities.

I am currently conducting a vital research phase, which involves the formative evaluation of the Web-based performance support system (WPSS) being designed by the UK-ED project. Since the UK-ED WPSS upon completion in October 2002 will remain at UK as a part of the Teaching and Learning Center, it is essential that key administrators involved in policy decisions regarding academic programs and students review the site prior to dissemination to all campus personnel.

Dr. Berdine has identified you based on your administrative position and likelihood that you will need information regarding postsecondary students with disabilities as part of your job responsibilities. I am contacting you to request your assistance in the evaluation of the UK-ED WPSS. Your participation would require you to take approximately 45 minutes to: (1) respond to an in-session questionnaire while using the WPSS and (2) complete a post-session survey about the WPSS.

You may indicate your willingness to participate in this study by responding to this message via e-mail or leaving a voicemail message at 257-7973. Please contact either Dr. Berdine (257-8592, berdine@uky.edu) or me, if you have any questions or need for clarification about the project and/or requirements for participation in this research.

After receiving your agreement, I will send a packet through campus mail with a short set of directions, a link to the WPSS, and materials to complete. Upon receiving instructions, I request that you review the WPSS and complete the evaluation materials within two weeks.

If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voicemail so that I may contact another prospective administrator to participate.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

To: Field Trial Instructional Employee
From: Kristina Krampe <kmkram1@uky.edu>
Subject: Request for Participation in Evaluation of UK-ED Web-based performance support system

Dear Field Trial Instructional Employee,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant from the Office of Postsecondary Education, which is focused on the development of a Web-based performance support system (WPSS) to support campus personnel in accommodating adult learners with disabilities. Dr. William Berdine, Professor and Chair of the Department of Special Education and Rehabilitation Counseling, is the principal investigator and directly supervises all project activities.

I am currently conducting a vital research phase, which involves the formative evaluation of the Web-based performance support system (WPSS) being designed by the UK-ED project. Since the UK-ED WPSS upon completion in October 2002 will remain at UK as a part of the Teaching and Learning Center, it is essential that faculty in all colleges review the site prior to dissemination to all campus personnel.

Dr. Berdine has identified you based on your college affiliation and likelihood that you will need information regarding postsecondary students with disabilities as part of your job responsibilities. I am contacting you to request your assistance in the evaluation of the UK-ED WPSS. Your participation would require you to take approximately 45 minutes to: (1) respond to an in-session questionnaire while using the WPSS and (2) complete a post-session survey about the WPSS.

You may indicate your willingness to participate in this study by responding to this message via e-mail or leaving a voicemail message at 257-7973. Please contact either Dr. Berdine (257-8592, berdine@uky.edu) or me, if you have any questions or need for clarification about the project and/or requirements for participation in this research.

After receiving your agreement, I will send a packet with a short set of directions, a link to the WPSS, and materials to complete. Upon receiving instructions, I request that you review the WPSS and complete the evaluation materials within two weeks.

If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voicemail so that I may contact another prospective faculty member to participate.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

To: Field Trial Auxiliary Service Administrator
From: Kristina Krampe <kmkram1@uky.edu>
Subject: Request for Participation in Evaluation of UK-ED Web-based performance support system

Dear Field Trial Auxiliary Service Administrator,

I am Project Director for the University of Kentucky Engaging Differences Project (UK-ED), a three-year federally funded grant from the Office of Postsecondary Education, which is focused on the development of a Web-based performance support system (WPSS) to support campus personnel in accommodating adult learners with disabilities. Dr. William Berdine, Professor and Chair of the Department of Special Education and Rehabilitation Counseling, is the principal investigator and directly supervises all project activities.

I am currently conducting a vital research phase, which involves the formative evaluation of the Web-based performance support system (WPSS) being designed by the UK-ED project. Since the UK-ED WPSS upon completion in October 2002 will remain at UK as a part of the Teaching and Learning Center, it is essential that key administrators involved in providing auxiliary services to students review the site prior to dissemination to all campus personnel.

Dr. Berdine has identified you based on your administrative position and likelihood that you will need information regarding postsecondary students with disabilities as part of your job responsibilities. I am contacting you to request your assistance in the evaluation of the UK-ED WPSS. Your participation would require you to take approximately 45 minutes to: (1) respond to an in-session questionnaire while using the WPSS and (2) complete a post-session survey about the WPSS.

You may indicate your willingness to participate in this study by responding to this message via e-mail or leaving a voicemail message at 257-7973. Please contact either Dr. Berdine (257-8592, berdine@uky.edu) or me, if you have any questions or need for clarification about the project and/or requirements for participation in this research.

After receiving your agreement, I will send a packet with a short set of directions, a link to the WPSS, and materials to complete. Upon receiving instructions, I request that you review the WPSS and complete the evaluation materials within two weeks.

If you cannot participate in this study, please indicate your desire not to participate by informing me via e-mail or voicemail so that I may contact another prospective administrator to participate.

Thank you for taking the time to consider assisting me in this research.

Sincerely,
Kristina Krampe

Appendix B
Communication Letters For Evaluation Phases

To: Design Expert Reviewer
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Evaluation of the UK-ED Web-based performance support system

Dear Design Expert Reviewer,

Thank you for agreeing to participate in the formative evaluation of the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to support postsecondary personnel in accommodating adult learners with disabilities. The UK-ED project is just beginning the second year of a three-year grant from the Office of Postsecondary Education. The purpose of our project is to develop a Web-based environment where postsecondary personnel can educate themselves, obtain information, and explore their attitudes about accommodating students with disabilities.

Your participation will involve (1) reviewing the UK-ED WPSS and (2) completing a survey about its usability and design. For the first survey, you will be asked to review the WPSS looking for violations of design and usability. Using the attached form, please identify violations and indicate their locations based on the enclosed 9 heuristic principles. Your code is: ER.IR.#.

Prior to reviewing the WPSS, I will need you to read and sign a consent form. Please provide me with a fax number or mailing address so that I can send you a copy. You also should pay attention to the directions, description of the various components of the WPSS, and explanation of the heuristic principles contained in the survey document.

To view the WPSS, go to http://www.uky.edu/TLC/grants/uk_ed/index.html. You can download a copy of the design survey by clicking the link "Web Design & Usability: Section 1 (pdf)" at the bottom of the side navigation bar. To learn more about the project, click on the "About Us" link at the site. I would recommend making a bookmark for the site so that you can access it easily in the future. I request that you review the WPSS and submit the first portion of the survey by date two weeks later.

If you have difficulty completing the survey, please contact me via e-mail or voicemail ([859] 257-7973) so that I may provide you with technical assistance. Also contact me if you cannot participate in this study so that I may contact another prospective participant.

Thank you for taking the time to assist me in this research.

Sincerely,
Kristina Krampe

To: Content Expert Reviewer
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Evaluation of the UK-ED Web-based performance support system

Dear Content Expert Reviewer,

Thank you for agreeing to participate in the formative evaluation of the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to support postsecondary personnel in accommodating adult learners with disabilities.

Your participation will involve (1) reviewing the UK-ED WPSS and (2) completing an on-line survey related to the completeness and accuracy of the information presented in the WPSS. Your code is: ER.SM.#.

Prior to reviewing the WPSS, I need you to read and sign a consent form. Please provide me with a fax number or mailing address so that I can send you a copy. You also should read the directions for the content survey at http://www.uky.edu/TLC/grants/uk_ed/contentsurvey.html which contain a brief description of the various components of the WPSS and links to the sections of the survey.

To view the WPSS, go to http://www.uky.edu/TLC/grants/uk_ed/index.html. To learn more about the project, click on the "About Us" link at our site. I would recommend making a bookmark for the site so that you can access it easily in the future. I request that you review the WPSS and submit the survey by date two weeks later.

If you have difficulty completing the survey, please contact me via e-mail or voicemail ([859] 257-7973) so that I may provide you with technical assistance. Also contact me if you cannot participate in this study so that I may contact another prospective participant.

Thank you for taking the time to assist me in this research.

Sincerely,
Kristina Krampe

To: Individual with a Disability
From: Kristina Krampe <kmkram1@mail.uky.edu>
Subject: Evaluation of the UK-ED Web-based performance support system

Dear Individual with a Disability,

Thank you for agreeing to participate in the formative evaluation of the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to support postsecondary personnel in accommodating adult learners with disabilities. The UK-ED project has just entered the second year of a three-year grant from the Office of Postsecondary Education. The purpose of our project is to develop a Web-based environment where postsecondary personnel can educate themselves, obtain information, and explore their attitudes about accommodating students with disabilities.

Your participation will involve (1) reviewing the UK-ED WPSS and (2) completing a two-part survey about its accessibility which is attached to this message. Your reviewer code is: ER.LD/SI/PI.#.

Prior to reviewing the WPSS, I will need you to read and sign a consent form. Please provide me with a fax number or mailing address so that I can send you a copy. You also should read the directions for the attached survey.

To view the WPSS, go to http://www.uky.edu/TLC/grants/uk_ed/index.html. To learn more about the project, click on the "About Us" link within our site. I would recommend making a bookmark for the site so that you can access it easily in the future. I request that you review the WPSS and submit the survey by date two weeks later.

If you have difficulty completing the survey, please contact me via e-mail or voicemail ([859] 257-7973) so that I may provide you with technical assistance. Also contact me if you cannot participate in this study so that I may contact another prospective participant.

Thank you for taking the time to assist me in this research.

Sincerely,
Kristina Krampe

To: One-to-One User
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Evaluation of the UK-ED Web-based performance support system

Dear One-to-One User,

Thank you for agreeing to participate in the formative evaluation of the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to support postsecondary personnel in accommodating adult learners with disabilities. The UK-ED project is in the second year of a three-year grant from the Office of Postsecondary Education. The purpose of our project is to develop a Web-based environment where postsecondary personnel can educate themselves, obtain information, and explore their attitudes about accommodating students with disabilities.

Your participation will involve responding to a series of questions while using the WPSS in a session with me and completing an on-line satisfaction survey at the end of the session. This session should last approximately one hour.

Please indicate your availability for a meeting between now and date two weeks later. Also, provide me with your preference for a location to meet. The location must allow for access to a computer with Internet connection and be in a location with minimal distractions. If you require an accommodation, please let me know in advance so that arrangements can be made.

If you cannot participate in this study, please contact me via e-mail or voice-mail ([859] 257-7973) so that I may contact another prospective participant.

Thank you for taking the time to assist me in this research.

Sincerely,
Kristina Krampe

To: Consumer Analysis User
From: Kristina Krampe <kmkram1@pop.uky.edu>
Subject: Evaluation of the UK-ED Web-based performance support system

Dear Consumer Analysis User,

Thank you for agreeing to participate in the formative evaluation of the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to support postsecondary personnel in accommodating adult learners with disabilities. The UK-ED project is in the second year of a three-year grant from the Office of Postsecondary Education. The purpose of our project is to develop a Web-based environment where postsecondary personnel can educate themselves, obtain information, and explore their attitudes about accommodating students with disabilities.

Your participation will involve responding to a series of questions while using the WPSS in a session with me and completing an on-line satisfaction survey at the end of the session. This session should last approximately one hour.

Please indicate your availability for a meeting between now and date two weeks later. Also, provide me with your preference for a location to meet. The location must allow for access to a computer with Internet connection and be in a location with minimal distractions. If you require an accommodation, please let me know in advance so that arrangements can be made.

If you cannot participate in this study, please contact me via e-mail or voice-mail ([859] 257-7973) so that I may contact another prospective participant.

Thank you for taking the time to assist me in this research.

Sincerely,
Kristina Krampe

To: Field Trial User
From: Kristina Krampe <kmkram1@uky.edu>
Subject: Re: Request for Participation in Evaluation of UK-ED Web-based performance support system

Dear Field Trial User,

Thank you for agreeing to participate. I will drop the materials in the campus mail. You should receive them by the end of the week. If you have questions upon receiving the materials, don't hesitate to contact me.

Regards,
Kristina Krampe

Dear Field Trial User,

The purpose of this research is to gather feedback regarding the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to aid in its development. During this session, you will complete 2 instruments: (1) an in-session questionnaire and (2) a post-session survey. This session should take approximately 45 minutes of your time.

Directions:

1. Sign both copies of the consent form. Please keep one copy for your records. Place the other in the enclosed, self-addressed envelope.
2. Review the in-session questionnaire. If you have any questions, please contact me at 257-7973 or kmkram1@uky.edu so that I may provide technical assistance.
3. Open your preferred browser (i.e., Netscape Navigator, Internet Explorer) and type in the following URL: http://www.uky.edu/TLC/grants/uk_ed/index.html. This is the entry page to the UK-ED site. The site is still in development so all sections are not complete at this time. Blue hyperlinks will indicate the sections that are currently available.
4. Complete the in-session questionnaire. Please do not explore the site prior to completing the questionnaire. Be sure to indicate the beginning and end time for each question.
5. Place the completed in-session questionnaire in the enclosed, self-addressed envelope.
6. Review the post-session survey. If you have any questions, please contact me at 257-7973 or kmkram1@uky.edu so that I may provide technical assistance.
7. Complete the post-session survey. If you need additional interaction with the site in order to respond to certain questions, please feel free to do so.
8. Upon completion of the post-session survey, place the survey in the enclosed, self-addressed envelope and drop it in the campus mail.

Thank you in advance for your assistance!

Appendix C
Heuristic Survey For Design and Usability Experts

Survey for the Heuristic Evaluation of the UK-ED WPSS
Section 1: Identifying Violations of Usability Heuristics

Directions:

The purpose of this survey is to gather feedback regarding the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to aid in its development. Use this form to identify and code violations of usability and instructional design within the WPSS. All of your responses will be kept confidential and will be used for the sole purpose of evaluating the UK-ED WPSS.

- 1) First, explore the WPSS. You might find it helpful to take notes about violations to the heuristic principles as you explore the system.
- 2) For each heuristic principle, list all violations you find within the system in the left column. If enough space is not provided to list all of the violations for a heuristic principle, attach a piece of paper including the heuristic principle, its violations, and their location(s). If you don't find a violation of a heuristic principle, list "No violations found" in the first row of the table under the heuristic principle on the survey.
- 3) For each violation listed in the left column, identify the location of the violation in the right column by entering the code at the bottom of each screen (e.g., EP is the code for the Entry Page for the WPSS).
- 4) List your code (from the enclosed letter), the platform (i.e., Mac or Windows), and browser (e.g., Internet Explorer 5, Netscape 4.7) at the bottom of the survey form.
- 5) Place the completed survey electronically and send your signed consent form via fax or conventional mail.

Thank you in advance for your participation.

Locations within the WPSS:

1) Entry Page

The Entry Page serves as the portal to the WPSS. From this page, the user can access all the components of the WPSS, learn about the site and project, obtain tips about interacting with the site, and search the site. In the line Page ID at the bottom of the page, the Entry Page is coded as EP.

2) Info Pages

The Info Pages provide didactic information about topical areas related to accommodating students with disabilities. Each Info page contains a purple banner at the top of the page. Users may select Info Pages for topical areas using the navigation menu included on the left side of each page or through related links from other components of the WPSS. In the line Page ID at the bottom of the Info Pages, each Info Page is coded as IP followed by a number.

3) Viewpoints

The Viewpoints area allows users to explore their attitudes about providing accommodations to postsecondary students with disabilities. Each Viewpoints page contains a blue banner at the top of the page. Viewpoints stories can be accessed through story headlines on the Entry Page or the Viewpoints link on the navigation menu included on the left side of each page. They also may be accessed through related links from other components of the WPSS. In the line Page ID at the bottom of the Viewpoints pages, each Viewpoints page is coded as VP followed by a number.

4) Info Search

The Info Search area contains links to information about services, experts, and literature related to accommodating postsecondary students with disabilities that may be searched by selecting the desired area from the navigation menu included on the left side of each page. Each Info Search page contains a red banner at the top of the page. The Info Search area also may be accessed through related links from other components of the WPSS. In the line Page ID at the bottom of the Info Search pages, each Info Search entry is coded as either SE or RL followed by a number.

5) Info Exchange

The Info Exchange component allows users to discuss the topic of accommodating students with disabilities in postsecondary education. Each Info Exchange page contains a green banner at the top of the page. The forums can be accessed through the Info Exchange link on the navigation menu on the left side of each page or through related links from other components of the WPSS.

Usability Heuristic Principles:

1) Visibility of System Status

The site should always keep users informed of what is going on, through feedback within a reasonable time limit. The navigation mechanisms (menus, links, and buttons) should allow the user to know where he or she is and where he or she can go next.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

2) Speaks User's Language

The site should match the real world of the user. The language should be familiar to the user. Information should be presented in a natural and logical order.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

3) User Control & Freedom

The site should provide the user with control and freedom. The navigational mechanisms should allow users to control their path through the site. Users should not be forced into certain fonts, colors, screen widths, or browser versions. The user should have control of advanced technologies such as streaming video and audio.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

4) Consistency & Standards

The site should have a consistent look-and-feel and follow standard conventions. Wording and terminology should be consistent throughout the site, especially on links, titles, and headers. The layout should be consistent in terms of colors, font, formatting, etc. Platform conventions, such as HTML standards and link colors, should be followed.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

5) Recognition Rather Than Recall

The site should not force users to remember key information across multiple pages. Objects, actions, and options should be clearly visible to the user through labels and descriptive links. Materials should be chunked so pages are succinct and focus on one topic.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

6) Flexibility & Ease of Use

Users should be able to access information no matter their experience or goal. The site should be designed so each page is clearly labeled so that bookmarks/favorites are easy for users to use.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

7) Aesthetic and Minimalist Design

The site should be visually appealing to the user. Pages should not include extraneous information that is irrelevant or distracting.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

8) Progressive Levels of Detail

The site should provide information at progressive levels of detail so that the user can select the complexity of desired information on a topic.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

9) Help & Documentation

The site should provide help and documentation when necessary. Help should be integrated into the site so the user has assistance quickly and easily. Solutions should be offered in natural language when problems occur.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

Reviewer Code: _____

Platform Used: (i.e., Windows or Mac) _____

Browser Used: (E.G., Explorer 5, Netscape 4.7) _____

Appendix D
Survey For Subject Matter Experts

Content Reviewers Survey: Directions

The purpose of this survey is to gather feedback regarding the University of Kentucky Engaging Differences Web-based performance support system (UK-ED WPSS) to aid in its development. Please review the UK-ED WPSS. Then indicate your answers to the following questions by clicking on the button next to your response. All of your responses will be kept confidential and will be used solely for the purpose of evaluating the WPSS.

1. Sign and mail consent form to me at 229 Taylor Education Building, University of Kentucky, Lexington, KY, 40506-0001.

NOTE: You may fax the consent form to 859-257-1325 if you prefer.

2. View the Info Pages in the UK-ED WPSS. These are the pages with the purple banner at the top and the code IP for the Page ID at the bottom of the page.
3. Please type your assigned code as well as platform and browser being used in the text boxes at the top of the survey page.
4. Read each question pertaining to the [Info Pages](#).
5. For each question, click in the button next to the response that best indicates your answer. If you are unable to answer a question, write a comment in the text box under that question.
6. Add specific comments in the text box under the question.
7. Send the form by clicking on the send button at the bottom of the survey.
8. Repeat this process for the following components:
 - [Viewpoints](#): These are the pages with the blue banner at the top and the code VP for the Page ID at the bottom of the page.
 - [Info Search](#): These are the pages with the red banner at the top and the code SE or RL for the Page ID at the bottom of the page.
 - [Summary](#)

Thank you in advance for your participation.

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Locations Within The WPSS

The Entry Page serves as the portal to the WPSS. From this page, the user can access all the components of the WPSS, learn about the site and project, obtain tips about interacting with the site, and search the site. In the line Page ID at the bottom of the page, the Entry Page is coded as EP.

The Info Pages provide didactic information about topical areas related to accommodating students with disabilities. Each Info Page contains a purple banner at the top of the page. Users may select Info Pages for topical areas using the navigation menu included on the left side of each page or through related links from other components of the WPSS. In the line Page ID at the bottom of the Info Pages, each Info Page is coded as IP followed by a number.

The Viewpoints area allows users to explore perspectives about providing accommodations to postsecondary students with disabilities. Each Viewpoints page contains a blue banner at the top of the page. Viewpoints stories can be accessed through story headlines on the Entry Page or the Viewpoints link on the navigation menu included on the left side of each page. They also may be accessed through related links from other components of the WPSS. In the line Page ID at the bottom of the Viewpoints pages, each Viewpoints page is coded as VP followed by a number.

The Info Search area contains links to information about services, experts, and literature related to accommodating postsecondary students with disabilities that may be searched by selecting the desired area from the navigation menu included on the left side of each page. Each Info Search page contains a red banner at the top of the page. The Info Search area also may be accessed through related links from other components of the WPSS. In the line Page ID at the bottom of the Info Search pages, each Info Search entry is coded as either SE or RL followed by a number.

The Info Exchange component allows users to discuss the topic of accommodating students with disabilities in postsecondary education. Each Info Exchange page contains a green banner at the top of the page. The forums can be accessed through the Info Exchange link on the navigation menu on the left side of each page or through related links from other components of the WPSS.

[Return to top](#)

Survey: Info Pages

Reviewer Code:

Platform Used: (i.e., Windows or Mac)

Browser Used: (e.g., Explorer 5, Netscape 4.7)

How would you rate the degree to which information represents current practice on the following Info Pages:

Disability Rights Laws

Not Current Current Very Current

Campus Policy

Not Current Current Very Current

Legal Implications

Not Current Current Very Current

Cases Index

Not Current Current Very Current

Include comments about how Info Pages represent current practices on accommodating postsecondary students with disabilities in the text box below.

How would you rate the accuracy of information provided on the following Info Pages:

Disability Rights Laws

- Not Accurate Accurate Very Accurate

Legal Implications

- Not Accurate Accurate Very Accurate

Cases Index

- Not Accurate Accurate Very Accurate

Include comments about the accuracy of information contained within the Info Page in the text box below.

How would you rate the completeness of information provided in the following Info Pages:

Disability Rights Laws

- Not Complete Complete Very Complete

Campus Policy

- Not Complete Complete Very Complete

Legal Implications

- Not Complete Complete Very Complete

Cases Index

- Not Complete Complete Very Complete

Include comments about the completeness of information contained within the Info Page in the text box below.

How would you rate the clarity of information provided in the following Info Pages:

Disability Rights Laws

- Not Clear Clear Very Clear

Campus Policy

- Not Clear Clear Very Clear

Legal Implications

- Not Clear Clear Very Clear

Cases Index

- Not Clear Clear Very Clear

Include comments about the clarity of information contained within the Info Page in the text box below.

How would you rate the feasibility of providing accommodations to postsecondary students with disabilities based on information provided in the Info Pages?

- Not Feasible Feasible Very Feasible

Include comments about the feasibility of providing accommodations based on information contained within the Info Page in the text box below.

To what extent would information provided in the Info Pages promote user confidence in provision of accommodations to student with disabilities?

- Not Likely Likely Very Likely

Include comments about how the Info Pages promote confidence in provision of accommodations in the text box below.

[Return to top](#)

Survey: Viewpoints

Reviewer Code:

Platform Used: (i.e., Windows or Mac)

Browser Used: (e.g., Explorer 5, Netscape 4.7)

To what extent do Viewpoints stories represent current practice?

- Not Current Current Very Current

Include comments about how Viewpoints stories represent current practices on accommodating postsecondary students with disabilities in the text box below.

How would you rate the accuracy of information provided in the Viewpoints stories?

- Not Accurate Accurate Very Accurate

Include comments about the accuracy of information contained within the Viewpoints stories in the text box below.

How would you rate the clarity of information provided in the Viewpoints stories?

- Not Clear Clear Very Clear

Include comments about the clarity of information contained within the Viewpoints stories in the text box below.

How would you rate the complexity of information provided in the Viewpoints stories?

- Not Complex Enough Complex Sufficiently Complex

Include comments about the complexity of information contained within the Viewpoints stories in the text box below.

How helpful would the Viewpoints stories be in promoting users to explore their attitudes about accommodating postsecondary students with disabilities?

- Not Helpful Helpful Very Helpful

Include comments about how Viewpoints stories help users explore attitudes in the text box below.

To what extent would the Viewpoints stories promote user confidence in provision of accommodations to students with disabilities?

- Not Likely Likely Very Likely

Include comments about how the Viewpoints stories promote confidence in provision of accommodations in the text box below.

To what extent does media (i.e., images and audio) contained in the Viewpoints stories support user understanding of content?

- Does Not Support Supports Content Strongly Supports

Include comments about how images in the Viewpoints stories support understanding of content in the text box below.

[Return to top](#)

Survey: Info Search

Reviewer Code:

Platform Used: (i.e., Windows or Mac)

Browser Used: (e.g., Explorer 5, Netscape 4.7)

How would you rate the degree to which information about law and policy represents current practice in the following Info Search areas:

Services and Experts

- Not Current Current Very Current

Related Literature

- Not Current Current Very Current

Include comments about how the Info Search area represents current practices on accommodating postsecondary students with disabilities in the text box below.

Services and Experts

- Not Accurate Accurate Very Accurate

Related Literature

- Not Accurate Accurate Very Accurate

Include comments about the accuracy of information contained within the Info Search area in the text box below.

How would you rate the completeness of information about law and policy provided in the following Info Search areas:

Services and Experts

- Not Complete Complete Very Complete

Related Literature

- Not Complete Complete Very Complete

Include comments about the completeness of information contained within the Info Search area in the text box below.

How would you rate the clarity of information about law and policy provided in the following Info Search areas:

Services and Experts

- Not Clear Clear Very Clear

Related Literature

- Not Clear Clear Very Clear

Include comments about the clarity of information contained within the Info Search area in the text box below.

How would you rate the feasibility of providing accommodations to postsecondary students with disabilities based on information about law and policy provided in the Info Search area?

- Not Feasible Feasible Very Feasible

Include comments about the feasibility of providing accommodations based on information contained within the Info Search area in the text box below.

To what extent would information about law and policy provided in the Info Search area promote user confidence in provision of accommodations to student with disabilities?

- Not Likely Likely Very Likely

Include comments about how the Info Search area promotes confidence in provision of accommodations in the text box below.

[Return to top](#)

Survey: Summary

Reviewer Code:

Platform Used: (i.e., Windows or Mac)

Browser Used: (e.g., Explorer 5, Netscape 4.7)

How would you rate the appropriateness of the UK-ED WPSS for the following personnel:

Academic Administrators

- Not Appropriate Appropriate Very Appropriate

Instructional Personnel

- Not Appropriate Appropriate Very Appropriate

Auxiliary Service Administrators

- Not Appropriate Appropriate Very Appropriate

Include comments about the appropriateness of the UK-ED WPSS in the text box below.

How would you rate the likelihood that use of the WPSS by postsecondary personnel would enhance the accommodation of students with disabilities?

- Not Likely Likely Very Likely

Include comments about the likelihood that use of the WPSS by postsecondary personnel would enhance the accommodation of students with disabilities in the text box below.

To what degree does the WPSS represent current views on accommodating postsecondary students with disabilities?

- Not Current Current Very Current

Include comments about the currency of information contained within the WPSS in the text box below.

To what degree does the WPSS accurately represents best practices on accommodating postsecondary students with disabilities?

- Not Accurate Accurate Very Accurate

Include comments about the accuracy of information contained within the WPSS in the text box below.

How would you rate the completeness of the information about law and policy provided in the WPSS?

- Not Complete Complete Very Complete

Include comments about the completeness of information contained within the WPSS in the text box below.

How would you rate the feasibility of providing accommodations to postsecondary students with disabilities based on information provided in the WPSS?

- Not Feasible Feasible Very Feasible

Include comments about the feasibility of providing accommodations based on information contained within the WPSS in the text box below.

To what extent do media (images and audio) contained in the WPSS support user understanding of content?

- Does Not Support Supports Content Strongly Supports

Include comments about how media in the WPSS support understanding of content in the text box below.

Open Response Comments

What do you see as the major strength(s) of the WPSS?

What do you see as the major weakness(es) of the WPSS?

What improvements would you recommend for the WPSS?

Open Comments

Include additional comments about the WPSS in the text box below.

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Appendix E
Heuristic Survey for Individuals with Disabilities

Survey for the Accessible Design Evaluation of the UK-ED WPSS
Section 1: Identifying Violations of Usability Heuristics

Directions:

The purpose of this survey is to gather feedback regarding the UK-ED WPSS to aid in its development. Please review the UK-ED WPSS. For the first part of the survey, you will use this form to identify and code violations of accessible design within the WPSS. For the second half of the survey, you will indicate your answers to the questions by circling your response. All of your responses will be kept confidential and will be used solely for the purpose of evaluating the WPSS.

1. First, explore the WPSS. You might find it helpful to take notes about violations to the 5 accessibility guidelines as you explore the system.
2. For each guideline, list all violations you find within the system in the left column. If enough space is not provided to list all of the violations for a guideline, attach a piece of paper including the guideline, its violations, and their location(s). If you don't find a violation of the guideline, list "No violations found" in the first row of the table under the accessibility guideline on the survey.
3. For each violation listed in the left column, identify the location of the violation in the right column by entering the code at the bottom of each screen (e.g., EP is the code for the Entry Page for the WPSS).
4. Place the first section of this survey in the enclosed envelope and continue to the second portion of the survey.
5. List your code (from the enclosed letter), the platform (i.e., Mac or Windows), and browser (e.g., Internet Explorer 5, Netscape 4.7) at the bottom of the survey form.
6. Please be sure to submit your signed consent form along with the survey. Thank you in advance for your participation.

Locations within the WPSS:

1) Entry Page

The Entry Page serves as the portal to the WPSS. From this page, the user can access all the components of the WPSS, learn about the site and project, obtain tips about interacting with the site, and search the site. In the line Page ID at the bottom of the page, the Entry Page is coded as EP.

2) Info Pages

The Info Pages provide didactic information about topical areas related to accommodating students with disabilities. Each Info page contains a purple banner at the top of the page. Users may select Info Pages for topical areas using the navigation menu included on the left side of each page or through related links from other components of the WPSS. In the line Page ID at the bottom of the Info Pages, each Info Page is coded as IP followed by a number.

3) Viewpoints

The Viewpoints area allows users to explore their attitudes about providing accommodations to postsecondary students with disabilities. Each Viewpoints page contains a blue banner at the top of the page. Viewpoints stories can be accessed through story headlines on the Entry Page or the Viewpoints link on the navigation menu included on the left side of each page. They also may be accessed through related links from other components of the WPSS. In the line Page ID at the bottom of the Viewpoints pages, each Viewpoints page is coded as VP followed by a number.

4) Info Search

The Info Search area contains links to information about services, experts, and literature related to accommodating postsecondary students with disabilities that may be searched by selecting the desired area from the navigation menu included on the left side of each page. Each Info Search page contains a red banner at the top of the page. The Info Search area also may be accessed through related links from other components of the WPSS. In the line Page ID at the bottom of the Info Search pages, each Info Search entry is coded as either SE or RL followed by a number.

5) Info Exchange

The Info Exchange component allows users to discuss the topic of accommodating students with disabilities in postsecondary education. Each Info Exchange page contains a green banner at the top of the page. The forums can be accessed through the Info Exchange link on the navigation menu on the left side of each page or through related links from other components of the WPSS.

Accessible Design Heuristics

1. Text Equivalent Provided for All Images, Audio, and Video

At this site, users should be able to access all information presented in a visual or auditory manner through an alternative method. Text labels and, when necessary, longer descriptive link for images and video should be available. Synchronized transcripts should provided for stand-alone audio files and tracks of video

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

2. Content is Clear without Use of Colors

This site should not convey information through color alone. If color is used to emphasize certain content, a font effect (e.g., strong) or text links will be provided. Foreground and background color combinations should provide enough contrast so that someone having color deficits or printing information can view the site clearly.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

3. Simple and Clear Language

The site should use language that is clear and simple. Abbreviations and acronyms have titles to clarify their meaning in context. Slang and jargon are avoided unless defined. Clear and accurate headings and link descriptions are used. The main idea of the paragraph is stated at the beginning of the paragraph. Pages do not include information that is irrelevant or distracting.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

4. Clear and Consistent Navigation

The site provides a consistent page layout (e.g., navigation bars and content) that allows users to locate navigation mechanisms more easily and also to skip navigation mechanisms more easily to find important content. Links should have concise, but descriptive names. Keyboard alternatives and tab ordering are provided for navigation through the keyboard.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

5. Context and Orientation Information Provided

The site should provide orientation information about accessibility features and the general layout of the site. Content and navigation should be grouped when natural and appropriate. Contextual information about the relationships between links and parts of a page should be provided. Materials should be chunked so pages are short and focused on one topic when possible.

Violation Found	Location(s) of Violation
1)	
2)	
3)	
4)	
5)	
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12)	
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14)	
15)	

Survey for the Accessible Design Evaluation of the UK-ED WPSS
Section 2: Rating Accuracy and Appropriateness of the WPSS

Directions:

The purpose of this survey is to gather feedback regarding the UK-ED WPSS to aid in its development. In the first part of the survey, you identified violations of accessible design within the WPSS. For the second half of the survey, you will indicate your answers to the questions by circling your response. All of your responses will be kept confidential and will be used solely for the purpose of evaluating the WPSS.

- 1) Read each question.
- 2) For each question, circle the response that best indicates your answer. If you are unable to answer a question, do not circle a response; instead, write a comment in the text box under the question.
- 3) Add specific comments in the space under the question.
- 4) Respond to the open response questions and add further comments in the Open Comments section.
- 5) Finally, submit the completed survey along with your signed consent form.

Thank you in advance for your participation.

Second Section: Rating Accuracy and Appropriateness of the WPSS

<p>1) How would you rate the appropriateness of the WPSS for postsecondary personnel?</p> <p>Comments:</p>	<p>1 Not appropriate</p>	<p>2 Appropriate</p>	<p>3 Very appropriate</p>
<p>2) How would you rate the likelihood that use of the WPSS by postsecondary personnel would enhance the accommodation of students with disabilities?</p> <p>Comments:</p>	<p>1 Not likely</p>	<p>2 Likely</p>	<p>3 Very likely</p>
<p>3) To what degree does the WPSS represent current views on accommodating postsecondary students with disabilities?</p> <p>Comments:</p>	<p>1 Not current</p>	<p>2 Current</p>	<p>3 Very current</p>
<p>4) To what degree does the WPSS accurately represents best practices on accommodating postsecondary students with disabilities?</p> <p>Comments:</p>	<p>1 Not accurate</p>	<p>2 Accurate</p>	<p>3 Very accurate</p>
<p>5) How would you rate the feasibility of using the WPSS in the process of accommodating postsecondary students with disabilities?</p> <p>Comments:</p>	<p>1 Not feasible</p>	<p>2 Feasible</p>	<p>3 Very feasible</p>

Open Response Comments

What do you see as the major strength(s) of the WPSS?

What do you see as the major weakness(es) of the WPSS?

What improvements would you recommend for the WPSS?

Open Comments

Additional Comments:

Reviewer Code: _____

Platform Used: (i.e., Windows or Mac) _____

Browser Used: (e.g., Explorer 5, Netscape 4.7) _____

Appendix F
In-Session Questionnaires for One-to-One Users

Questionnaire: Academic Administrators

Read the following scenario.

A student with a learning disability comes to you and complains that he is not being provided requested accommodations (i.e., copies of lecture notes, a note-taker, extended time on test). You contact the faculty member who indicates that he does not believe the student's requests are reasonable. It is now your task to mediate between the student and the faculty member about classroom accommodations.

Use the Web site to answer the following questions. For each question, please indicate the time you begin to answer a question and the time you complete your response.

1. What is UK's policy on providing accommodations?

Time Started:

Time Ended:

2. How would you determine whether a requested accommodation is reasonable?

Time Started:

Time Ended:

3. What court cases and/or federal laws could you use to support your position on provision of accommodations?

Time Started:

Time Ended:

4. What literature might help you and/or the faculty member gain understanding in this situation?

Time Started:

Time Ended:

5. What individuals on campus might be of assistance in this situation?

Time Started:

Time Ended:

6. Could you discuss this situation with other administrators anonymously? If so, where?

Time Started:

Time Ended:

7. How could you help the faculty member understand the student's point of view?

Time Started:

Time Ended:

Reviewer Code:

Platform Used: (i.e., Windows or Mac)

Browser Used: (e.g., Explorer 5, Netscape 4.7)

Now that you have submitted the session questionnaire. Please complete the [post-session survey](#).

Questionnaire: Instructional Personnel

Read the following scenario.

A student with a learning disability comes to you and requests accommodations (i.e., copies of lecture notes, a note-taker, and extended time on test). The student does not offer any proof of a need for accommodation, but states that he received accommodations in high school. It is now your task to discuss provision of classroom accommodations with the student.

Use the Web site to answer the following questions. For each question, please indicate the time you begin to answer a question and the time you complete your response.

1. What is UK's policy on providing accommodations?

Time Started:

Time Ended:

2. How would you determine whether a requested accommodation is reasonable?

Time Started:

Time Ended:

3. What court cases and/or federal laws could you use to support your position on provision of accommodations?

Time Started:

Time Ended:

4. What literature might help you gain understanding in this situation?

Time Started:

Time Ended:

5. What individuals on campus might be of assistance in this situation?

Time Started:

Time Ended:

6. Could you discuss this situation with other instructors anonymously? If so, where?

Time Started:

Time Ended:

7. How could you gain understanding about the student's point of view?

Time Started:

Time Ended:

Reviewer Code:

Platform Used: (i.e., Windows or Mac)

Browser Used: (e.g., Explorer 5, Netscape 4.7)

Now that you have submitted the session questionnaire. Please complete the [post-session survey](#).

Questionnaire: Auxiliary Service Administrator

Read the following scenario.

A student with a physical disability comes to you and complains that a staff person is not accommodating him in a reasonable manner. You contact the staff person who indicates that he does not believe the student's requests are reasonable. It is now your task to mediate between the student and the staff member about provision of accommodations.

Use the Web site to answer the following questions. For each question, please indicate the time you begin to answer a question and the time you complete your response.

1. What is UK's policy on providing accommodations?

Time Started:

Time Ended:

2. How would you determine whether a requested accommodation is reasonable?

Time Started:

Time Ended:

3. What court cases and/or federal laws could you use to support your position on provision of accommodations?

Time Started:

Time Ended:

4. What literature might help you and/or the staff person gain understanding in this situation?

Time Started:

Time Ended:

5. What individuals on campus might be of assistance in this situation?

Time Started:

Time Ended:

6. Could you discuss this situation with other administrators anonymously? If so, where?

Time Started:

Time Ended:

7. How could you help the staff member understand the student's point of view?

Time Started:

Time Ended:

Reviewer Code:

Platform Used: (i.e., Windows or Mac)

Browser Used: (e.g., Explorer 5, Netscape 4.7)

Now that you have submitted the session questionnaire. Please complete the [post-session survey](#).

Appendix G
Post-Session Survey for One-to-One Users

Post-Session Survey: Directions

The purpose of this survey is to gather feedback to aid in further development of this site. Please take a few minutes to complete all sections of the survey. All of your responses will be kept confidential.

1. Read and respond to each survey question.
2. If you are unable to answer a question, write a comment in the text box at the bottom of the page.
3. Add specific comments in the text box at the bottom of the page.
4. Send the survey by clicking on the submit button at the bottom of the page.
5. [Begin the survey.](#)

Thank you in advance for your participation.

Post-Session Survey: Info Pages

The Info Pages provide didactic information about accommodating postsecondary students with disabilities. Each Info Page contains a purple banner at the top of the page. They may be accessed from the top section of the navigation menu included on the left side of each page or through related links in other sections of the site.

Please answer the following question about this component:

1) How easy was it to understand the content contained on the Info Pages?

- Difficult Fairly Easy Very Easy

2) Were the Info Pages attractive to look at?

- No Somewhat Yes

3) Did the content on the Info Pages hold your interest?

- No Sometimes Yes

4) To what extent did the navigation features (navigation menus, hyperlinks) help you navigate within the pages?

- Not At All Somewhat Helped a Lot

5) How clear was the organization of the content contained on the Info Pages?

- Unclear Somewhat Clear Very Clear

6) How useful would the content contained on the Info Pages be to your professional activities?

- Not Useful Somewhat Useful Very Useful

Comments about the Info Pages

Reviewer Code:

[Continue to the next section of the survey](#)

Post-Session Survey: Info Search

The Info Search area contains links to information about services, experts, and literature related to accommodating postsecondary students with disabilities. Each Info Search page contains a red banner at the top of the page. The Info Search area may be accessed using the second section of the navigation menu included on the left side of each page or through related links in other sections of the site.

Please answer the following question about this component:

1) How easy was it to search for information using the keyword search feature?

- Difficult Fairly Easy Very Easy

2) To what extent was the information you retrieved relevant to your search?

- Not Relevant Somewhat Relevant Very Relevant

3) How useful was the information you retrieved using the search feature?

- Not Useful Somewhat Useful Very Useful

4) What was your reaction to the format of the search page?

- Didn't Like It It Was Okay Liked It a Lot

5) What was your reaction to the topical listings included on the search page?

- Not Useful Somewhat Useful Very Useful

6) What was your reaction to the format in which the retrieved information was presented?

- Didn't Like It It Was Okay Liked It a Lot

7) Did the navigation features (navigation menus, hyperlinks) help you navigate within the pages?

- No Somewhat Yes

Comments about the Info Search

Reviewer Code:

[Continue to the next section of the survey](#)

Post-Session Survey: Viewpoints

The Viewpoints area allows users to explore perspectives about providing accommodations to postsecondary students with disabilities. Each Viewpoints page contains a blue banner at the top of the page. Viewpoints stories can be accessed through story headlines on the Entry Page or the Viewpoints link on the navigation menu included on the left side of each page. They also may be accessed through related links in other sections of the site.

Please answer the following question about this component:

1) Did the stories hold your interest?

- No Somewhat Yes

2) Did the media (audio, images) enhance the content?

- No Sometimes Yes

3) What was your reaction to the format of the story pages?

- Didn't Like It It Was Okay Liked It a Lot

4) What was your reaction to story responses opening a new window?

- Not Useful It Was Acceptable Very Useful

5) To what extent did the navigation features (navigation menus, hyperlinks) help you navigate within the stories?

- Not Helpful Somewhat Helpful Helped a Lot

6) Did the stories cause you explore personal attitudes about providing accommodations?

- No Sometimes Yes

Comments about the Viewpoints

Reviewer Code:

Submit Form

Clear Form

[Continue to the last section of the survey](#)

Post-Session Survey: Summary

Please answer the following question about the site:

1) What do you see as the major strength(s) of the site?

2) What do you see as the major weakness(es) of the site?

3) What changes would you recommend to improve the site?

Additional Comments:

Reviewer Code:

Appendix H
Pathway Chart for One-to-One and Consumer Analysis Phases

Question	Path Followed to Obtain Response
1	
2	
3	
4	
5	
6	
7	

Appendix I

Bug Report Form for One-to-One and Consumer Analysis Phases

Appendix J
In-Session Questionnaires and Post-Session Survey
for Consumer Analysis and Field Trial Phases

In-Session Questionnaire: Academic Administrator

Reviewer Code: _____

Platform: (i.e., Windows or Mac): _____

Browser: (e.g., Explorer 5, Netscape 4.7): _____

Scenario: A student with a learning disability comes to you and complains that he is not being provided requested accommodations (i.e., copies of lecture notes, a note-taker, extended time on test). You contact the faculty member who indicates that he does not believe the student's requests are reasonable. It is now your task to mediate between the student and the faculty member about classroom accommodations.

Directions: Explain how you would use the Engaging Differences Web site to answer the following questions. For each question, please indicate the time you begin to look for an answer and the time you complete your response.

1. What is UK's policy on providing accommodations?

Time Started: _____

Time Ended: _____

Response:

2. How would you determine whether a requested accommodation is reasonable?

Time Started: _____

Time Ended: _____

Response:

3. What court cases and/or federal laws could you use to support your position on provision of accommodations?

Time Started: _____

Time Ended: _____

Response:

4. What literature might help you and/or the faculty member gain understanding in this situation?

Time Started: _____

Time Ended: _____

Response:

5. What individuals on campus might be of assistance in this situation?

Time Started: _____

Time Ended: _____

Response:

6. Could you discuss this situation with other administrators anonymously? If so, where?

Time Started: _____

Time Ended: _____

Response:

7. How could you help the faculty member understand the student's point of view?

Time Started: _____
Response:

Time Ended: _____

Thank you for completing the in-session questionnaire. Please complete the post-session survey.

In-Session Questionnaire: Instructional Personnel

Reviewer Code: _____

Platform: (i.e., Windows or Mac): _____

Browser: (e.g., Explorer 5, Netscape 4.7): _____

Scenario: A student with a learning disability comes to you and requests accommodations (i.e., copies of lecture notes, a note-taker, and extended time on test). The student does not offer any proof of a need for accommodation, but states that he received accommodations in high school. It is now your task to discuss provision of classroom accommodations with the student.

Directions: Explain how you would use the Engaging Differences Web site to answer the following questions. For each question, please indicate the time you begin to look for an answer and the time you complete your response.

1. What is UK's policy on providing accommodations?

Time Started: _____

Time Ended: _____

Response:

2. How would you determine whether a requested accommodation is reasonable?

Time Started: _____

Time Ended: _____

Response:

3. What court cases and/or federal laws could you use to support your position on provision of accommodations?

Time Started: _____

Time Ended: _____

Response:

4. What literature might help you gain understanding in this situation?

Time Started: _____

Time Ended: _____

Response:

5. What individuals on campus might be of assistance in this situation?

Time Started: _____

Time Ended: _____

Response:

6. Could you discuss this situation with other instructors anonymously? If so, where?

Time Started: _____

Time Ended: _____

Response:

7. How could you gain understanding about the student's point of view?

Time Started: _____

Time Ended: _____

Response:

Thank you for completing the in-session questionnaire. Please complete the post-session survey.

In-Session Questionnaire: Auxiliary Service Administrator

Reviewer Code: _____

Platform: (i.e., Windows or Mac): _____

Browser: (e.g., Explorer 5, Netscape 4.7): _____

Scenario: A student with a physical disability comes to you and complains that a staff person is not accommodating him in a reasonable manner. You contact the staff person who indicates that he does not believe the student's requests are reasonable. It is now your task to mediate between the student and the staff member about provision of accommodations.

Directions: Explain how you would use the Engaging Differences Web site to answer the following questions. For each question, please indicate the time you begin to look for an answer and the time you complete your response.

1. What is UK's policy on providing accommodations?

Time Started: _____

Time Ended: _____

Response:

2. How would you determine whether a requested accommodation is reasonable?

Time Started: _____

Time Ended: _____

Response:

3. What court cases and/or federal laws could you use to support your position on provision of accommodations?

Time Started: _____

Time Ended: _____

Response:

4. What literature might help you and/or the staff person gain understanding in this situation?

Time Started: _____

Time Ended: _____

Response:

5. What individuals on campus might be of assistance in this situation?

Time Started: _____

Time Ended: _____

Response:

6. Could you discuss this situation with other administrators anonymously? If so, where?

Time Started: _____

Time Ended: _____

Response:

7. How could you help the staff member understand the student's point of view?

Time Started: _____

Time Ended: _____

Response:

Thank you for completing the in-session questionnaire. Please complete the post-session survey.

Post-Session Survey

Reviewer Code: _____

Directions: The purpose of this survey is to gather feedback to aid in further development of this site. Please take a few minutes to complete all sections of the survey. All of your responses will be kept confidential.

Read and respond to each survey question. If you are unable to answer a question, write a comment at the end of the survey. Add specific comments at the end of the survey.

Info Pages (Disability Rights Laws, Campus Policy, Legal Implications)

The Info Pages provide didactic information about accommodating postsecondary students with disabilities. Each Info Page contains a purple banner at the top of the page. They may be accessed from the top section of the navigation menu included on the left side of each page or through related links in other sections of the site.

1. How easy was it to understand the content contained on the Info Pages?

Difficult Fairly Easy Very Easy

2. Were the Info Pages attractive to look at?

No Somewhat Yes

3. Did the content on the Info Pages hold your interest?

No Sometimes Yes

4. To what extent did the navigation features (navigation menus, hyperlinks) help you navigate within the pages?

Not At All Somewhat Helped a Lot

5. How clear was the organization of the content contained on the Info Pages?

Unclear Somewhat Clear Very Clear

6. How useful would the content contained on the Info Pages be to your professional activities?

Not Useful

Somewhat Useful

Very Useful

7. What do you see as the strengths of the **Info Pages** section?

8. What changes would you recommend for the **Info Pages** section?

Info Search (Services and Experts, Related Literature, Relevant Cases)

The Info Search area contains links to information about services, experts, literature, and cases related to accommodating postsecondary students with disabilities. Each Info Search page contains a red banner at the top of the page. The Info Search area may be accessed using the second section of the navigation menu included on the left side of each page or through related links in other sections of the site.

1. How easy was it to search for information using the keyword search feature?

Difficult

Fairly Easy

Very Easy

2. To what extent was the information you retrieved relevant to your search?

Not Relevant

Somewhat Relevant

Very Relevant

3. How useful was the information you retrieved using the search feature?

Not Useful

Somewhat Useful

Very Useful

4. What was your reaction to the format of the search page?

Didn't Like It

It Was Okay

Liked It a Lot

5. What was your reaction to the topical listings included on the search page?

Not Useful

Somewhat Useful

Very Useful

6. What was your reaction to the format in which the retrieved information (individual entries) was presented?

Didn't Like It

It Was Okay

Liked It a Lot

7. Did the navigation features (navigation menus, hyperlinks) help you navigate within the pages?

No

Somewhat

Yes

8. What do you see as the strengths of the **Info Search** section?

9. What changes would you recommend for the **Info Search** section?

Viewpoints (Room for Improvement, Similar Difficulties, Drawing the Line, No Manual, Labeling the Problem, Part of the Mix, Balancing Acts)

The Viewpoints area allows users to explore perspectives about providing accommodations to postsecondary students with disabilities. Each Viewpoints page contains a blue banner at the top of the page. Viewpoints stories can be accessed through story headlines on the Entry Page or the Viewpoints link on the navigation menu included on the left side of each page. They also may be accessed through related links in other sections of the site.

1. Did the stories hold your interest?

No

Somewhat

Yes

2. Did the media (audio, images) enhance the content?

No Sometimes Yes

3. What was your reaction to the format of the story pages?

Didn't Like It It Was Okay Liked It a Lot

4. What was your reaction to story responses opening a new window?

Not Useful It Was Acceptable Very Useful

5. To what extent did the navigation features (navigation menus, hyperlinks) help you navigate within the stories?

Not Helpful Somewhat Helpful Helped a Lot

6. Did the stories cause you explore personal attitudes about providing accommodations?

No Sometimes Yes

7. What do you see as the strengths of the **Viewpoints** section?

8. What changes would you recommend for the **Viewpoints** section?

Summary

1. What do you see as the major strength(s) of the site?

2. What do you see as the major weakness(es) of the site?

3. What changes would you recommend to improve the site?

Additional Comments:

Thank you for participating in this research!

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