

***Comprehensive Review and Analysis of the
Literacy Information and Communication System
(LINCS)***

***Final Report
Volume I***

*Submitted to:
National Institute for Literacy
1775 I Street, NW, Suite 730
Washington, DC 20006*

September 26, 2005



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*Submitted to:
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Executive Summary

Overview of LINCS

The Literacy Information and Communications System (LINCS) is a project of the National Institute For Literacy (NIFL). NIFL developed LINCS in response to legislation requiring that NIFL establish a national electronic database of resources for the adult education/literacy community, disseminate the resources collected, and provide assistance to other government entities and the adult literacy field for the improvement of literacy policy and programs.

The resulting LINCS project began as an electronic database and website. Over time the electronic infrastructure grew to include regional websites and websites of state and local organization partners, all connected by the Internet to the LINCS databases. These databases store and provide access to a full range of information that might be of interest to the field, for example, calendars of upcoming events, materials useful for planning and teaching instructional programs, statistics and grant information, literacy news, and organizational contact information.

NIFL also funds a parallel network of staff, contractors, and regional grantees, now called Regional Technology Centers (RTCs), to manage the national and regional websites, and to provide technical assistance to partner organizations and programs in the field. NIFL funds the RTCs to promote the use of LINCS and to assist state literacy agencies in accessing its resources.

LINCS also includes several other important components: the Special Collections (SCs) and the Discussion Lists (DLs). Developed for the purpose of disseminating high quality, specialized information to the field, the Special Collections are sets of vetted, topic-based resources and materials of interest to different groups, for example, corrections literacy programs or health-related literacy programs, within the adult education/literacy field. Like the RTCs, users access the SCs through the LINCS website and the maintenance of the collections is funded by NIFL grants. The DLs are electronic threaded discussions on a variety of topic areas located on the LINCS website. They were established as a way to use LINCS as a means of communications between various partners, agencies, providers, researchers, and practitioners in the literacy field.

In addition to building and maintaining an electronic infrastructure and the personnel to operate it, NIFL has funded the development of product for dissemination through LINCS. For example, RTCs have collaborated with local organizations on pilot projects exploring the use of LINCS and technology in the classroom. NIFL funded the National Center for the Study of Learning and Literacy (NCSALL) to develop a Web-based tool based on NCSALL's own research.

The Comprehensive Review and Analysis

The Comprehensive Review and Analysis of LINCS is NIFL's first effort to conduct a thorough overview of its LINCS project. The purpose of the review is to examine the use, quality, value, and effectiveness of LINCS resources, the infrastructure created to disseminate these resources, and the activities funded by LINCS that support implementation and use of LINCS nationwide.

NIFL contracted with RMC Research Corporation to conduct the review, which began in November 2003, and ends with this report. The review included studies of:

1. the LINCS website, including design and usability; cost-effectiveness; and use and value in the adult education/literacy field;
2. the LINCS Discussion Lists, including content, structure and operations; cost-effectiveness; and use and value in the field;
3. the Regional Technology Centers, including purpose, structure and organization; activities and services; cost-effectiveness; and use and value in the field;
4. the Special Collections, including structure and procedures; content; cost-effectiveness; and use and value to the field; and
5. the Assessment Strategies and Reading Profiles website, including design and usability; quality and scientific credibility of its content; and use and value in the field.

RMC collected and reported data in stages to answer each study's research questions. During 2003-2004, RMC collected initial data that resulted in preliminary reports for the LINCS Discussion Lists, Regional Technology Center, and Special Collections studies in 2004. For these initial collections, RMC conducted document and website reviews, content analysis, and interviews with various sets of stakeholders.

During the latter half of 2004 and into 2005, RMC completed its data collection for the final report. These activities included analyses of documents and telephone interviews with stakeholders for a cost-effectiveness analysis of LINCS; a LINCS website usability test and expert review; telephone interviews with all Discussion List moderators; and expert reviews of the Assessment Strategies and Reading Profiles (ASRP) website by adult reading researchers and practitioners. RMC also conducted one mail and three online surveys with a total of 954 respondents in 2005.

Below is a brief summary of RMC's Final Report findings, conclusions, and recommendations.

Findings

The following sections summarize major findings cutting across the five studies in the review.

Use

Who Uses LINCS?

- Users of the LINCS website are primarily **experienced professionals in the adult education/literacy field**, i.e., state and local program administrators and instructors. Two-thirds (68%) are affiliated with Adult Basic Education programs.

Why Do People Use LINCS?

- Users visit the LINCS website **to find materials and resources that will help them plan or manage their literacy programs, or improve their classroom instruction and assessment.** 81% of LINCS users visit the Special Collections, second only to visits to the more general database of materials and resources.
- People go to LINCS not only for its website but **to access the technology training and technical assistance services that its network of Regional Technology Center staff and contractors can provide.**

Quality

What is the Quality of the LINCS Infrastructure?

- The LINCS electronic infrastructure's has two major usability problems that lead to significant failures and hinder users from finding information: **the site is more complicated than it needs to be and the search tool is problematic.**

What is the Quality of LINCS' Organization and Operations?

- Management and implementation of the LINCS project has been **generally satisfactory.**
- Communications within this organizational structure have, in the past, been frequent and substantive, but both the **quality and frequency of communications have declined.**
- NIFL **lacks a strong, ongoing monitoring system** of the LINCS project, its grantee programs, outcomes, and costs; and **has not had an external impact evaluation.**

What is the Quality of the Content that LINCS Provides?

- **Users report high satisfaction with the content** of the LINCS website. Most users say that resources and information are of high quality (87%) and are comprehensive (86%).
- However, there is **considerable variability in the rigor applied to the materials review process** used to ensure quality control over the content in the LINCS collections, with variation in quality of the content the likely result.
- The content of the Special Collections, those materials vetted using the highest standards, **emphasizes materials unlikely to be research-based.**
- **Discussion List moderators are rated as "effective" or "very effective" in managing content** in their lists by two-thirds of their subscribers. At the same time, both they and the moderators report **dissatisfaction with the lack of clear guidance about definitions** of inappropriate participation or content.

- Three-quarters (75%) of **DL subscribers** are “satisfied” or “very satisfied” with the **type of content** available in the Discussion Lists, but only **49% report satisfaction with its reliability**.
- State and local users of LINCS training and technical assistance services say that **RTC personnel and their contractors are knowledgeable and helpful**.
- The **Assessment Strategies and Reading Profiles website** appears to be based on solid research, but **too little technical information is presented** on the website to be sure.

Value

How Does LINCS Contribute to Professional Knowledge and Skills?

- Most (91%) of LINCS users said that the materials and resources on LINCS had contributed to their professional skills and knowledge, particularly **in program planning and instruction**.
- Expert reviewers said the **Assessment Strategies and Reading Profiles website is a useful tool** for instruction and staff development and could be valuable to the adult education/literacy field.

How Does LINCS Contribute to the Technological Capacity of the Field?

- Only a small (20%) percentage of people and programs access the technical support services provided by LINCS but they perceive these services as important contributions **to professional skills and knowledge**.

How Does LINCS Contribute to Communication Within the Field?

- Although subscribed to by only a small proportion (12%) of visitors to LINCS, the **Discussion Lists are reported to be a primary means of communication among professionals in the field**, particularly for learning the latest developments.
- Through the repeated person-to-person contact that occurs during technical assistance and training services, the RTCs have become **a source of communication and relationship building within the field**.

Effectiveness

Has LINCS Achieved its Project Objectives?

- The LINCS network has grown to include a broad range of national, state, and local partners, and **brought increased capacity for technology to the field** in many programs previously lacking it.

- LINCS has **built a successful and extensive network of linked websites**, unique in the field of adult education/literacy.
- **Knowledge and use of the LINCS websites, infrastructure, resources, and services have been promoted** throughout state and local adult education/literacy communities.
- LINCS training and technical assistance has **assisted the integration of new resources and new technology into classrooms** and staff development.
- Through the activities of LINCS staff, SC grantees, and to a lesser extent, the RTCs, **new literacy information, e.g., the Assessment Strategies and Reading Profiles, has been made available** to the adult education/literacy community through the website.

Is LINCS Cost Effective?

- Using a combination of limited internal staff resources, contractor support, and grantee involvement, **NIFL has effectively maintained a variety of Web-based information dissemination.**
- Costs to operate the LINCS Discussion Lists are essentially zero. RTCs and SCs benefit from contributions of in-kind labor, goods, and services. As a result, **LINCS services are more cost-effective than comparable services provided by for-profit firms.**

Conclusions and Recommendations

LINCS has achieved major accomplishments in its more than ten years of service to the adult education/literacy field.

- LINCS has become a primary information source for the literacy field, providing first-ever access to a centralized, comprehensive, Internet-based database of adult education/literacy materials.
- With LINCS, NIFL created an infrastructure capacity for dissemination of tangible materials that contribute to every adult education/literacy professional's own database of adult education teaching and learning tools and skills.
- The LINCS Discussion Lists have created a network of community-based adult literacy professionals who feel connected by virtue of sharing information about their field.

These and other activities of LINCS described are examples of what economists refer to as “a public good.” In other words, by funding these projects, NIFL is providing the means and resources to meet the needs of a target population for which the free market does not provide

enough profit incentive. Without NIFL funding, it is reasonable to conclude that a comparable system would not be provided elsewhere.

However, vision and direction for LINCS have evolved and are still evolving. The organization's goals and intentions have become unfocused and broad. Emphasis has been on process and technology, not outcomes. Program monitoring has not been systematic; there has been no formal evaluation. Consequently, the value of LINCS is difficult to assess. The Special Collections program needs specificity in purpose, goals, and standards; and the LINCS website architecture is not conducive to successful navigation or searches.

NIFL needs to resolve these issues and move LINCS forward. However, RMC believes that resolution will be facilitated by first structuring a long-range planning effort. This effort should address the organization and management structure of LINCS, make key decisions on the information to be collected and disseminated, confirm the most appropriate dissemination system, and resolve the purpose and organization of technical assistance. Within each of these areas, RMC makes the following specific recommendations:

- **Organization and Management Structure.** RMC recommends that NIFL rethink the organizational structure of LINCS to better meet its legislative mandate. We recommend that NIFL separate the policy-setting responsibility from the management and implementation of the LINCS system.
- **Content.** According to users, the major value of LINCS to the field is its database of content, particularly instructional materials and resources. A priority of LINCS should be to improve both its quality and quantity. We encourage the inclusion of more high quality materials, particularly scientific or evidence-based materials, for example, through collaborative programs between LINCS and other programs within NIFL and its federal partners. At the same time, we suggest narrowing the range of information available to those instructional resources of most value to NIFL's key constituents.
- **Delivery System.** Because LINCS materials and resources are clearly what users want, LINCS should continue to ensure open and easy access to all online materials. LINCS should implement the improvements identified in this report and detailed in the usability study intended to make the system easily searchable and materials clearly labeled and described. Further, LINCS should become proactive in its dissemination of quality materials using the latest technologies, which may not necessarily be the most expensive.
- **Technical Assistance.** The RTC grant program as it currently exists has served its purpose well but RMC believes that LINCS no longer needs training and technical assistance at the local level. We encourage LINCS to take advantage of its cadre of LINCS-committed people and organizations, perhaps as an advisory group to LINCS or its contractor(s), to help LINCS continue to bring technological innovation to the field. Alternatively, look to a "next generation" of technical assistance providers who can use local and regional support resources to help educators become better consumers of the materials available through LINCS.

I. Introduction

In October 2003, the National Institute for Literacy (NIFL) contracted with RMC Research Corporation to conduct a Comprehensive Review and Analysis of the Literacy Information and Communications System (LINCS), a national dissemination and communication system for the field of adult education and family literacy (www.NIFL.gov/LINCS). The objective of this review is to examine the content, value, quality, and utility of the LINCS resources, the LINCS infrastructure created to disseminate these resources, and the activities funded by LINCS that support implementation and use of LINCS nationwide.

The scope of the review encompasses:

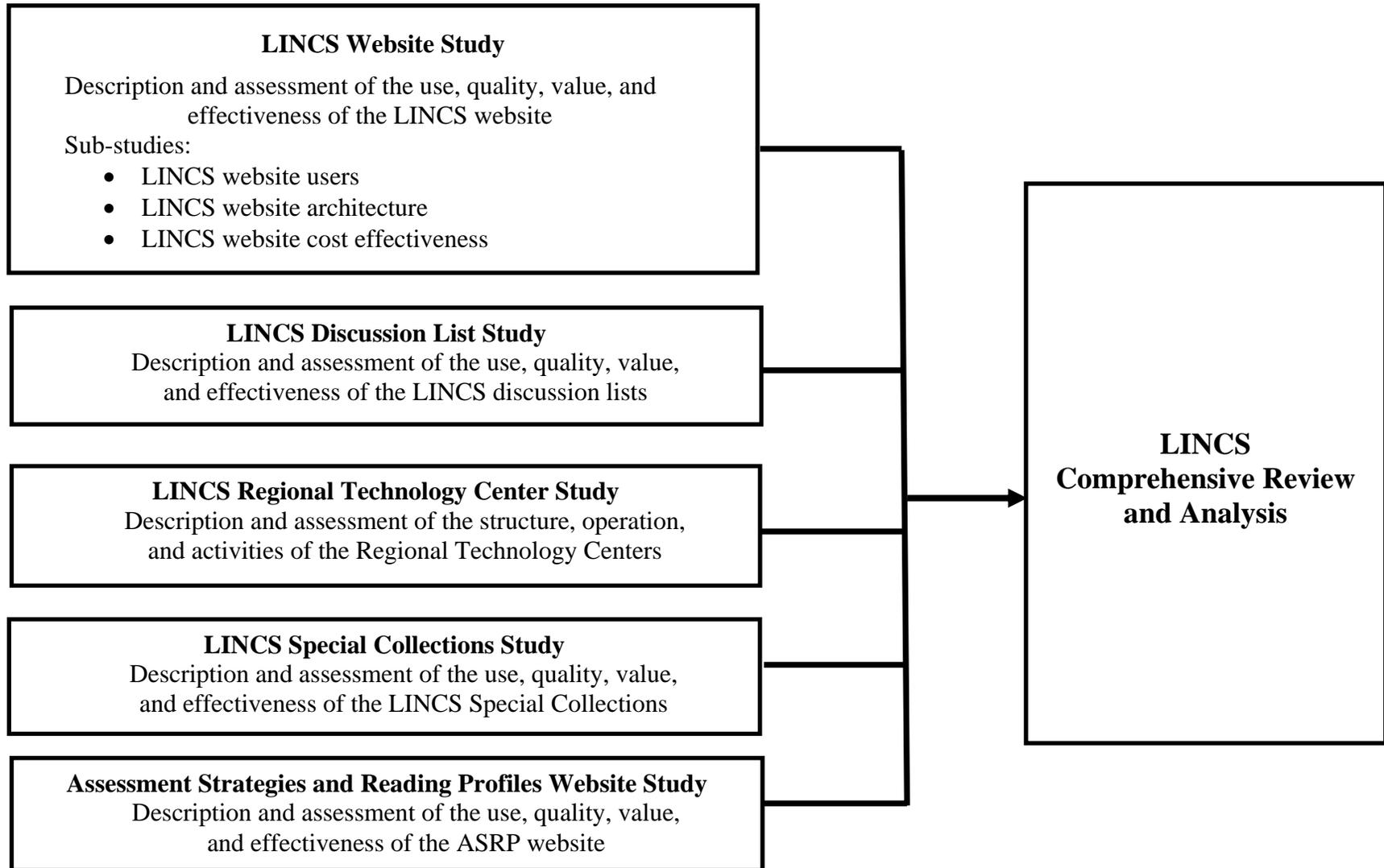
- the LINCS website which links national, regional, state, and local websites that provide direct access to adult education/literacy materials, grants, and other databases managed by LINCS;
- the collection of 13 active and two archived public online subscription-based e-mail discussion lists located on the LINCS website;
- the LINCS Regional Technology Center grantees that promote LINCS to the public; develop and manage the regional and state-level website infrastructure; contribute and manage resources in the LINCS databases, and provide technical assistance and training at the state and local level in the use of LINCS for adult education and literacy practitioners;
- the Special Collections database of adult education/literacy resources accessed through the LINCS website and organized by twelve specific content areas; and
- an adult reading assessment tool, the Assessment Strategies and Reading Profiles website, developed especially for LINCS.

The review is organized around these components of LINCS as five descriptive studies (see Exhibit 1). Its purpose is to assess use, quality, value, and effectiveness of each component, and draw conclusions about these aspects for LINCS overall. The five studies examine

1. the LINCS website, including design and usability; cost-effectiveness; and use and value in the adult education/literacy field;
2. the LINCS Discussion Lists, including content, structure and operations; cost effectiveness; and use and value in the field;
3. the Regional Technology Centers, including purpose, structure and organization; activities and services; cost and effectiveness; and use and value in the field;
4. the Special Collections, including structure and procedures; content; cost-effectiveness; and use and value to the field; and
5. the Assessment Strategies and Reading Profiles website, including design and usability; quality and scientific credibility of its content; and use and value in the field.

Exhibit 1. Comprehensive Review and Analysis of LINCS

Goals: To describe and assess LINCS implementation: structure, operation, and activities of LINCS
To describe/assess LINCS outcomes: use, quality, value, and effectiveness of LINCS products and services



Overview of Design and Methodology

The Comprehensive Review is a descriptive and analytical study, its purpose being to collect information that will describe the LINCS system including several of its components and provide a basis for drawing conclusions about quality, effectiveness, value, and fidelity to the goals of LINCS and mission of NIFL. The design of the review supports this purpose, using an approach that relies on collecting both quantitative and qualitative data from multiple perspectives and sources that can describe and assess LINCS.

Data sources were people who manage or work for LINCS; LINCS users and non-users outside the system; LINCS documents; and the system of LINCS national, regional, and local websites. The sources at LINCS included NIFL Advisory Board members, NIFL administrative staff, and LINCS grantees, their partners, and consultants. These people, knowledgeable about LINCS, provided information about how the LINCS project is structured and operates; what its goals, objectives, activities, and outcomes are; and its strengths and weaknesses. Information from LINCS users provides perspectives on the value, use, and usability of LINCS, particularly for the adult education/literacy field. Other people in the adult education/literacy field who do not use or know about LINCS were included in the study for a comparison to determine the extent of LINCS' use in the field and the circumstances in which it is used or not used. These sources of information are supplemented by information obtained directly from project documents and websites.

Data were collected using the methods most appropriate for obtaining the information needed to answer the research questions of each study. People who manage or work for LINCS were interviewed; LINCS users and non-users were surveyed; documents and websites were content analyzed; the website was tested for usability; and the Assessment Strategies and Reading Profiles website was reviewed by experts in the adult education/literacy field. All data sources were triangulated to identify the data that was the most reliable and valid that could serve as the basis for answering the review's research questions.

The data analysis strategy was multi-stepped: first analyzing data from each individual data source (e.g., one set of interviews or one survey), then analyzing data across similar sources (all interviews or all surveys), and then analyzing by research question and topic within each question across all data sources. In this way, evaluators were able to identify the variability, range, and patterns in the responses using descriptive statistics, qualitative categorization, and quantitative assessment.

Review and Analysis Activities

RMC collected and reported data in stages to answer each study's research questions. Preliminary data collection was carried out in 2003-2004, with additional data collection and analyses in 2005.

RMC conducted an initial study of the LINCS Discussion Lists through interviews and content analysis of a sample of discussion lists. The results were reported to NIFL in an *Interim Report: Review of LINCS Discussion Lists* in December 2003. A *Regional LINCS Grantee Summary Report* summarizing quarterly reports of Regional Technology Center grantees was also submitted to NIFL in December 2003. Initial reviews of the Regional Technology Centers and Special Collections were completed in June 2004 with an *Interim Report: Review of LINCS Regional Technology Center Grant Program* and *Interim Report: Review of LINCS Special Collections*. Data collections for all of these studies were conducted through document and website review, content analysis, and interviews with various sets of stakeholders.

Additional data collection and analysis activities occurred in the latter half of 2004 and into 2005. These included an analysis of documents and telephone interviews with stakeholders for a cost effectiveness analysis of LINCS; a LINCS website usability test and expert review; telephone interviews with all Discussion List moderators; and expert reviews of the Assessment Strategies and Reading Profiles (ASRP) website by adult reading researchers and practitioners. RMC also conducted four surveys with a total of 954 respondents in 2005:

- a mail survey of 177 adult education/literacy practitioners in adult education programs;
- an online survey of 359 adult education/literacy professionals;
- an online survey of 275 LINCS website general users; and
- an online survey of 143 LINCS discussion list subscribers.

For details of each of these activities, see Appendix A, Technical Information on Methods.

This Report

The following final report on this project is a summary of the findings, conclusions, and recommendations from all of the work by RMC and its sub-contractors on the Comprehensive Review and Analysis of LINCS during the past 18 months. The report is organized around the five studies of the LINCS components included in the Review, each with a chapter briefly describing the research questions and methods used for that study, followed by a summary of the findings and conclusions and recommendations specific to that component of LINCS.

Much of the evidence for the five studies has already been documented in detail in the interim reports previously submitted to NIFL. Rather than repeat that evidence here, we chose to limit the information in this report to 1) summaries of findings, conclusions and recommendations from the interim reports; and 2) previously unreported evidence, findings, conclusions, and recommendations. We believe that this approach maximizes the readability of the report while ensuring that the most important information produced by the Review is included. For the evidence in support of findings reported in the earlier reports, we refer the reader to the specific locations within those reports referenced in the notes included at the end of each chapter of this report. New evidence and/or reports not yet submitted to NIFL are found in an appendix for each chapter and referenced throughout the text or in notes at the end of each chapter.

In the last chapter of this report, we look across all five studies for the major themes and important conclusions to be drawn about LINCS overall. This chapter also includes RMC's recommendations to help NIFL in its planning for LINCS.

II. LINCS Website Study

Introduction and Research Questions

NIFL asked RMC to investigate the following aspects of the LINCS website: The quality of the structure and design, the visual appeal, user friendliness, and usability, who uses it, how often, and why, perceived content quality, perceived value, overall satisfaction, and cost effectiveness.

To do this, RMC developed the following study questions:

1. How does the website structure and design enhance visual appeal, user friendliness, and usability?
2. Who uses the LINCS website?
3. How often do users visit the LINCS website?
4. What are users looking for, and are they successful?
5. How much does the LINCS website contribute to users' professional life?
6. What is the overall satisfaction of users, and what design and content issues are important to them?
7. What is the cost effectiveness of the operation of the LINCS website and its associated databases?

Methodology

RMC used multiple sources of data and methodologies to collect and analyze data to answer these questions: an expert review and usability testing of the website, surveys of website users and non-users, stakeholder interviews, and a cost analysis of the operations of the website and related cost components.

Expert Review of the LINCS Website

RMC Research contracted with Design Perspectives, Inc. to conduct an expert review and usability study of the National Institute for Literacy (NIFL) Literacy Information and Communication System (LINCS) website and the LINCS regional websites. This included an examination of the user-interface-designed website by an experienced human factors engineer and usability specialist who applied known usability heuristics, human factors engineering, web interaction design principles, and client-determined assumptions about the system users and the tasks they may perform. The results of this study are based on extensive experience with usability testing, familiarity with the literature on usability, established usability heuristics, and the context (user characteristics, tasks, usage environment, and business/usability goals). The expert review of the LINCS website was accomplished by systematically performing a set of representative tasks that most site users would reasonably attempt. It considered navigation, visual design, functionality, clarity of language, consistency, and error prevention and correction as well as the efficiency of design and ease of information retrieval. The review focused on the LINCS Home Page and other web pages and features linked to the website. Complete details of this review can be found in the full report by Design Perspectives, Inc. called *LINCS Usability Evaluation: An Expert Review*, submitted to NIFL in February, 2005.

Usability Testing of the LINCS Website

Design Perspectives also conducted a usability study of the LINCS website review in which RMC selected nine individuals from the adult education community to participate. All were adult education administrators and/or teachers; they had varying levels of computer expertise, experience with online discussion forums, and familiarity with the LINCS website itself. Each participant was asked to complete specific tasks to assess website usability issues including ease of browsing navigation, search capabilities, and graphic design that communicates to users how the site works. Specially-designed software tracked and recorded participants' responses to assigned tasks within a set of scenarios. Participants were asked to express aloud their thought processes, logic, and opinions during the session while completing the assignments; these were recorded on videotape. Researchers then used all data sources to record the success/failure patterns and to measure user errors, elapsed time, and understanding of the website. Complete details of this review can be found in the full report by Design Perspectives, Inc. called *LINCS Usability Study*, submitted to NIFL in February, 2005.

Surveys of LINCS Website Users and Non-users

RMC administered four surveys to users and non-users of the LINCS website. In one survey visitors to the LINCS website were randomly invited to link to an online questionnaire. A

second survey solicited volunteer respondents from adult education/literacy professional membership organizations by e-mail to complete the same online questionnaire. In a third survey RMC e-mailed subscribers to the LINCS Discussion Lists, inviting them to participate in a similar online survey. To obtain responses from the part of the adult education/literacy field that may not use computers frequently, we also mailed the questionnaire to randomly selected adult education programs.

Much of the information collected in the surveys was asked the same way in all four questionnaires to obtain the largest sample of responses. Other questions were specific to the group surveyed. The purpose of all the surveys was to obtain information on users and non-users of the website, how they use LINCS, and their perceptions of its quality and value. For more information about these surveys and their implementation, please see Appendix A, Technical Information on Methods

Interviews with LINCS/NIFL Stakeholders

RMC also conducted telephone interviews with LINCS and NIFL staff, board members, and LINCS grantees. These interviews collected information about the purpose, structure, and operation of the website, its relationship to the goals of LINCS, and the history of its design and implementation. For more information about these interviews, please refer to Appendix A, Technical Information on Methods.

Cost Analysis of LINCS Website

RMC Research contracted with KPMG, LLP to conduct a cost or financial analysis of the LINCS website and its operation. KPMG collected and reviewed the financial data on LINCS and conducted functional analysis interviews with personnel from each entity that provided services to operate and maintain LINCS. These entities included NIFL; Titan Corporation, a third party contractor that provides technology services to NIFL; and the five Regional Technology Center grantees¹. The financial data examined were the available budgets via Federal Form 524, budget summaries, and information about actual funds received by LINCS grantees and affiliates, including the National Center for Literacy (NIFL), the five Regional Technology Centers (RTCs), twelve Content Development Partners or Special Collections (SCs). Details of the cost analysis can be found in KPMG's full report, *LINCS Cost Analysis*, located in Appendix B.

Findings

- 1. How does the website structure and design enhance visual appeal, user friendliness, and usability?**
 - **People were most likely to locate the LINCS website by using an Internet search engine or by linking to it from other websites on the Internet.** People who know how to find the LINCS website get to it in different ways. According to our user survey, slightly more than one-third (37%) found it through a link on another website, one-third (33%) by typing or choosing the website address in a browser, and a little less than one-third (30%) by using Google or another search engine. For the one-third that used the LINCS website address to find it, 43% knew the address from having found it through Google or another search engine, from a link from another website, or from having visited the website before. Over one-third (38%) learned about the LINCS website from a conference, workshop, or training; from a friend or colleague; or from NIFL/LINCS brochures or written materials. Users were least likely (6%) to have learned about the website through an online discussion group or listserv.²
 - **Locating the LINCS website on the Internet for the first time was a challenge for users during usability tests.** When usability test participants attempted to find the website searching for “literacy,” “reading lesson plans,” or other relevant search terms using either Yahoo or Google, LINCS did not come up in the first few pages of the search results. Even when the participants located a link, they were directed to go first to the NIFL Home Page and then to LINCS.³
 - **Many respondents to the user surveys rated the architecture and design of the LINCS website very good to excellent; however, evidence from an expert review and usability testing suggests otherwise.** The majority (60%-72%) of the approximately 465 users of the LINCS website in our survey rated the LINCS website “Very Good” to “Excellent” for the page loading speed, appearance, clarity and readability of the text, and the ease of moving from page to page.⁴ Our expert reviewer and users in the usability study were more critical. In these studies, users found that the website’s primary and secondary navigation schemes have significant inconsistencies that, combined with an ineffective graphic design, prevented them from understanding how LINCS is organized. This undisciplined information architecture and navigation scheme induced the users to depend on the search tool rather than natural navigation for exploring the website. Because these searches often failed, frustration was compounded. Specific areas of navigational concern included the lack of clear identification of a Home Page and how to find one’s way back to it from other parts of LINCS, and problems with the main navigational tools and graphics of the website itself. Specifically, the primary navigation buttons across the top of the Home Page are confusing, and there are serious inconsistencies in graphics which create misleading directional messages, for example, the color and shape of buttons and tabs, labels, terminology, and location of icons and buttons on the page.⁵
 - **The information architecture for the National and Regional LINCS websites are not coordinated in a way that allows users to understand how information at LINCS is organized or how to navigate between them.** Navigation between and among the National

and Regional sites is complicated by inconsistent buttons, icons, labels, or unnecessary linkages to other pages. Buttons with the same label on different web pages may send the user to a different location or to different content. Some page links take users to missing pages or empty windows with missing information.⁶

- **Searching within LINCS is confusing and time-consuming.** The LINCSearch tool, with its many advanced features and technical terminology designed more for technicians or librarians, is beyond the scope of most users' experiences with search engines. Searches often lead to zero or meaningless results. Once a search fails, there is no "reprieve," no direction for modifying the search or help tips for attempting a new search. While there are other options for searching the website, they are inconsistent and confusing, in part because the user is often forced to choose among multiple databases with no clear explanation as to what is in each database.⁷
- **The LINCS Discussion Lists are cumbersome to access and difficult to search.** The expert review and usability testing found that the LINCS Discussion Lists are unnecessarily complicated, with multiple levels, poor formatting, and no obvious or easy way to search messages or sign up to participate in the list.⁸ Respondents to our user survey familiar with the LINCS Discussion Lists reported greater satisfaction. Most found the ease of subscribing/unsubscribing, posting and reading messages to be "Very Good" or "Excellent." They were least happy with trying to find archived messages, the Help function, the adequacy of the lists' Netiquette rules, and the clarity of the discussion lists overall, although their satisfaction with these averaged "Good" to "Very Good."⁹

2. Who uses the LINCS website?

- **Almost three-quarters (71%) of all respondents to our user surveys had visited the LINCS website.**¹⁰
- **LINCS website users are primarily adult education/literacy program professionals: almost one-half (46%) are program directors, managers, and coordinators, and another 19% are teachers and tutors.**¹¹ Non-users surveyed were also more likely to be program administrators and teachers, with a higher percentage of teachers in the non-user group than among the users.¹²
- **Users' primary purpose for visiting the LINCS website reflects their predominant occupations: managerial/administrative (27%) or instructional (25%).** Slightly fewer users report using LINCS for professional development (23%) and research (20%). Networking with colleagues, the other option listed, was selected by only 2% of users.¹³
- **Over two-thirds (68%) of 705 responding are affiliated with Adult Basic Education programs.** This large percentage reflects the targeting of this group by RMC in its mail and professional organization surveys. Nonetheless, 38% of the respondents to the online LINCS website survey and 53% of the respondents to the online LINCS Discussion List subscriber

survey, with neither survey aimed at ABE professionals, were found to be affiliated with ABE programs.¹⁴

- **93% of survey respondents are professionally involved in the adult education/literacy field, with over 60% with more than five years of experience.** About one-third (32%) of the respondents have been involved in the adult education/literacy field for five years or less. Another one-third (32%) have six to 15 years, and 29% have 16 years or more experience.¹⁵
- **Over two-thirds (69%) of the 705 ABE professionals that responded work in either school districts (36%) or community-based organizations (33%).** Another 17% work in community colleges and 4% in correctional institutions.¹⁶ Respondents not affiliated with ABE programs reported working in community based organizations (22%); two year, four year, and community colleges (15%); public schools and federal education programs, e.g., Even Start and Title I (13%); and federal or state government agencies (13%).¹⁷
- **Two-thirds (66%) of respondents work in small programs (fewer than 500 students enrolled), 20% in large (more than 1,000 students enrolled) programs, and 14% in medium-sized (500-1,000 students enrolled) programs.**¹⁸
- **One-half (50%) of the participants in the RMC survey were urban, one-third (33%) suburban, and 17% rural.** The survey included respondents from across the country.¹⁹
- **Out of 620 respondents, 91% said they spend one or more hours on the Internet per week.** Over one-half (58%) said they spend six or more hours per week on the Internet.²⁰

3. How often do users visit the LINCS website?

- **Respondents use adult education/literacy websites in general more often than they use LINCS, specifically.** Out of 571 respondents, almost one-half (49%) said they use adult education/literacy websites in general four or more times a month (weekly or daily). Fewer than half (41%) made monthly visits to websites.²¹
- **About one-quarter (27%) of the respondents visited LINCS two or more times per month. One-half (50%) made one or fewer visits per month.** The visit made while completing the survey was the first one for 23% of respondents.²²
- **The most visited components were Literacy Resources (83%), LINCS Special Collections (81%), and About Literacy (81%). The least visited were the LINCS Discussion Lists (29%), and My LINCS (26%).**²³
- **Although the Discussion Lists had fewer visitors overall, the frequency with which those users visited the Discussion Lists was high compared to the other website components.** More LINCS users reported visiting the Discussion Lists on a daily basis (13%), more than users reported for any other component (2-5% daily). Literacy Resources and Special Collections had the most weekly visitors (18% and 17%, respectively).²⁴

- **Many Discussion List users access the Discussion Lists exclusively.** Over one-half (57%) of the Discussion List survey respondents said they were unaware of other parts of the LINCS website. Another 30% said other aspects of the website either did not interest them or did not address their needs.²⁵

4. What are users looking for, and are they successful?

- **59% of the respondents to the survey say that in general it is a challenge to locate adult education/literacy information and resources.** However, there is no clear agreement about the cause. Almost one-quarter (23%) said there are too many and diverse sources of information and 14% said there was no central source of information. Accessing information and the quality of the resources was the problem for 16%. Another 7% said that the information and resources in the field do not meet their needs.²⁶
- **Respondents said that the information and resources that they look for (on the Internet or elsewhere) most often are news and announcements about their field, information about literacy programs and services, and lesson plans and learning activities.** They were least likely to look for research and technical reports and information.²⁷
- **Lessons, lesson plans, and learning activities are the most sought after resources for LINCS users, followed by news and announcements, and facts and statistics.** Student texts and workbooks; federal or state policies, regulations and laws; and information on public or private organizations and agencies in adult education/literacy are the least sought after resources and information by LINCS users.²⁸
- **Users said that the information that they most wanted to find on the website the day they answered the survey was facts and statistics,** followed by lessons, lesson plans, and learning activities.²⁹
- **Users go to LINCS first, before going to other sources of information, for facts and statistics (32%), lessons, lesson plans, and learning activities (22%).** They also go to LINCS first to find news and announcements (17%), and articles in journals or digests (17%). In three different ways of asking this question in our surveys about LINCS, users responded by placing scientific or technical reports or articles midway down their list of priorities. Information about policies, regulations, laws; funding resources; organizations and agencies working in the field; and student texts and workbooks were low priorities.³⁰
- **The practical and immediate application of the resource was the most important factor in choosing information and resources, followed by endorsement by colleagues.** Product advertisement was the factor least likely to influence selection, and the methodological rigor in the resource's research and development was only slightly more influential.³¹
- **Almost two-thirds of LINCS users say they find what they are looking for always, or most of the time.** Only 3% said they never find what they are looking for.³²

- **One-half (50%) of respondents said their next likely source of information after LINCS would be an adult education/literacy professional organization or association.** Other respondents said that after LINCS they would go to State Departments of Education (42%) or the U.S. Department of Education and/or Office of Vocational and Adult Education (41%).³³
- **Respondents also indicated that after looking on the LINCS website, they would go first to websites rather than to printed materials or personal contacts to find information or resources.**³⁴

5. How much does the LINCS website contribute to users' professional life?

- **91% of LINCS users said that the materials and resources on LINCS had contributed to their professional skills and knowledge.**³⁵
- **Users reported increased knowledge of research (33%), other websites (31%), current news or articles, and content or subject matter (30%).**³⁶
- **About one-fifth (22%) of the survey respondents said that visiting LINCS improved their instruction or their program planning “a lot.”**³⁷

On the other hand,

- **Aspects of users' work that were “not at all” improved by visiting LINCS were: networking with others (30%), participation in conferences (27%), guidance and counseling (25%), and application of technology (21%).**³⁸
- **Some users said their knowledge of people in the field (21%) and knowledge of organizations or agencies (12%) increased “not at all.”**³⁹

6. What is the overall satisfaction of users, and what design and content issues are important to them?

Overall satisfaction with the content of the LINCS website is high:

- **88% believe that LINCS provides a variety of adult education/literacy information and resources; that the resources and information are of high quality (87%); and comprehensive (86%).**⁴⁰
- **Almost three-quarters (72%) of users said they are very likely to return to the LINCS website and over two-thirds (68%) said they are very likely to recommend the website to others.**
- **Only a few users said they were not at all likely to return (1%) or refer others to the website (3%).**⁴¹

Users said it was “important” or “very important” that

- **the information on the LINCS website is current and up-to-date (95%); and the information on the LINCS website is as comprehensive as possible (93%).** Slightly fewer respondents indicated that it was important that the information on the LINCS website is based on or related to scientific research findings (87%); and they can find what they are looking for on the LINCS website instead of on another website or resource (85%).⁴²
- **Most users (76%) said there were no changes they would make to the LINCS website.**⁴³

7. What is the cost effectiveness of the operation of the LINCS website and its associated databases?⁴⁴

- **In the last five years, NIFL has allocated approximately 2.0 FTE positions to operate LINCS, with 90-95% of their time focused on work related to the website and its databases, including RTC and SC grantees.** The remaining effort was spent on the LINCS Discussion Lists and other activities not directly related to the operations of the website and databases.
- **The five-year NIFL contract for about \$3.8 million with Titan Corporation is the major technical source of support and maintenance for LINCS.** Two staff people, a systems engineer and a Web specialist, are covered by this contract. One-third of their time is involved in providing general administrative and basic technological support to LINCS staff. Other work for LINCS includes system maintenance and documentation; Internet service and support; support for the LINCS cataloging, calendar grant, job and news flashes; system management support; utility support; website and database enhancement services; archive services; and support for America's Literacy Directory, one of the LINCS databases.
- **Regional Technology Center and Special Collections grantees support the operations of LINCS and the development of the content in its databases** through the development and maintenance of their own regional LINCS-supported websites, databases, and listservs; promoting LINCS to the field; recruiting state partners to add their websites to the LINCS system; training partners and others to use LINCS; and providing technological services to partners and other organizations, e.g., hosting discussion lists on their servers.
- **The Southern and Midwest RTCs provide important skills and resources to the continued operation of the LINCS website.** Many of these services are able to be provided without direct expense to the RTC grant budgets through leveraged and donated time, services, and resources. For example, during the last two years of its grant, Midwest was able to leverage an additional 14% more funding for its budget.
- **NIFL has used an effective combination of limited internal staff resources, contractor support, and grantee involvement to maintain a variety of Web-based information dissemination.**

Conclusions and Recommendations

Architecture and Usability

Adult Literacy professionals value the information in LINCS, think highly of the content, and value LINCS' resource potential over basic Web Search engines because it collects specific information together in a single place. The Home Page has a good layout that could be improved with some minor graphic design enhancements to clearly communicate major areas of the site.

However, the current LINCS website has two major usability problems that lead to significant failures and hinder users from finding information: the site is more complicated than it needs to be and the search tool is problematic. Its confusing and unnecessarily complex organization and navigation structure prevent users from finding information. The default search tool, generally the technique of last resort, is particularly problematic because its narrow default database setting restricts access to major resources.

Overall, we recommend a thorough redesign of the information architecture, navigation, search function, and graphic design of LINCS to overcome the most important usability problems discovered in this study. Specifically, the following pieces need redesign:

- **the LINCS site architecture, to improve usability and increase use, especially for less advanced users;**
- **primary navigation, secondary navigation, and site information architecture, to clarify major sections and define regional LINCS within the context of National LINCS;**
- **the search process, to reduce the number of search tools to a single tool; and**
- **the Discussion Lists, to foster more involvement.**

More detailed recommendations on the architecture and design can be found in the *LINCS Usability Study* and *LINCS Expert Review* reports to RMC by its sub-contractor, Design Perspectives, Inc. (see References).

Use and Value to the Field

Users of the LINCS website are primarily experienced adult education/literacy professionals who use the website for their work in program administration or instruction. They are more likely to come from small urban programs. They frequently use the Internet and other adult education/literacy websites, although they visit LINCS somewhat less than they visit other literacy websites.

Users go to LINCS to find materials and resources that will help them plan instructional programs or teach students. Overwhelmingly they say that this aspect of LINCS has contributed to their professional lives and is valuable to the field. LINCS is also an important source of information for writing grants, although some users say that the information is often out-of-date.

Most LINCS users are not as interested in other aspects of LINCS if they are less directly useful. The Discussion Lists are used by only a small proportion of visitors to LINCS, although those who use them do so intensely. Opportunities such as networking with colleagues, obtaining advice from experts, and learning about technology are much less important than finding a helpful lesson plan or new program idea.

Overall, most LINCS users are satisfied with LINCS as it is and would recommend it to others. Given that the costs of delivering this service have been effectively managed by NIFL through a combination of internal staff, outside contractors, and grantee agencies,

- **RMC concludes that the program has been generally successful at its primary goal of building and managing an electronic database infrastructure to disseminate resources to the field.**

However, as LINCS has grown, it has sought to meet an ever expanding array of needs in the field. Except for a small percentage of its users, according to the surveys, most of the interest and enthusiasm for LINCS is focused on its resources for teachers and program administrators. For this reason, we recommend that LINCS:

- **Narrow the range of content available on the LINCS website.** Focus on what LINCS does best and what most users want it to do: provide a one-stop shopping place for people in the field to find useful and high quality resources for adult education/literacy instruction. By controlling the temptation to respond to every need of the adult education/literacy professional – or all the different types of professionals in the field, LINCS will have more resources available to spend on upgrading the quality of the materials in its database.

Although most of our respondents were computer users, clearly the Internet is their first choice when they look for information. LINCS was a pioneer in its field for bringing Internet-based information to the adult education/literacy community. We recommend that:

- **the staff of LINCS continue to look for innovative ways to use the Internet and telecommunications technology to disseminate high quality information to the field, to be a leader in this area as it was ten years ago.** This could involve consulting with technology experts to help think through what is possible given the existing LINCS system. More important, however, it means asking for advice from the leaders in the adult education/literacy field who are already thinking creatively about how to use technology, particularly in the classroom.

RMC suggests that LINCS bring together an advisory group of experts in the field of technology and learning to work with NIFL and LINCS staff to prioritize and strategize a new direction for LINCS. This new strategy should have as a priority the needs of a new, technologically oriented, generation of instructors and learners. Such an initiative could bring energy and excitement to the field.

RMC also agrees with the most frequently stated suggestion to NIFL voiced by our survey respondents:

- **increase the visibility of LINCS**, first, by promoting the site through Internet links and increasing its access through Google, through advertising in publications and through PSAs, and second, by integrating the LINCS and NIFL websites seamlessly, or even replacing one with the other, LINCS has the potential to become NIFL's face on the Internet. Thus, promotion of one becomes promotion of the other.

Notes

¹ The Regional Technology Center grantees include Eastern, Midwest, Northwest, Southern, and Western-Pacific LINCS. Each center's responsibilities to the operation of the LINCS website varies from center to center. The RTCs' efforts and activities and their related costs are not tracked separately or distinctly from their work as grantees. Consequently, LINCS website operations are blended into the range of and scope of services each provides. Discussions of the operation of the RTCs and SCs as grantees is presented elsewhere in this report in sections on the Regional Technology Center Study and Special Collections Study.

² Appendix C. LINCS Website Study, Tables 1 and 2.

³ *LINCS Usability Study*, p. 12.

⁴ Appendix C. LINCS Website Study, Table 3.

⁵ *LINCS Expert Review*, pp. 10-18, *LINCS Usability Study*, pp. 13-17.

⁶ *LINCS Expert Review*, pp. 19-25, *LINCS Usability Study*, pp. 26-27.

⁷ *LINCS Usability Study*, pp. 21-23, *LINCS Expert Review*, pp. 28-37.

⁸ *LINCS Usability Study*, pp. 23-24, *LINCS Expert Review*, pp. 37-43.

⁹ Appendix C. LINCS Website Study, Table 4.

¹⁰ 71% of 954 respondents to the four surveys conducted by RMC said they had visited the LINCS website.

However, two of these surveys targeted people already known to be users of LINCS: LINCS Discussion List subscribers and people using the LINCS website. This question was also asked in a survey of adult education/literacy professional organization members and a survey of adult education program staff, people for whom we did not know their experience with LINCS. Of the 469 respondents in these two surveys, 55% said they had used LINCS. Therefore, a better estimate for previously visiting the LINCS website may be a midpoint between these two numbers: 63%.

¹¹ Appendix C. LINCS Website Study, Table 5.

¹² The surveys conducted by RMC attempted to obtain representation from all the major categories of people who might work or be interested in the adult education/literacy field. However, the surveys relied on volunteer participation so the percentages reported here may or may not be representative of the adult education/literacy field overall.

¹³ Appendix C. LINCS Website Study, Table 7.

¹⁴ Appendix C. LINCS Website Study, Table 6.

¹⁵ Appendix C. LINCS Website Study, Table 7.

¹⁶ Appendix C. LINCS Website Study, Table 9.

¹⁷ Appendix C. LINCS Website Study, Table 10.

¹⁸ Appendix C. LINCS Website Study, Table 11.

¹⁹ Appendix C. LINCS Website Study, Table 12.

²⁰ Appendix C. LINCS Website Study, Table 13.

²¹ Appendix C. LINCS Website Study, Table 14.

²² Appendix C. LINCS Website Study, Table 15.

²³ Appendix C. LINCS Website Study, Table 16.

²⁴ Appendix C. LINCS Website Study, Table 17.

²⁵ Appendix C. LINCS Website Study, Table 18.

²⁶ Appendix C. LINCS Website Study, Table 19.

²⁷ Appendix C. LINCS Website Study, Table 20.

²⁸ Appendix C. LINCS Website Study, Table 21.

²⁹ Appendix C. LINCS Website Study, Table 22.

³⁰ Appendix C. LINCS Website Study, Table 23.

³¹ Appendix C. LINCS Website Study, Table 24.

³² Appendix C. LINCS Website Study, Table 25.

³³ Appendix C. LINCS Website Study, Table 26.

³⁴ Appendix C. LINCS Website Study, Table 27.

³⁵ Appendix C. LINCS Website Study, Table 28.

³⁶ Appendix C. LINCS Website Study, Table 30.

³⁷ Appendix C. LINCS Website Study, Table 29.

³⁸ Appendix C. LINCS Website Study, Table 29.

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- ³⁹ Appendix C. LINC'S Website Study, Table 30.
⁴⁰ Appendix C. LINC'S Website Study, Table 31.
⁴¹ Appendix C. LINC'S Website Study, Table 32.
⁴² Appendix C. LINC'S Website Study, Table 33.
⁴³ Appendix C. LINC'S Website Study, Table 34.
⁴⁴ Findings in this section are from Appendix B. *LINC'S Cost Analysis*, pp. 5-11.

III. Discussion Lists Study

Introduction and Research Questions

RMC was asked to conduct a review of the LINCS online Discussion Lists (DLs). The goals were to investigate the a) fidelity of the LINCS DLs to the legislative mandate and the Institute's mission, b) content and purpose of postings to four of the LINCS discussion lists, c) discussion list monitoring and operational procedures; and d) value of the LINCS discussion lists to the field of adult literacy.

To do this, RMC developed study questions in four areas: Discussion List structure and operations, subscribers, content, and effectiveness and value.

Structure and Operations

1. What are the LINCS Discussion Lists?
2. Who are the List Moderators and what are their roles and responsibilities?
3. What are the challenges in moderating a list?

Subscribers

4. Who uses the Discussion Lists and why?
5. How do they learn about the Discussion Lists?
6. How active are the Discussion Lists?

Content

7. What is the content in the LINCS Discussion Lists?
8. How prevalent are legislative advocacy messages?

Effectiveness and Value

9. How effective are the Moderators?
10. How satisfied are users with the content of the Discussion Lists?
11. How often do users find what they are looking for?
12. What is the impact of participating in the Discussion Lists?
13. How do the Discussion Lists contribute to the field?
14. What are the alternatives to LINCS Discussion Lists?
15. How cost-effective are the Discussion Lists?

Methodology

RMC used multiple methods to collect and analyze data to answer these questions. These methods included a document review; a content analysis of posted messages; telephone interviews with key LINC S staff, moderators, and operators of private online discussion lists; an online survey of subscribers; and website usability testing and expert review.

Document Review

RMC reviewed all available documentation relating to the Discussion Lists including pertinent legislation, mission, and policy statements; and guidance and other information provided to Moderators.

Interviews with NIFL Staff and Other Organizations

In December 2003 RMC reviewed LINC S documents to verify the legislative mandate for NIFL and its mission and guiding principles for establishing and operating the LINC S Discussion Lists as a component of NIFL's communication network. Telephone interviews were conducted with LINC S project staff, a sampling of LINC S discussion moderators, and staff of private organizations that implement web-based online discussion lists. These were analyzed using content and other qualitative analysis techniques and the results reported to NIFL in an interim report, *Review of LINC S Discussion Lists*,¹ submitted previously to NIFL. For more information about these interviews, please refer to Appendix A, Technical Information on Methods.

Content Analysis

RMC Research contracted with KPMG, LLP to determine the extent of advocacy message postings and to examine the impact of the DLs on service delivery or program outcomes. KPMG collected all 41,000 postings recorded on the 13 DLs from their inception (four Discussion Lists as early as 1995) through December 2003. KPMG developed a sampling design that provided an estimate of the item of interest and a statistical statement regarding the accuracy and precision of the resulting estimate. A posting was classified as a "legislative advocacy posting" if its intent was to encourage others to contact members of Congress via letter, email, or office visits in order to advocate for a specific political position. KPMG also used interviews with Discussion Lists moderators and an item-by-item classification of a 3% selection of the 41,000 DL messages to develop a key word search process to identify postings that contain evidence of positive change in the practice of literacy education, program outcomes, or professional development activities. The full report on this analysis, *Content Analysis of Discussion Lists*, is available in this report in Appendix D.

Interviews with Discussion List Moderators

RMC drafted a structured interview protocol designed to determine DL moderators' perceptions of their roles and responsibilities, NIFL monitoring and operational procedures, quality of discussion list postings, and value of this communication network to the field of adult literacy.

RMC professional staff conducted the interviews by telephone during March 2005. A summary report of these interviews is included in Appendix E.

Online Survey of Discussion List Subscribers

One of the four surveys that RMC conducted (see Chapter II, Methodology) targeted subscribers of the LINC'S Discussion Lists. An invitation to participate in the survey was sent to a randomly selected sample of Discussion List subscribers. The invitation included a link to an online survey which asked subscribers to describe their experience with and opinions of the Discussion Lists and their moderators. The survey was conducted during the Spring 2005. Details of this survey are described in Appendix A, Technical Information on Methods.

Expert Review and Usability Testing

See Chapter II, Methodology, for a description of the methodologies used.

Cost Analysis

See Chapter II, Methodology, for a description of the methodology used.

Findings

Structure and Operations

1. What are the LINCS Discussion Lists?²

The LINCS website is designed to be primarily one-way communication of information from NIFL and/or LINCS to users. NIFL first created the discussion lists as a component of LINCS in 1995 to provide a means for promoting two-way discussion of critical issues in the literacy field, sharing resources, asking questions of subject experts, and keeping abreast of current information.

The LINCS discussion lists are subscription-based, e-mail mailing lists. Subscribers use their e-mail accounts to receive and post messages; posted messages are archived on the LINCS website for public access and serve as an information resource for non-subscribers to view on the site. This type of list provides an environment where subscribers can post messages and exchange ideas with a large group of people. The discussion lists in the LINCS network are public and open to any subscriber and address topics of interest to the adult education/literacy community. Each national LINCS discussion list is moderated by a national organization with expertise in the topic area.

At the time of this study, LINCS had more than 6,400 subscribers on 13 discussion lists. These lists (and the organizations that moderate them) include:

- **Adult Literacy Professional Developers List**
Association for Adult Literacy Professional Developers
- **Assessment List**
Ohio Literacy Resource Center
- **Equipped for the Future (EFF) List**
Center for Literacy Studies at The University of Tennessee
- **English as a Second Language (ESL) List**
The Center for Adult English Language Acquisition (CAELA)
- **Family Literacy List**
National Center for Family Literacy (NCFL)
- **Focus on Basics List**
National Center for the Study of Adult Learning and Literacy (NCSALL)
- **Health & Literacy List**
System for Adult Basic Education Support
- **Learning Disabilities List**
National Institute for Literacy
- **Poverty, Race, & Literacy Discussion List**
National Center for Literacy Social Justice
- **Program Leadership and Improvement**
Southern LINCS at the Center for Literacy Studies

- **Technology & Literacy List**
Literacy Assistance Center
 - **Women & Literacy List**
Center for the Study of Adult Literacy (CSAL)
 - **Workplace Literacy List**
Center for Literacy Studies at The University of Tennessee
- **All but two of the lists are partially moderated.** In partially moderated lists, a moderator directs the "conversation" to appropriate topics, suggests new topics to open for discussion, plans for "guest speakers," and searches for and posts materials of interest. The moderator can contact a subscriber after a posting if the message is determined by the moderator to be inappropriate for the list. The Workplace Literacy and Program Leadership and Improvement lists are fully moderated. All messages are reviewed by the moderators before being posted to the list.³

2. Who are the List Moderators and what are their roles and responsibilities?⁴

- **Seven of 13 moderators are unpaid volunteers.** Two others are paid for fully moderating their lists and four are paid for their additional roles as Special Collections Directors.
- **Moderators are selected based on their qualifications and experience in the topic of their list.** These qualifications, according to interviews with the moderators themselves, include a working knowledge of the field; knowledge of policy developments and how they relate to practice; awareness of current needs and interests in the field and strategies for assessing them; creativity, knowledge of other relevant e-lists for cross-posting information; and ability and willingness to communicate effectively on the list and through individual exchanges via e-mail or telephone.⁵ Two of the current moderators are the original moderators for their Discussion Lists. NIFL staff or previous moderators recruited the other current moderators, four of whom are relatively new at moderating, having come to the position in the Fall of 2004.
- **Training to be a LINCS Discussion List moderator occurs primarily on the job or from discussion with other moderators.** Only one moderator indicated she had received formal training for her role as a moderator. The newest moderators reported being trained (if at all) by their predecessors and through their experience as list subscribers. Three of the moderators have previous experience at moderating discussion lists for other organizations. In the past, there was ongoing training through regular meetings, monthly by phone and yearly in person, and a LINCS National staff member was always available by phone or email at any time. With the reduction in staff at National LINCS, the moderators find they have less formal support. The best ongoing training and support, according to the moderators, now comes through the "Mod Squad," a consortium of all of the moderators meeting regularly through email, phone, and occasionally in person.
- **NIFL provides guidelines to moderators about their responsibilities in the NIFL "Adult Literacy Electronic List Moderators' Handbook"⁶. While moderators follow these guidelines, each emphasizes or gives priority to different ones in moderating their own**

lists. The guidelines say that moderators develop, post, revise, and enforce the list rules. They post relevant resources and information to the list, including other lists, and arrange for guest “speakers” to stimulate discussion. They provide technical assistance in using the list, and arrange for substitute moderators.

Moderators said they believe their primary purpose is professional development in the form of (1) providing to their subscribers good, accurate and up-to-date information, including (a) announcements of upcoming conferences and meetings, (b) instructional course opportunities, and (c) newly released research findings and reports, and, in particular, (2) creating an environment for people to network by initiating stimulating, lively discussions on relevant topics. Through the Discussion Lists, the moderators perceive their role as helping adult educators, who often feel isolated in their work, to connect with other professionals in their field and get feedback and answers to questions from experts. Other aspects that Moderators raised as important were availability, i.e., being available, even when traveling, and responsive to the needs of subscribers, creating topics of interest, facilitating robust discussions, and providing guest moderators for expanded discussion.

- **Moderators use a variety of techniques to stimulate discussions.** Some of these include subscribing to e-newsletters to find current information to post, polling subscribers to learn what topics they are most interested in, inviting guest participants, pretending to be naïve so people will elaborate more, and posting controversial questions (although moderators say they are reluctant to do this now with the new guidelines to manage inappropriate messages).
- **The moderators believe they are following the Discussion List guidelines provided in the Handbook, including both monitoring and enforcement.** All actively watch for “inappropriate” messages (as they can distinguish them) and say they respond according to the guidelines.

3. What are the challenges in moderating a list?⁷

- **Moderators say their most difficult challenge is identifying lobbying and advocacy postings.** In particular, the moderators generally agree that NIFL clearly defines *lobbying*, but, as one moderator put it, “NIFL is not clear about what [*advocacy*] means, and their lack of clarity sends mixed messages. If they don’t want advocacy specifically around legislation, then they need to say so in the guidelines.” A major concern for the moderators is that without clarification, subscribers will hesitate to participate freely in discussions.
- **The moderators are concerned about discussions at NIFL to fully moderate all LINC Discussion Lists. The current moderators of partially moderated lists say they will not continue in the job if they are asked to fully moderate their lists.** Moderators say that a fully moderated list requires more time, i.e., constant attention, to manage. It also places more responsibility on the moderator since it requires reading and approving every message that appears on the list. They described this role as that of a censor. Few of the moderators want either to spend so much time screening messages or to risk the legal issues that might be raised by decisions made to censor a posting. Other problems that could result from fully

moderating a list include delays in discussions and reduction in their spontaneity. Time available to research resources to post to the list would also likely decline.

- **Other concerns raised by the moderators include the mix of users subscribing to the lists, and the amount of lurking compared to posting that occurs.** Moderators are generally satisfied with groups subscribing to the lists, but would like to see this mix enhanced. They would like to see more learners, family members of learners with disabilities, classroom teachers, state leaders, human resources professionals, and union leaders participating. A number of moderators are frustrated by the lack of participation by the many lurkers who do not post messages, the subscribers who ask questions off-line rather than on the list, and by the subscribers who simply ask for information rather than participating in discussions.
- **All of the moderators believe their discussion lists are successful.** As proof, one moderator cited the increased number of messages when an important announcement is sent out, indicating that subscribers monitor the discussion list even if they do not always post. Others report informal feedback from subscribers either off-List via private email or at conferences that indicate their discussion lists are successful. Another moderator points out that many subscribers have stayed on her discussion list for years and continue to read and respond regularly; if the DL was not meeting their needs, they would have abandoned it years ago.

Subscribers

4. Who uses the Discussion Lists and why?⁸

In 2004, the 13 LINCS Discussion Lists had, on average, about 6400 subscribers. The moderators described these subscribers as falling into a wide variety of occupations:

- Program administrators/managers
- Teachers/instructors
- Trainers/professional developers
- Policymakers
- Researchers
- Health practitioners
- Family literacy supporters⁹

Our survey of LINCS Discussion List subscribers (n=86) found a similar profile:

- **37% were program directors, managers, or coordinators.** The next largest group was teachers/tutors (13%), followed by state administrators and managers (11%), researchers (11%), and high school, college, and graduate students (11%).¹⁰
- **Over one-half (52%) are affiliated with an ABE program.** Others are affiliated with federal or state government agencies (17%), state literacy resource centers (15%), and national literacy organizations (15%).¹¹

- **Over 70% (72%) of the Discussion List subscribers had been professionally involved in the adult education/literacy field for over five years, over one-half (57%) for over ten years.**¹²
- **The reasons given for subscribing to LINCS Discussion Lists were, #1, to keep informed of developments in research and practice and, #2, to strengthen subject knowledge and skills to improve their instructional practice.** Subscribers were least likely to use LINCS Discussion Lists to learn about legislation and discuss policy initiatives, or to network with colleagues.¹³
- **Most (85%) of subscribers had visited the Discussion List Archives of past messages.**¹⁴ Subscribers who visited the LINCS Discussion Lists Archives of past messages were most often looking for information on a particular subject (37%) or trying to find a particular message thread on a subject (24%), rather than looking for messages by specific authors or dates.¹⁵

5. How do users learn about the Discussion Lists?

- **LINCS subscribers are most likely to have become aware of the Discussion Lists through the links on the LINCS website or information in LINCS written materials (29%), or from a friend or colleague (20%).**¹⁶
- **Most subscribers (85%) subscribe to a list for more than one year.** Many (44%) have subscribed for four or more years.¹⁷
- **Almost one-third (31%) of current subscribers have unsubscribed at least once from one of the LINCS Discussion Lists.**¹⁸
- **Over one-half (52%) of subscribers also subscribe to other adult education/literacy discussion lists.**¹⁹

6. How active are the Discussion Lists?

- **The number of postings to the 13 LINCS Discussion Lists grew to 6,972 in 2000 and then declined by 26% by 2003.**²⁰ In large part, growth occurred because of the addition of new lists over time. In 1995, LINCS began with four lists: ESL, Family Literacy, Workplace Literacy, and Learning Disabilities. By 2000, 11 lists were supported and two more were added in 2003.
- **ESL, Family Literacy, Women and Literacy, and Health and Literacy have had the highest average number of postings per year; ESL, Family Literacy, Health and Literacy, and Learning Disabilities have had the highest total number of postings since inception.**

- **Homelessness and Literacy, Assessment, and Focus on Basics have had the lowest average number of postings per year; Assessment, Adult Literacy and Professional Development, Homelessness and Literacy, and Focus on Basics have had the lowest total number of postings since inception.**²¹ In a review of the monthly message activity in 2004, message activity was found to be as low as 2 messages in a month (Homelessness and Literacy list) or as high as 118 messages per month (English as a Second Language List), depending on the list.²² However, as the moderators noted, many people visit discussion lists without ever posting a message.

Our survey supports this observation by the moderators about message posting:

- **About one-half (46%) of subscribers said they “often” read messages posted to LINCS discussion lists. However, only 5% said they “often” post messages to the lists.** One-third (34%) of the subscribers said they had “no interest in posting,” and 22% said they “had nothing to add.” When subscribers do post to a list, over one-half (58%) of them report that they receive some kind of response, through the list (26%), privately (9%) or through both (23%).²³

Depending on the particular list, subscribers may visit more or less often. In our survey of Discussion List subscribers,

- **five of the 13 lists were visited “often” by more than one-half of the subscribers; 11 of the 13 lists were visited “often” by 40% or more of their subscribers.**
- **One list, Homelessness and Literacy, had a much lower frequency of visits than the other lists. Over 70% said they “never” visited it and only 10% said they visited it “often”.**²⁴

Content

7. What is the content in the LINCS Discussion Lists?²⁵

- **Participating in discussion of a topic was the most frequent type of communication in the post for all three lists analyzed by KPMG. Announcements were the second most frequent type of communication for two of the lists. Responding to a request for help or information was one of the top three types of communication for all three lists.** Each of the other types of communication, e.g., requesting help or information; initiating a discussion on a topic, administering the discussion list; cross-posting a message from another list, or posting a message that was not relevant to the discussion list, was less than 15% of the messages.
- **The most frequent subjects of the posts, in two of the three lists sampled, were literacy resources. Subjects not relevant to that list were the second most frequent subject of post.** Other subjects, e.g., practices, discussion list management, literacy event, literacy tests, literacy software, were each less than 10% of the messages.

- **The primary aspect of the post for all three lists was information access/sharing.** Other categories of primary aspects with a low percent of total messages were pedagogy, program operation, discussion list management, assessment, professional development, and messages not relevant to the list.

8. How prevalent are legislative advocacy messages?

One concern raised about the content of the LINCS Discussion Lists is the extent of legislative advocacy that has occurred on them. Several examples of such messages found in the lists are:

“If you are interested in the amendment, or support or oppose it, please contact your senator prior to the June 21 date.”

“IMMEDIATE ACTION NEEDED! Senate proposes Even Start funding cut – Contact your Representatives and Senators now!”

“I hope you believe, as I do, that adult education should benefit from this allocation of Star Schools funding. I urge you to contact your Senators and House members and ask them to restore funding for the Star Schools program in the appropriations bills.”²⁶

To investigate the incidence of such postings, RMC contracted with KPMG to conduct a content analysis of the LINCS Discussion List messages.

KPMG searched the 13 LINCS Discussion Lists using keywords likely to identify potential legislative advocacy messages. From this set of potential legislative advocacy messages, a 5% random sample of the messages in each list was examined for legislative advocacy content.

- **The incidence of postings that are legislative advocacy in nature and thereby a misuse of the Discussion Lists were found to be less than 1% of the activity on the lists.** KPMG also conducted a subsequent analysis to determine whether the incidence of legislative advocacy-related postings changed significantly in the most recent three-year period, using a sample of over 40% of the messages on two most active lists between 2001 and 2003.
- **There has been no significant increase in legislative advocacy postings on the LINCS Discussion Lists in the most recent three-year period compared to the entire period of the Discussion List operations.** Interviews with the Discussion List moderators concurred with these findings. They said they have observed relatively few inappropriate, not just legislative advocacy, messages on their lists and have not found it to be a problem. Only three moderators reported truly “inappropriate” messages on their Discussion Lists: 1 to 3 messages each which were never re-sent. More typical are messages that they return to the sender for re-wording for better clarity and minor changes such as formatting the message into “plain text” as per NIFL’s guidelines for the Discussion Lists.²⁷

Effectiveness and Value

9. How effective are the Moderators?

- **Two-thirds or more of the subscribers rated the DL moderators as “effective” or “very effective” on a set of moderating activities.**
- **Subscribers said moderators were most effective at posting questions, articles, and other resources (83%), responding to subscribers’ questions (82%), and sharing their own expertise and experience (80%).** Moderators were least effective at offering technical assistance to users of the list, monitoring/screening messages, and providing guidance on list participation to users.²⁸

10. How satisfied are users with the content of the Discussion Lists?

- **Three-quarters (75%) of subscribers say they are “satisfied” or “very satisfied” with the range of literacy topics covered by the Discussion Lists.** Only 3% of respondents thought there were Discussion Lists that should be removed because they were not relevant to instructional practice in the field. One-quarter (26%) thought there were other discussion list topics that were not represented that should be.²⁹
- **About one-half (49%) of the Discussion List subscribers surveyed said that they were “satisfied” or “very satisfied” with the reliability of the information in the postings.** Subscribers also rated the following as among the best aspects of the Discussion Lists:
 - “usefulness of the message content to your job;”
 - “relevance of the message content to instructional practice;”
 - “quality of the message content;”
 - “appropriateness of message content;” and the
 - “moderating practices used to manage the list.”³⁰
- **Most of the LINCS Discussion List Moderators were also very satisfied with the quality of the content.** In interviews, they observed that the quality and focus of the Discussion Lists went up and down, depending on the events of the day. When there is something of vital importance to the field is being discussed, they noted that the quality of the discussion is excellent, that is, everyone stays on topic. At other times, for example at the onset of the Iraq war, some subscribers had difficulty staying focused and the moderators had to intervene frequently to keep the discussions relevant to the topic at hand.³¹

Some users reported that they are not happy with the way content and participation are managed, particularly in the lack of clarity around advocacy messages.

- **Only 28% of the subscribers said that LINCS guidelines and policies related to ensuring appropriate content and participation are “effective” or “very effective.”³²**

- **About 40% of subscribers say LINCS is only “somewhat” or “not clear” in defining what constitutes an advocacy or lobbying message posted on the lists.** Other aspects of the lists, e.g., professional development opportunities, networking opportunities, mix of stakeholders represented, and frequency of messages, the level of satisfaction also have somewhat lower satisfaction, with 20% or fewer saying they are “very satisfied.”³³
- **The least satisfactory aspects of the LINCS Discussion Lists for these users were the number of subscribers posting messages, frequency of discussions between subscribers, and the content focus of the discussions.**³⁴

11. How often do users find what they are looking for?

- **Over one-half (51%) of subscribers said they “always” or “most of the time” find what they are looking for in a discussion list. Less than 10% said “never.”**³⁵ Subscribers that do not find what they are looking for on their LINCS Discussion List are most likely to search the Internet (41%) or go to another website (20%). Going to another part of the website is the choice of another 20% of respondents.³⁶

12. What is the impact of participating in the Discussion Lists?

To analyze the impact of the discussion list postings for positive impact on users, KPMG conducted a content analysis of the lists using a keyword search strategy. The searches looked for evidence of impact on 1) program operation, e.g., rates of attrition, literacy gains, employment placements, etc.; 2) professional development, e.g., changes in networking, Q&A, increased dissemination of research, etc.; and 3) professional practice, e.g., more effective pedagogy, or the application of research, etc.

- **Impact of the LINCS Discussion Lists on users was found to be inconclusive since no messages describing impact were found.** An item-by-item review of a representative 3% sample of selected Lists also did not find any direct statements about impacts.³⁷

13. How do the Discussion Lists contribute to the field?

We asked all of the people surveyed for the LINCS Comprehensive Review to rate different aspects of LINCS for their contributions to their professional skills and knowledge, and therefore, to the adult education/literacy field. The Discussion Lists were included in this list.

- **Out of seven categories of activities sponsored by LINCS, users ranked Discussion Lists second, after the materials and resources available on the LINCS website, for their contributions to the field.** The other activities included online courses, workshops, conference presentations, technical assistance, and other LINCS-related activities.³⁸
- **12% of users reported that the LINCS Discussion Lists, more than any other aspect of LINCS, including the materials and resources on LINCS, contributed to their professional skills and knowledge on a daily basis.**³⁹

- **Discussion List information related to classroom instruction was the most useful to subscribers.** Three-quarters (74%) of the subscribers said that knowledge about adult learners and Web-based and other types of classroom resources (73%) were the most useful types of information. Almost as many (70%) found classroom curriculum and instructional practice information useful.⁴⁰
- **75% of subscribers also said that the LINCS Discussion Lists in general are “important” or “very important” to improving instructional practice in the adult education/literacy field;** 5% said they were “not important.” Hearing from experts in the field (69%), research findings and reports (64%), and networking opportunities to share expertise/experiences (61%) were useful to a majority of subscribers.⁴¹
- **The least useful information on the Discussion Lists concerned job opportunities (26%), information about professional organizations and agencies (48%) and professional development opportunities (49%).**⁴²
- **43% of subscribers said that participation increased their professional knowledge of current news and events. The other area rating highly was their increased knowledge of people in the field that they can contact (38%).** Other aspects rated lower: research studies (34%), content or subject matter (32%), instructional methods or practice (28%), with knowledge of literacy organizations and agencies contributing least (22%)⁴³.
- **More subscribers (32%) credited the Discussion Lists with contributing to program planning than other aspects of practice.** Less than one-quarter of the subscribers said that the other aspects of the Discussion Lists, e.g., teaching and administration, assessment, application of technology, research projects, and networking with colleagues, contributed to their professional practice.⁴⁴
- **About one-half (52%) of the Discussion List subscribers surveyed said that they were “satisfied” or “very satisfied” with “the overall value of the Discussion Lists to the adult education/literacy community.”**⁴⁵

Similar percentages were found when subscribers were asked about the impact of discontinuing the LINCS Discussion Lists.

- **Subscribers thought discontinuing the Discussion Lists would leave information or experiential gaps for the adult education/literacy field in improvement of instructional practice (55%), development of content knowledge (54%), and opportunities for networking with colleagues (53%).** Fewer (43%) saw it as creating gaps in the field for professional development.⁴⁶

Another measure of the value of a discussion list is the amount of activity compared to other lists. In this case, there is some evidence that the Discussion Lists are less successful in this area.

- **72% of subscribers report “often” reading messages posted to other lists, but only 46% report reading message posted to LINCS Discussion Lists.**

- **17% of subscribers post messages to other lists; 5% post messages to LINCS Lists.**⁴⁷

14. What are the alternatives to LINCS Discussion Lists?

LINCS Discussion List moderators interviewed for this study insisted that there are no other sources available to the adult education/literacy field for the type of information that their Discussion Lists provide. As one moderator put it, “It’s the only system that connects [adult education] people nationwide on a daily basis. The field is pretty marginal anyway and teachers are isolated, so Discussion Lists are increasingly becoming more important.”⁴⁸

Subscribers have a somewhat different perspective on the LINCS Discussion Lists compared to other lists.

- **48% said that there is “often” overlap or duplication between the LINCS Discussion Lists and another list they visit.**⁴⁹

However,

- **58% said that they “often” find that the LINCS Discussion Lists are useful compared to another list they visit.**⁵⁰
- **Most subscribers (87%) to the LINCS Discussion Lists believe that the National Institute For Literacy is the most appropriate organization to provide discussion lists for the adult education/literacy community.**⁵¹

15. How cost-effective are the Discussion Lists?⁵²

- **The costs of the information technology infrastructure used to operate the LINCS Discussion Lists are essentially zero.** The computer software required to operate the Discussion Lists are based on public domain software. The system has not required any significant investments in the ten years since the system was first set up and that is likely to be the case in the immediate future.
- **The personnel costs to operate the LINCS Discussion Lists are essentially zero.** NIFL has used voluntary rather than paid staff with experience in each DL content area to work as moderators of the lists, saving the program considerable personnel costs while ensuring ongoing management, including application of NIFL standards to postings.
- **Based on the current configuration and use of software, hardware, subject matter experts, the LINCS Discussion Lists are a cost-effective component of LINCS and yield a high benefit to cost ratio.** The Discussion Lists yield measurable benefits based on the number of registered users, activity conducted, and the search activity of the DL archives, while requiring minimal financial resources. A more detailed accounting would yield a better articulation and understanding of the benefits, but since the costs are trivial such an articulation would likely simply heighten the benefits and strengthen the ratio.

Conclusions and Recommendations

The LINCS Discussion Lists appear to assist NIFL in meeting its legislative mandate and fulfilling its mission. Through the DLs, NIFL has developed and implemented a national dissemination and communication system to support information exchange, technical assistance, and training in the literacy field. In addition, the DLs are a national communication network for the free flow of ideas among various partners, agencies, providers, and practitioners in the literacy field.

The Discussion Lists have seen substantial growth and use since 1995. Total postings peaked in 2000, and in 2004 the 13 LINCS Discussion Lists had, on average, about 6400 subscribers. Our survey found that users are primarily professional program directors, teachers, and state-level administrators with many years in the field. Over one-half are affiliated with an ABE program. Although as a percentage of the visitors to LINCS, users of the Discussion Lists are a small group (29%), they are also the most intensive and devoted users of LINCS, more likely than any other group of LINCS users to visit LINCS on a daily basis – for the purpose of visiting their Discussion List.

The content and current topics of the Discussion Lists are consistent with NIFL’s mission of developing a national dissemination and communication system in the field of literacy. Consistent with that mission, the Discussion Lists provide “a national focal point for research, technical assistance, research dissemination, policy analysis, and program evaluation in the area of literacy; and facilitate a pooling of ideas and expertise across fragmented programs and research efforts (NLA, 1991, Section 102).” It appears that the lists are used by subscribers primarily in accordance with their stated purposes.

Concern by NIFL about inappropriate content posted on the LINCS Discussion Lists led to including a content analysis in the LINCS Review. This investigation found that the violations of legislative advocacy or lobbying policies are few (less than 1% of the total messages posted to the four lists included in this review) as are off-topic postings (less than 3% of the total messages posted). Affronts to the civility of the lists and other inappropriate uses were also isolated incidents that were dealt with by NIFL and LINCS staff and have since stopped. Nonetheless, concern about government censorship of a discussion list is believed by DL moderators to explain an overall decline in message postings across lists over the past year. This suggests a need to re-examine the monitoring and operational policies guiding the DLs and to make efforts to re-publicize them.

Interviewed LINCS stakeholders (e.g., grantees, program staff) were unanimous in their belief that the lists are an invaluable resource in the highly fragmented and weakly professionalized field of adult literacy. Extensive use of the DL archives is evidence that they are perceived as a valuable resource for literacy community. RMC was unable to identify any other publicly- or privately-run resource available that could provide the same service to the field that the LINCS lists now provide, particularly given the small costs that are required to continue operating them. In light of the above conclusions, RMC makes the following recommendations concerning the LINCS Discussion Lists:

- **Continue to operate the LINCS Discussion Lists.** Given their function as a national communication network and that their current cost to operate is essentially zero, we see only benefits accruing from public participation in the Discussion Lists. Content is monitored by a team of volunteers and the system's operation is automated, requiring minimal oversight. The software will continue to run on any Unix-based server supporting the NIFL website, and the public and NIFL will reap the rewards of supporting a major resource for the field.
- **Clarify the structure and operations.** This can be accomplished by (a) providing clear direction to moderators and subscribers regarding the intent of the LINCS discussion lists, (b) developing clear policies to guide the overall operation and moderating of the Discussion Lists, (c) articulating clear definitions and working toward a broad understanding of definitions for important terms such as advocacy, lobbying, and inappropriate messages, and (d) establishing clear policies for dealing with each.
- **Improve the data available about the Discussion Lists.** Generate regular (monthly or quarterly) activity reports to track usage of current postings as well as searches of the archives. Regularly seek feedback from users (perhaps through moderator led discussions) about how access to, and information obtained from, the DLs have led to changes in adult education/literacy program operation, outcomes, professional development, etc. Such reports will provide NIFL and DL moderators with meaningful numbers and information to assess the impact of the DLs on the literacy community, particularly for DL marketing campaigns, hosted "expert discussions," or other special DL-related events.
- **Communicate with subscribers, moderators, and other constituents.** This can be accomplished by (a) communicating regularly with subscribers to engender a better understanding of NIFL policy on the purpose and activities of discussion lists; (b) more directly supporting moderators, including support and networking activities, reminders and ideas for how to keep discussions lively and of high quality, and additional support to help moderators deal with inappropriate messages; and (c) taking a proactive stance in reporting to key DL constituencies such as the NIFL Board and partners about DL activities, issues, and outcomes on regular basis.
- **Enrich the content of the discussion lists.** This can be accomplished by (a) involving researchers and experts in the field as guest speakers to stimulate discussion and ensure high quality content, (b) aligning the current discussion lists with the emerging mandate for a focus on scientifically based research and resources and an expansion to include learning across the ages, and (c) keeping the DL content current by establishing additional discussion lists on hot topics such as scientifically based research practices, reading research across the lifespan, NCLB as it relates to ABE, or women in the workplace.
- **Publicize the LINCS Discussion Lists.** Many of the lists have a specialized constituency and some targeted advertising in the journals, magazines, newsletters, and conferences of these groups could attract new people and ideas to the lists, particularly those experiencing less use.

Notes

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- ¹ For details of the methodology used, see the Interim Report *Review of LINCS Discussion Lists*, December 15, 2003 draft, pp. 3-5.
- ² Interim Report *Review of LINCS Discussion Lists*, December 15, 2003 draft, pp. 15-18.
- ³ Appendix E. LINCS Discussion Lists Study, Discussion Lists Moderators Interviews Summary, pp. 9-11.
- ⁴ Appendix E. LINCS Discussion Lists Study, Discussion Lists Moderators Interviews Summary, pp. 3-7.
- ⁵ Interim Report *Review of LINCS Discussion Lists*, p. 40.
- ⁶ http://www.nifl.gov/lincs_dlms/docs/drafthandbook5.24.03.doc
- ⁷ Appendix E. LINCS Discussion Lists Study, Discussion Lists Moderators Interviews Summary, p.7.
- ⁸ Appendix E. LINCS Discussion Lists Study, Tables 1-7.
- ⁹ Appendix E. LINCS Discussion Lists Study, Discussion Lists Moderators Interviews Summary, p. 12.
- ¹⁰ Appendix E. LINCS Discussion Lists Study, Table 1.
- ¹¹ Appendix E. LINCS Discussion Lists Study, Tables 2 and 3
- ¹² Appendix E. LINCS Discussion Lists Study, Table 4.
- ¹³ Appendix E. LINCS Discussion Lists Study, Table 5.
- ¹⁴ Appendix E. LINCS Discussion Lists Study, Table 6.
- ¹⁵ Appendix E. LINCS Discussion Lists Study, Table 7.
- ¹⁶ Appendix E. LINCS Discussion Lists Study, Table 8.
- ¹⁷ Appendix E. LINCS Discussion Lists Study, Table 9.
- ¹⁸ Appendix E. LINCS Discussion Lists Study, Table 10.
- ¹⁹ Appendix E. LINCS Discussion Lists Study, Table 11
- ²⁰ Appendix D. *Content Analysis of Discussion Lists*, Table 1, page 9.
- ²¹ Appendix D. *Content Analysis of Discussion Lists*, Table 1, page 9.
- ²² Interim Report *Review of LINCS Discussion Lists*, Table 1, p. 18.
- ²³ Appendix E. LINCS Discussion Lists Study, Table 8 through Tables 12-15.
- ²⁴ Appendix E. LINCS Discussion Lists Study, Table 12.
- ²⁵ Findings in this section are found in Appendix D, *Content Analysis of Discussion Lists*, pp. 37-43.
- ²⁶ Appendix D. *Content Analysis of Discussion Lists*, pp. 23.
- ²⁷ Appendix D. *Content Analysis of Discussion Lists*, pp. 22-28.
- ²⁸ Appendix E. LINCS Discussion Lists Study, Table 16.
- ²⁹ Appendix E. LINCS Discussion Lists Study, Table 17.
- ³⁰ Appendix E. LINCS Discussion Lists Study, Table 17.
- ³¹ Appendix E. LINCS Discussion Lists Study, Discussion Lists Moderators Interviews Summary, pp. 11-13.
- ³² Appendix E. LINCS Discussion Lists Study, Table 18.
- ³³ Appendix E. LINCS Discussion Lists Study, Tables 17 and 19.
- ³⁴ Appendix E. LINCS Discussion Lists Study, Table 17.
- ³⁵ Appendix E. LINCS Discussion Lists Study, Table 20.
- ³⁶ Appendix E. LINCS Discussion Lists Study, Table 21.
- ³⁷ Appendix D. *Content Analysis of Discussion Lists*, page 29.
- ³⁸ Appendix E. LINCS Discussion Lists Study, Table 22.
- ³⁹ Appendix E. LINCS Discussion Lists Study, Table 23
- ⁴⁰ Appendix E. LINCS Discussion Lists Study, Table 24
- ⁴¹ Appendix E. LINCS Discussion Lists Study, Table 24 and 25
- ⁴² Appendix E. LINCS Discussion Lists Study, Table 24.
- ⁴³ Appendix E. LINCS Discussion Lists Study, Table 26.
- ⁴⁴ Appendix E. LINCS Discussion Lists Study, Table 27
- ⁴⁵ Appendix E. LINCS Discussion Lists Study, Table 17.
- ⁴⁶ Appendix E. LINCS Discussion Lists Study, Table 28.
- ⁴⁷ Appendix E. LINCS Discussion Lists Study, Table 29.
- ⁴⁸ Appendix E. LINCS Discussion Lists Study, Discussion Lists Moderators Interviews Summary, pp. 16-17.
- ⁴⁹ Appendix E. LINCS Discussion Lists Study, Table 30.
- ⁵⁰ Appendix E. LINCS Discussion Lists Study, Table 31.
- ⁵¹ Appendix E. LINCS Discussion Lists Study, Table 32.
- ⁵² Findings in this section are from Appendix B, *LINCS Cost Analysis Report*, pp. 30-32.

IV. Regional Technology Centers Study

Introduction and Research Questions

As part of the Comprehensive Review and Analysis, NIFL asked RMC to conduct a review of its grant-funded Regional Technology Center (RTC) grantee program: structure, operation, and activities, including work to develop and support the LINCS online infrastructure and the establishment of collaborative relationships at the state and local level. The study also examined the RTC grantees' use of technical assistance and training to support LINCS and encourage its widespread adoption by the adult education and literacy community.

RMC developed the following study questions for this study:

1. What is the purpose or function of the Regional Technology Centers, partners and affiliates?
2. What is the organization and structure of the RTCs?
3. What are the activities and services of the RTCs?
4. How effective is the RTC grant program?
5. How cost-effective is the RTC program?

Methodology

RMC conducted a descriptive study of the Regional Technology Center grantee program using primarily qualitative data supplemented by information obtained from surveys. Data were collected from several sources to provide similar information from a variety of stakeholders. This approach allowed for some triangulation to confirm factual information while ensuring that different points of view were included in the analyses.

Document and Website Review

During Spring 2004, RMC reviewed documents about LINCS and the RTC program found on the LINCS website, and information such as budgets and pilot project descriptions requested from RTC directors. RMC staff also reviewed the websites developed by each RTC grantee and websites of partners and affiliates.

Interviews with LINCS/NIFL Stakeholders

RMC staff conducted telephone interviews with LINCS and NIFL staff, NIFL board members, directors of the Regional Technology Centers, and staff at agencies and organizations collaborating with the RTCs. These interviews collected information about the purpose, structure, and implementation of the grant, and interviewees' assessments of the RTC grantee program. For more information about these interviews, please refer to Appendix A, Technical Information on Methods.

Surveys of LINCS Users

RMC administered three surveys to users and non-users of the LINCS website that asked questions about the RTCs. In one survey general public visitors to the LINCS website were randomly invited to link to an online questionnaire. A second survey solicited volunteer respondents from adult education/literacy professional membership organizations by e-mail to complete the online questionnaire. To obtain responses from the part of the adult education/literacy field that may not use computers frequently, we also mailed a questionnaire to randomly selected adult education programs. The survey asked several questions about participation in LINCS activities in addition to using the website, including use of RTC technical assistance and websites. For more details about these surveys, see Appendix A, Technical Information on Methods.

Cost Analysis of RTC Grantee Program

As part of KPMG's cost analysis of LINCS, RMC asked KPMG to conduct an analysis of the RTC grant program. KPMG used market comparability analysis to compare the cost of operating the RTCs to that of for profit, public companies that provide similar services. Using their extensive database of public, for profit companies, KPMG selected a subset of 22 companies that conduct services similar to those provided by the RTC grantees.

Using a methodology called the Berry Ratio, used to determine the appropriateness of economic profits earned relative to the economic risks assumed, KPMG calculated the ratio of gross profit

to operating expenses. Ratios were calculated for each of the 22 companies and, for the entire list, the median and interquartile ranges were identified. These results were used to determine the additional resources that would be required to induce a for-profit company to provide the range of services provided through the RTCs. Details of this methodology are described in the full report, *LINCS Cost Analysis*, located in Appendix B.

Findings

1. What is the purpose or function of the Regional Technology Centers (RTCs), partners, and affiliates?¹

- **The purpose and priorities of the RTCs have evolved over time in response to legislation and strategic planning processes within NIFL and LINC S.** In its ten years of existence, the Regional Technology Center program has gone through several phases as a result of changing federal legislation and NIFL's subsequent internal strategic planning processes to determine LINC S's specific goals and objectives. As the vision for LINC S has evolved, NIFL's expectations and requirements for RTC grantees have changed as well, affecting both the structural design of the program and its implementation through activities and services.
- **Program goals and objectives have moved away from emphasizing links to adult education/literacy information resources toward creating an interactive system of information.** LINC S was NIFL's response to the National Literacy Act of 1991 requirement that NIFL establish "a national data base" and provide "technical and policy assistance to government entities for the improvement of policy and programs relating to literacy and the development of model systems for implementing and coordinating Federal literacy programs that can be replicated at the State and local level..."² LINC S staff interpreted the requirement broadly in its own vision statement as linking "existing state, regional and national networks and educational databases to provide the adult literacy community with interactive links to information resources from federal, state, and local public and private sources."³

The Workforce Investment Act of 1998 changed NIFL's mandate for LINC S, authorizing it to "establish a national electronic database of information that disseminates to the broadest possible audience within the literacy and basic skills field," and to "create a communication network for literacy programs, providers, social service agencies, and students."⁴ NIFL responded with a plan for LINC S that broadened its focus from adult and basic education to include programs that address literacy across the lifespan, and emphasized expansion of the system. The diverse target audiences remained unchanged, although adult education practitioners, i.e., teachers, tutors, and administrators, were given the highest priority.

The new focus also emphasized technology with the Regional Technology Center grant program planned as the means to do accomplish this goal. Through the RTC grants, LINC S would expand by using the Internet and Web-based information and by promoting LINC S in the adult education/literacy field, particularly for professional development and classroom purposes. No longer simply linking and facilitating users' access to existing databases and information, LINC S was recast as a creator of new information and services, "a comprehensive source of original, full-text information and learning content, a sophisticated search capacity for Internet-based literacy-related information and content, electronic discussion lists, and training and technical assistance in the use of technology."⁵

- **RTC technical assistance and training has evolved from helping state-level users learn about and access the LINCS website to providing a range of support activities to multiple user groups.** LINCS staff recognized that implementation of LINCS would “require collaboration...technical assistance, training, and support; funding...; federal interagency support; and sensitivity and responsiveness to the changing needs of the field.”⁶ The initial plan set up regional “Hubs” or centers to serve groups of state and local programs. The Hubs, working with federally funded State Literacy Resource Centers, provided state education agencies with extensive resources from outside their state-funded programs.

The establishment of the RTC program five years later created an opportunity to establish formal partnerships with those state and local agencies and organizations. The RFP for the program identified as its goal to “include the broadest range of national, state, and local partners,” and “extend the knowledge and use of LINCS websites, infrastructures, resources, and services throughout the state and local adult education and literacy communities in each region.”⁷ Rather than grantees freely giving resources to state programs, the RTC grant program set up a system in which the grantees re-grant funds and/or collaborate with their partners so that the partners do most of the work of developing and delivering technical assistance, training, and development of products to their constituencies. Extending the number and type of organizations that are involved in the delivery of technical assistance and training beyond state agencies has expanded the reach of LINCS, allowing for the delivery of services to learners, instructors, administrators at all levels and in public and private organizations.

- **As the technological sophistication of LINCS has grown over time, the RTC program has become more oriented toward technology and building the capacity and resources of the adult education/literacy community to use and apply LINCS.** LINCS was created when the Internet was in its infancy. However, with the mandate of the WIA to establish an “electronic database,” the LINCS staff at NIFL had the foresight to see the advantage that basing this database in the Internet and Web-based resources could bring to the adult education/literacy field: [LINCS should be] “a comprehensive source of original, full-text information and learning content, a sophisticated search capacity for Internet-based literacy-related information and content, electronic discussion lists, and training and technical assistance in the use of technology. [LINCS should] keep abreast of new technological developments and implement state-of-the-art technology”⁸

One of the goals that developed from this new focus was to “assist the adult education and literacy community in integrating LINCS resources and new technology into teaching and staff development.” Funding was provided to the RTCs to “implement comprehensive regional training plans in the use of LINCS and technology that will result in effective integration of technology in teaching and learning.”⁹ With the adult education/literacy community frequently described as technologically backward, lacking the resources to build its own capacity in this area, the RTCs were put into a position to fill a critical gap in resources for the field.

2. What is the organization and structure of the RTCs?¹⁰

- **The RTC grant program is managed by NIFL and its LINCS staff, and implemented by the Regional Technology grantees.** NIFL and LINCS staff set goals and objectives for the project. They develop RFPs and subsequent continuation proposals as guidelines to grantees and monitor grantees' program implementation. The Regional Technology Centers are responsible for carrying out LINCS goals and objectives in their regions, choosing strategies appropriate to their region, needs, and organization, and responding to the grant's administrative requirements.

RMC found in its review that the RTC grantees possess expertise in adult education and literacy and technology. Three of the RTC grantee organizations are less dependent on LINCS than the other two RTCs for funding and support. Funding to Partners is either for ongoing collaboration or for more limited special projects.

All RTCs are expected to establish and maintain formal relationships with states, particularly the major literacy agencies or organizations, and act as intermediaries in the field for the national LINCS office. Each RTC develops and manages its regional website, develops and implements training and technical assistance in its region, collects local materials for the LINCS database, and works on other LINCS or technology-related projects, all usually in collaboration with its state and local partners.

- **The most common and frequent outcomes of program grantees have been their work on the expansion of the physical and technological infrastructures of the LINCS program.** A former director of NIFL said: "Rather than funding a contractor where knowledge disappears with the contractor, they wanted to build an infrastructure at the state level. They wanted Hubs to act as ambassadors to the field. They wanted the states and local programs to know what LINCS was and to care about it. By funding it through the Hubs, LINCS was not 'sitting in DC' – it was 'out there.'" The Hub program put LINCS into the field; the RTCs linked the field together, is the way most NIFL staff and RTC directors describe the change in organizational structure that resulted from the RTC program.

From the four Hubs, LINCS has grown to five Regional Technology Centers: Eastern, Midwest, Southern, Northwest, and Western/Pacific, with partners in all 50 states and territories. RMC found that all of the RTCs have some active state partners and some affiliates, but that these collaborators participate in LINCS in a variety of ways and degrees. Partners tend to have the most formalized relationships with their RTC, some with written memoranda of understanding setting out roles and responsibilities for the partnership. Others have less formal relationships with their RTCs. Affiliates, typically local adult education organizations, have the least formal collaborative arrangements with their RTCs.

Some partners have developed their own partnerships, collaborations, and affiliations with literacy organizations and programs in their states and regions. The majority of these partners are networked together electronically and with the RTCs and the National office through their agencies' websites on the Internet. In most cases, when users talk about LINCS, they are talking about this electronic network of websites, not necessarily the people

working in the organizations that manage the websites. However, the electronic and human networks are, to a large extent, interconnected.

The Regional Technology Centers work with their partner and affiliate agencies and organizations to meet the grant's goals and objectives. NIFL defines the expectations of roles and responsibilities of partners and affiliates for the Regional Technology Center grantees. However, because of practical distinctions between agencies and organizations and their states, each partnership has been defined differently and each RTC has developed a particular approach or style in working with them. For example, Midwest and Southern take a more institutional approach; Northwest and Western/Pacific are more entrepreneurial and independent. Eastern LINCS does not have stable partnerships at this time.

The RTC grantees have built the electronic infrastructure by creating their own regional websites and assisting partners and affiliates in creating their own websites, all linked to national LINCS website and databases. All five RTCs were asked to adopt a standardized template of the national website and have encouraged their partners and affiliates to do the same. These websites share a set of components, for example, the LINCS search engine, links to the LINCS Discussion Lists and Special Collections, and links to pages of resources of various kinds. By using the same design features and content, the linked websites have a uniform "look" across all of LINCS, although RMC found that all of the RTCs vary some from the template in both design and content. The appearance and content of Partner websites vary from region to region and from partner to partner, and about one-half of the partner sites have adopted the LINCS template.

3. What are the activities and services of the RTCs?¹¹

- **The RTC grant program has tried to fill a demand for technology and resources in the adult education field, resulting in a broad, diverse program of activities.** Since 1999, in addition to building the organizational and electronic infrastructure of LINCS, the principal work of the RTCs has been:

1) training people in the adult education/literacy field through workshops at conferences, meetings, and online, in the use of LINCS and technology for the purpose of integrating technology into their programs, teaching, and learning;

2) increasing awareness of LINCS and its resources and services through conferences, presentations, and public relations, to various potential LINCS audiences to ensure that the system and its resources are used;

3) locating, organizing, and creating new high quality materials and resources for LINCS, especially the Special Collections, to expand and keep current the resources available to the field;

4) connecting with a broad array of literacy stakeholders, primarily through the LINCS Discussion Lists, but also through presentations and meetings; and

5) building tools and methods for evaluation through special or pilot projects, to demonstrate the impact of LINCS.¹²

Technical assistance is not stated as a specific objective of the program but is assumed in LINCS documents to be one of the activities necessary to achieve the goals of the program, particularly in the early years of the program when knowledge and use of technology in the adult education/literacy field was limited. RTCs provide technical support to their partners and others in the use of the LINCS website, computer hardware such as servers, and software applications. They also work with partners in the development of technological solutions to problems in the field.

With a few modifications, these are all still the primary objectives of the program. In the last few years, RTCs have been asked to place greater emphasis on family as well as adult literacy, and to build the knowledge base of the field by collecting research or evidence-based materials on basic skills instead of collecting locally developed materials.

- **All Regional Technology Centers and their Partners conduct a range of LINCS trainings and technical assistance activities.** The shift from Hubs to Regional Technology Centers in partnership with state agencies and organizations created a range of LINCS and technology-related training and technical assistance opportunities to members of the adult literacy field. RMC found that the primary recipients of training were instructors, but administrators, professional development personnel, and to a lesser degree, students, also participated in trainings. RTCs report mixed success in formalizing training, i.e., establishing training teams, institutionalizing training in state plans, and incorporating training into college programs. However, many RTCs and/or their partners have collaborated on pilot projects to test out training courses and programs developed using technology and the support of LINCS.

Technical assistance is offered on demand to RTC Partners and others. RTCs provide an extensive array of assistance. They report that they provide help with website development and design, technology planning for state technology plans, website and discussion list hosting, computer hardware setup and support, audio/videoconferencing, and database and collaboration software instruction.

- **All RTCs have been active in establishing discussion lists and other means of communication for users at the state level.** As extensions of their training and technical assistance services, regional grantees provide a number of services to facilitate communication and community-building. RTCs have developed private listservs particularly for professional development and for class projects. They have introduced new Web-based communication tools to literacy stakeholders and trained them in their use. RTCs and their Partners have piloted bulletin boards, audio/video conferencing and networking, and virtual workspace programs in several regions. They report that these have been met with mixed success as users are often slow to adopt these new technologies.
- **Locating and disseminating resources through the LINCS network to enhance the knowledge base of the adult education/literacy community is another activity of all the RTCs.** In collaboration with partners, RTC grantees are expected to identify, catalogue and/or Web-publish materials for the LINCS databases and Special Collections, seven of which are funded and operate through an RTC. These materials may be posted on regional

or state sites and/or forwarded to members of the Special Collections team for review and publication. Grantees have developed informal systems for collecting these resources and are engaged in creating more formal plans. Partners vary in their level of involvement in this work. In the last two years, NIFL has encouraged the RTCs and their partners to collect and develop research or evidence-based materials. RTC directors voiced a mix of responses to this change: some support it, while others are concerned that the new criteria do not match practitioner needs.

- **The online LINCS materials and resources are widely considered the most valuable aspect of LINCS by those who work for or are affiliated with LINCS.** As one partner noted, “The adult education teacher has such limited time to get resources. LINCS has put it in one place for them.”

4. How effective is the RTC grant program?¹³

RMC looked at two dimensions of program effectiveness in reviewing the Regional Technology Centers: program functioning and program achievement. Program functioning, i.e., how well the RTCs operate, includes program management and implementation, grantee-funder relationships, grant requirement performance, and program sustainability. Program achievement is how successful the program has been in achieving its goals and objectives and supporting the mission and goals of NIFL.

- **Management and implementation of the RTC grant program was generally satisfactory.** RMC found no evidence of serious problems in the way RTC grant program has been managed or implemented. The most frequently cited problems do not concern grantees but their partner agencies. Some RTCs face stagnant participation by states and organizations with the RTCs finding it difficult to recruit more partners than their initial group or expand beyond the programs they usually serve. Turnover among state employees was reported to be a major problem, requiring grantees to deliver the same LINCS awareness trainings to the same agencies repeatedly, and interfering with collaborative relationships developed with individual personnel. At the classroom level, turnover in instructors and student populations, limited technology resources available locally, and constraints on time available to participate in professional development and/or lack of interest were all raised as chronic problems in the adult education and literacy field. RTCs directors and their partner colleagues said that all of these issues impact both the quality and frequency of the training and technical assistance that the RTCs and their Partners can provide to the field.
- **RTC grantees have lacked information about the future of LINCS and a clear system to help them report the consistent information needed for monitoring and evaluation .** Some grantees expressed anxiety and concern about the lack of direction and leadership coming from the national LINCS office. The recent shift of emphasis toward collecting research-based materials was often cited by RTC directors as an example of a policy change coming down to the grantees from above without guidelines to help them with its implementation.

RMC found that the national LINCS reporting requirements have not emphasized collecting uniform data across all grantees and systems are not in place for easily summarizing such data even if it were collected. Reporting has instead emphasized implementation goals and outcomes rather literacy outcomes or impact. Grantee-developed evaluations have been based on anecdote, focus groups, or one-shot surveys and there has been no cross-site external evaluation.

- **Relationships between the NIFL staff and the RTC grantees have been generally active and positive.** Four of the five RTCs reported no difficulties in the past. Partners and affiliates have little contact with NIFL staff and rely on the RTCs to act as their intermediaries. Interactions between the RTC grantees and their partners are less active and more service oriented. For example, more than half of the partners RMC interviewed described their interactions with the RTCs in terms of a consultant-client relationship, with the RTCs providing technical assistance and training services to the partner agencies.
- **RTCs' performance with regard to their grant requirements have not been a problem.** Interviews with LINCS staff indicated that with one exception a few years ago, grantees have generally fulfilled their grantee responsibilities.
- **RTC program sustainability was believed to be an open question.** The future of LINCS was much on the minds of all those we interviewed and concern about how LINCS could or would continue was an issue for NIFL staff and RTC grantees alike.

RMC has found, through our interviews and surveys, that the RTC program has been successful in achieving most of the LINCS goals and objectives. The grantees and NIFL program staff have addressed or continue to address all of the goals and objectives of the program through their grant activities.

- **The RTCs have successfully expanded the LINCS network to include a broad range of national, state, and local partners.** Many of these participants in the RTC program brought with them or have developed over time expertise in adult education/literacy and technology, a combination that is unusual and has added capacity to the adult education/literacy field.
- **The RTCs, with National LINCS, have built a successful and extensive network of linked websites, unique in the field of adult education/literacy.** A shared template has brought some sense of uniformity to the network, reinforcing a sense of community among users. Evidence from the Webtrends reports on "hits" to the website indicate that visits to the regional websites have increased over time, although the average length of visits has not changed over time.
- **The RTC program has been successful in extending the knowledge and use of the LINCS websites, infrastructure, resources, and services throughout the state and local adult education and literacy communities in each region.** All the RTCs conduct trainings, provide technical assistance and services, and disseminate information and resources about LINCS.

Their work has had some effect on the adult education/literacy community. Of the 470 respondents to our surveys of members of adult education/literacy professional organizations and ABE program administrators and instructors, 73% said they had heard of the LINCS website. Over one-half (55%) said they had used LINCS.¹⁴

As noted earlier in this report, most LINCS users learn about LINCS on the Internet, while at a website or when searching. However, some users in our survey said they learned about LINCS from RTC-related activities. Out of 424 respondents, 26% had learned about LINCS from conference presentations or workshops. A NIFL/LINCS brochure or written material, which could have been obtained at a presentation or workshop, was the source for 18% of respondents.¹⁵

About one-third (34%) of 229 respondents indicated that they had attended a LINCS presentation at a conference and one-quarter (24%) had attended a LINCS training. One-fifth (20%) had received technical assistance from LINCS staff.¹⁶ Most of those who had participated in these activities said that the activities contributed to their professional skills and knowledge.¹⁷

- **The RTCs have also assisted the field in integrating LINCS resources and new technology into classroom instruction and staff development.** We found some evidence for this capacity-building in our survey of LINCS users. About 12% of those responding said they had made presentations or held a training for others about LINCS, and 14% said they had contributed information and materials to be posted on LINCS. Although some of these people undoubtedly were LINCS stakeholders (10% of respondents said they had volunteered or been employed by LINCS or a LINCS-funded organization and 15% had participated in committees advising LINCS or LINCS-funded organizations), their participation in these activities lends support for the program's success at extending knowledge of LINCS.¹⁸

Partners and RTC directors said that the free technical assistance provided by RTCs is one of the most valued aspects of LINCS. In some cases, partners are now able to maintain their own websites and servers, and provide technical assistance to others. Collaborations between RTCs and partners have resulted in a number of pilot projects to develop products integrating technology and LINCS resources into teaching and instructor training. Both of these activities suggest that RTC technical assistance is helping to build capacity in the field, particularly skills and knowledge of technology, and understanding of and support for technology infrastructure, i.e., hardware and software.

- **Contribution to the literacy field's electronic resource base by creating, collecting, and organizing new high quality literacy information online is the area in which the RTCs have contributed least to LINCS.** All of the RTCs, and partners to a much smaller degree, locate and disseminate resources or links to resources through the LINCS network. However, compared to their training and technical assistance activities, they do much less of this work, according to their own reports. The additional emphasis on collecting the less commonly available research or evidence-based materials has made this task even harder, according to several RTC directors.

New goals for NIFL and LINC S focused on reading, research, and literacy across the lifespan provide opportunities for the RTCs to move in new directions. However,

- **It is too early to determine whether the RTCs have contributed to the new emphasis within NIFL and LINC S.** The fact that expanding content has been less of a priority for the RTCs than expanding their infrastructure and providing training and technical assistance is one indication that there has been little movement in this area. Also, as noted above, the RTC Directors reported that they have received little guidance in how to address these new goals. Consequently they told us that they have chosen to be cautious rather than to act prematurely, without clear directions from the national office.

5. How cost-effective is the RTC program?¹⁹

- **Four of the RTCs conduct operations with very similar total operating budgets.** The amount is approximately \$170,000 per year for the four RTCs. A fifth RTC, Eastern LINC S, has half that amount because it is operated by Midwest LINC S with funds coming through the Midwest grant.
- **The role played by human capital in the operations of the RTCs is critical to their operations.** Based on fifth-year budgets, fully-loaded labor represents anywhere from one-third of the budget to 71 percent.
- **In-kind goods and services play a not insignificant role in the RTC operations.** Many additional hours are provided for center operations than are reflected in the budgets, particularly by RTC personnel.
- **It is unlikely that for-profit firms could be induced into providing the same set of services as the current RTCs without a substantial increase in funding.** Basing their analysis on five years of data from 22 comparable firms, KPMG estimates that the median company would require a minimum of 150 percent of the current average RTC budget to be induced into providing the same set of services as the current RTC programs. This is because of the significant in-kind services that the RTCs have been able to leverage. Further, even if the operations of the centers were to be replicated by a non-profit structure, with normal economic returns to management, the level of additional resources required to be raised could be reasonably expected to exceed the current level of NIFL funding.

Conclusions and Recommendations

The purpose and priorities of the RTCs have evolved over time in response to legislation and strategic planning processes within NIFL and LINCS. Program goals and objectives have moved toward creating an interactive system of information. Technical assistance and training has evolved providing a range of support activities to multiple user groups. Overall, the program has become oriented toward building the capacity of the adult education/literacy community to use and apply LINCS and technology.

The RTC grant program has attempted to fill the need for technology in the adult education field resulting in a broad, diverse program of activities in which RTCs conduct a range of LINCS trainings and technical assistance. RTCs have established local discussion lists and other means of state-level communication and enhanced the knowledge base of the adult education/literacy community by locating and disseminating resources through the LINCS network.

The RTCs have created a successful and extensive network of linked websites that now includes a broad range of national, state, and local partners. The program has been successful in extending the knowledge and use of the LINCS websites, infrastructure, resources, and services throughout the state and local adult education and literacy communities in each region. The RTCs have also assisted the field in integrating *LINCS* resources and new technology into classroom instruction and staff development. Furthermore, the RTCs do all of this at a price that may be difficult to replicate in the for-profit world or even by most non-profits.

However, as the RTC program has expanded its activities in the adult education/family literacy field, NIFL has shifted its focus, emphasizing literacy fundamentals and research and their application to the full range of ages and educational settings. RTC grantees have been caught in this transition, needing more communication from NIFL about what is expected of them and how they can contribute their skills and resources to the new mission. They have also lacked an effective system of monitoring and evaluation that could help NIFL learn what effects RTCs are having in the field and guide them in making choices about the future of the program.

In light of the above conclusions, RMC recommends that NIFL undertake the following efforts:

- **Establish ongoing, collaborative, and open internal discussions at NIFL and with grantees about the future of the RTC program, its goals, objectives, and activities, and how it supports/relates to NIFL's mission.** Institutional communications to RTCs about their evolving roles should be clear and frequent. RTCs have expressed interest in a more vital role in these "mission level" discussions. Occasional opportunities for RTC representatives to meet and talk with NIFL administrators and board members may be useful during this transition period.
- **Move forward with changing the focus of the RTC program away from building more infrastructure and technology-focused technical assistance toward education/literacy content-related technical assistance.** Should NIFL decide to continue some form of technical assistance related to LINCS, it needs to consider and productively debate the content focus of that assistance. Given NIFL's goal of promoting scientifically based

information, we believe that the “next generation” of technical assistance could support this goal by using local and regional support resources to help educators become better consumers of the material available through LINCS. This would mean shifting away from the technical matters of accessing and using LINCS and technology, to an emphasis on helping educators understand the nature, types, and relative quality of resources in LINCS; how to “assess” their quality and value to the field; and how to best use them. A name change in the program could reinforce the new focus, e.g., Regional Teaching Quality Centers, or Quality Information Dissemination Centers. This type of system might require a cadre of technical assistance providers who have a different skill set and knowledge base than the current RTC personnel, or it could be some combination of existing personnel and new experts. However, the idea mirrors other current federal efforts to use technical assistance more effectively, such as the National Reading First Technical Assistance Center (with three regional offices), where the focus has been placed squarely on improving instructional quality and related activities such as assessment and professional development.

- **Focus efforts and resources.** While developing a new focus for the RTC and other LINCS programs, NIFL will also be refining and reworking its commitments to constituents. It is important that NIFL keep in mind during this process that it cannot solve all of the problems of adult literacy and other adult instruction, as well as serve the broad spectrum of audiences in the family literacy, early childhood, elementary, and secondary education fields. This means thoroughly considering how limited funds can be used to keep LINCS programs directly serving core NIFL goals and values.
- **Let the goals and objectives of the program determine the structure for implementation, rather than the other way around.** From our cost analysis study, we learned that the current RTC organizational structure is a relatively cost effective means of providing training and technical assistance in the field. With the addition or replacement of personnel more suited to the content-related technical assistance activities described above, the system, with its existing network of human and organizational contacts already well-established, could potentially provide an effective means for supporting a set of new goals and objectives for LINCS. However, just because the RTC system is already in place is not reason enough to continue using regional centers. Defining the purpose of a new program, i.e., its goals, objectives, and activities, is the prerequisite for defining the organizational structure needed for implementation. Such a structure could be a national center with regional offices, or a center or contractor providing support directly to all states, or some other configuration.
- **Base the choice of organizations to participate in the program on their capacity to leverage in-kind services and resources as well as their mission, skills and expertise,** since this has been a significant reason for the RTCs’ cost effectiveness. Once the program is operating, formally collect data on and regularly review the value of the in-kind goods and services leveraged by the program and communicate this value to stakeholders.
- **Improve accountability, either through strengthening grant reporting or using contracts.** Once program purpose, goals, and objectives have been defined, and a model for implementation chosen, determine the appropriate level of accountability desired for the

program. Either grants or contracts can hold award recipients accountable, depending on what is written into the agreements. However, accountability will only be successful if there are clear and carefully followed protocols for communication between grantees/contractors and NIFL/LINCS staff. The content of such protocols should emphasize accountability beyond counts of events, participants, and lists of activities, and demonstrate the relationship between a program's action and expected program outcomes, particularly as related to the LINCS goals and objectives.

- **Develop internal procedures and protocols for helping program staff recognize, respond to, and prepare for both short- and long-term changes in configurations and roles.** Without procedures and organizational guidance, LINCS and the RTC system/new program can fall victim to mission “drift,” i.e., default to the visions of individuals with strong personal views about how the system should operate and what it should accomplish, resulting in slow responsiveness to shifts in institutional priorities.
- **Engage NIFL stakeholders—administrators, NIFL staff members, and RTC/new program staff, and state representatives—in a discussion on ways to define, develop, and implement an evaluation system.**
- **Condense the material on the use of LINCS into fewer but more useful products and disseminate them nationally.** A great amount of energy and resources have been invested in creating tutorials, instruction manuals, CDs, and training sessions on how to use LINCS. Take an inventory of current LINCS access and usability materials, selecting the best of what is available to create materials that are more packaged, targeted, and easier to use. Issues about access to and easy use of LINCS are not only a function of training but also of the design of the system itself.

Notes

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- ¹ Interim Report *Review of LINCS Regional Technology Centers Grant Program*, pp. 8-15.
- ² National Literacy Act of 1991. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 3.
- ³ LINCS Vision Statement of 1993. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 4.
- ⁴ Workforce Investment Act of 1998. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 5.
- ⁵ LINCS Vision Statement of 1999. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 6.
- ⁶ LINCS Vision Statement of 1993. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 4.
- ⁷ RTC Request For Proposals, 1999. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 8.
- ⁸ LINCS Vision Statement of 1999. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 6.
- ⁹ RTC Request For Proposals, 1999. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 8.
- ¹⁰ Interim Report *Review of LINCS Regional Technology Centers Grant Program*, pp. 16-45.
- ¹¹ Interim Report *Review of LINCS Regional Technology Centers Grant Program*, pp. 46-69.
- ¹² RTC Request For Proposals, 1999. Interim Report *Review of LINCS Regional Technology Centers Grant Program*, Appendix, Document 8.
- ¹³ Interim Report *Review of LINCS Regional Technology Centers Grant Program*, June 3, 2004 draft, pp. 70-93.
- ¹⁴ Appendix F. LINCS Regional Technology Centers Study, Table 1 and Table 2.
- ¹⁵ Appendix F. LINCS Regional Technology Centers Study, Table 3.
- ¹⁶ Appendix F. LINCS Regional Technology Centers Study, Table 4.
- ¹⁷ Appendix F. LINCS Regional Technology Centers Study, Table 5.
- ¹⁸ Appendix F. LINCS Regional Technology Centers Study, Table 4.
- ¹⁹ Findings in this section are from Appendix B. *LINCS Cost Analysis*, pp. 15-21, 33-39.

V. Special Collections Study

The LINCS Special Collections (SCs) is a set of topical databases of vetted adult education/literacy resources accessible to the public through the National Institute for Literacy's LINCS website¹. As part of the Comprehensive Review, NIFL asked RMC to examine the content and management of the collections.

Introduction and Research Questions

The following questions guided the study:

Structure and Procedures

1. What are the LINCS Special Collections?
2. How are the Collections organized and managed?
3. What are the selection criteria and procedures?
4. How effective are the selection criteria and procedures?

Users

5. Who uses the Special Collections?
6. How often do they visit the Special Collections?
7. What is the value of the Special Collections to users?

Content

8. What is the content of the Special Collections?
9. To what extent is the content high quality or based on research?

Cost effectiveness

10. How cost-effective are the Special Collections?

Methodology

RMC relied on several different sources of information to obtain different perspectives and knowledge of the Special Collections. They included reviews of LINCS documents and LINCS Special Collections websites, telephone interviews with stakeholders, user surveys, and a cost analysis of financial data.

Document and Website Review

During Spring 2004, RMC reviewed documents about LINCS and the SCs program found on the LINCS website, and budgets and other information requested from SCs directors. RMC staff also conducted a content analysis of the documents that are contained in the Special Collections to determine the types of materials found in the SCs, and the amount and balance of these types of materials across the collections.

Surveys of LINCS Users

RMC administered four surveys in spring, 2005 to users and non-users of the LINCS website that asked questions about Special Collections. In one survey visitors to the LINCS website were randomly invited to link to an online questionnaire. A second survey solicited volunteer respondents from adult education/literacy professional membership organizations by e-mail to complete the online questionnaire. To obtain responses from the part of the adult education/literacy field that may not use computers frequently, we also mailed a questionnaire to randomly selected small, medium, and large adult education programs. Discussion List subscribers also received a link to an online questionnaire. The survey asked several questions about use and value of the Special Collections. For more details about these surveys, see Appendix A, Technical Information on Methods.

Interviews with LINCS/NIFL Stakeholders

RMC conducted telephone interviews with LINCS and NIFL staff, board members, and LINCS SCs directors. These interviews collected information about the purpose, structure, and implementation of the SCs program, and interviewees' assessments of the SCs program and operations. For more information about these interviews, please refer to Appendix A, Technical Information on Methods.

Cost Analysis of RTC Grantee Program

As part of KPMG's cost analysis of LINCS, RMC asked KPMG to conduct an analysis of the SCs grant program. The methodology used to analyze the SCs grantees was the same as that used for the RTC grantees. See the Methodology section in Chapter IV, Regional Technology Study, for a description or for full details, see *Content Analysis of Discussion Lists*, is available in this report in Appendix D.

Findings

Structure and Procedures

1. What are the LINCS Special Collections?²

The Special Collections databases contains reviewed documents and website links to adult education and literacy resources and programs, organized around twelve specific content areas related to adult education/literacy. RMC was asked to review ten of these Special Collections, those that receive funds from NIFL. The following is a list of these ten collections followed by the grantee agency responsible for managing them:

- **Assessment** - Midwest LINCS at the Ohio Literacy Resource Center
- **Correctional Education** - Correctional Education Association, Lanham, Maryland
- **English as a Second Language** - California Literacy Inc., Laubach Literacy Action, Western Pacific LINC's, and World Education, Inc.
- **Family Literacy** - Midwest LINCS at the Ohio Literacy Resource Center
- **Health and Literacy** - World Education, Inc., Boston, MA
- **Literacy and Learning Disabilities** - Southern LINCS at the Center for Literacy Studies, University of Tennessee
- **Program Leadership and Improvement** – Southern LINCS at the Center for Literacy Studies, University of Tennessee
- **Science and Numeracy** - Western Pacific LINCS
- **Technology Training** - Adult Literacy and Technology Network and the Sacramento County Office of Education
- **Workforce Education** - Southern LINCS at the Center for Literacy Studies, University of Tennessee

The other two collections on the LINCS website are Equipped For the Future, formerly managed by NIFL and now managed directly by the Center for Literacy Studies at the University of Tennessee under a special arrangement with NIFL; and the Policy and Legislation collection, managed directly by NIFL staff.

- **Each Special Collection has a director, called the Content Development Partner, who directs the maintenance of that SC. The director works with a materials review committee of 6-12 members, called the Core Knowledge Group (CKG), with expertise in the specific content area of that collection.** The Core Knowledge Group members act as advisors to the collection's director, assisting in the review and selection of appropriate resources or Internet links to resources in the field of adult education and literacy to include in the database for that Special Collections website.

- **The primary purpose of the LINCS Special Collections is to provide relevant quality resources to the adult education/literacy field through a single point of contact on the LINCS website.** This purpose of the collections has remained constant since their inception in 1994. The Special Collections program is one of several ways, in addition to the RTC program and the Discussion Lists, that NIFL has responded to its legislative mandate to disseminate resources electronically to the adult education/literacy field.

2. How are the Collections organized and managed?³

- **Each Special Collections grantee is housed within larger organization that acts as its fiscal agent.** All of these organizations share a common purpose: to provide support, training and resources to the field of adult education/literacy. The organization receives approximately \$50,000 from national LINCS, and a few receive additional funding from the U.S. Department of Education, Office of Vocational and Adult Education (OVAE) to carry out additional functions for unique audiences.
- **National LINCS staff members provide frequent guidance to SCs grantees on management of their collections.** They developed guidelines for managing the Special Collections and have posted these on a private “swap page” website on LINCS that also has documents and reports relevant to the grantees. LINCS also operates a closed listserv for discussion and sharing of information between the SCs directors and with national LINCS.
- **A LINCS Regional Technical Center or other technology organization provides the technology functions to support each collection.** These include housing the SCs database on a server, hosting and maintaining the Special Collections website, managing HTML conversions of materials, providing graphic capabilities, and keeping web statistics on visits to the collections.
- **The Content Development Partners, i.e., SCs directors, have both grant management and content development responsibilities.** They report to NIFL, recruit and manage the Core Knowledge Group members and their work, collaborate with national LINCS to revise collections selection criteria, oversee fiscal accounting, and participate in meetings. They also oversee content development functions including management and review of resources, monitoring the collection and its website, and networking and marketing of the SCs to the adult education/literacy field.
- **The Core Knowledge Group is a voluntary advisory group of content experts who provide input and advice on the direction and content of each SC.** Members are selected by the SCs directors for their knowledge of adult education/literacy and expertise in the particular SC’s content area. They are also selected for geographic and organizational diversity. RMC found that virtually all the CKG members that we interviewed had held professional and/or advocacy positions in the adult education field linked to the particular topic area of their collection. Many had begun as adult education instructors and had advanced into leadership, technical assistance, research, and professional development positions. Over one-half (57%) of members are affiliated with four-year colleges and universities (30%), national literacy organizations and government agencies (16%), and state

literacy centers and adult learning resource centers (12%). Others come from professional associations, consulting firms, colleges, business, foundations, and media, or organizations associated with the topic of their collection, e.g., correctional facilities or health organizations.

3. What are the selection criteria and procedures?⁴

- **Resources for the SCs are vetted before inclusion using several sets of criteria developed by LINCS staff in collaboration with the directors, and special criteria developed by SCs staff and Core Knowledge Groups for each collection.** Materials must first meet the general guidelines governing all resources that are added to the LINCS database, and then criteria applicable across all the special collections. These are posted on the Special Collections private “Swap Page” website accessible to all directors and CKGs. In addition, resources must be acceptable under the unique criteria established by each SCs for its own specific collection.
- **General and Special Collections guidelines address appearance, value to the field, and quality issues in a general way.** The general LINCS guidelines require that resources in LINCS databases be: educational; useful or have practical value to the field; be innovative and high quality, well-presented, and current; include a statement of authorship/ownership, date, and bibliographic information. In addition, SCs guidelines require that resources be relevant to the specific collection and focus on adult literacy, adult education, training and development for adult education practitioners and learners, or adult education community resources. They also require that the resources fit within the SCs topic and categories within the topic, and be directed at a regional, national or international audience.

4. How effective are the selection criteria and procedures?⁵

- **The General LINCS Criteria and the Special Collections Criteria are too general to provide specific guidance on the quality of resources selected and are most effective at helping identify the relevance and practical value of the resource to the Collections. The unique criteria for each Special Collection are more specific but vary in the level of specificity across the collections.** Most of the SCs Criteria identify the goal of the collection, its target audiences, and the relevance to the topic required the resource. The most frequently mentioned quality indicators are: accuracy, currency, lack of bias and stereotypes, practicality, proven value to the adult education/literacy field, and reflective of or based in current research or accepted practice. These additional content-related criteria allow the Content Development Partners to select resources that meet the particular needs of their audience, comply with the standards of their content field, and address topical areas of need in their content area.

From our interviews we learned that, in accordance with new NIFL directives and to address current accountability initiatives within the U.S. Department of Education, the Content Development Partners are revising their criteria to review resources more rigorously for the scientifically based research underpinning them. In a further effort to apply more rigorous standards to the selection process and to standardize the process itself, six of the ten Content

Development Partners have developed rubrics to guide in evaluating materials. These vary considerably by purpose, type, and use across the six collections.

- **The review process varies from one Special Collection to another with considerable variation in the influence of each SCs director over the role of the Core Knowledge Group in the process.** Some directors provide formal training for Core Knowledge Group members; others provide an initial orientation, briefings, and updates, although all appear to have discussions about purpose and criteria.

All CKGs are advisory, but some more than others. RMC found that for several Special Collections, the CKG assists in setting the focus and direction for the collection, identifies and communicates trends in the field, and helps determine the needs of stakeholders. However, the SCs director is responsible for identifying, reviewing, and selecting the actual resources to be included in the collection. Input on resources is rarely solicited from the CKG members. In other SCs, a subcommittee of the CKG is active in reviewing and selecting materials after the director identifies and pre-screens materials. In more than half of the SCs, the CKGs play roles in selecting resources and serve as advisors, too. Most of the collections that operate this way use a rubric to score the resources and make final selections.

Users

5. Who uses the Special Collections?

At the time of our interviews in 2004, SCs directors and CKG members were not sure who the primary users of their collections were. They rely on anecdotal feedback from conferences and workshops, which suggests that the audience for SCs is teachers/educators, followed by program managers/administrators and students/learners.⁶

Our surveys of users in spring, 2005 provide a somewhat different picture of SCs users.

- **Over one-half (55%) of the Special Collections users in our surveys were program directors or managers. Teachers/tutors made up 15% of the respondents and 8% were state administrators/managers.** The remaining groups were spread among many occupations with only trainers/technical assistance providers getting more than a few percent (5%).⁷
- **Respondents are primarily professionals with many years in the field. Over one-half (53%) have more than 10 years experience.** New professionals (less than 3 years) represented only 7% of the respondents.⁸
- **Almost two-thirds (63%) of the respondents are affiliated with ABE programs.⁹** Those respondents most likely to use the Special Collections that were not affiliated with ABE programs were primarily from four-year colleges (15%), federal and state government agencies(15%), state literacy resource centers (14%) or national literacy organizations (13%).¹⁰

- Respondents that visited the Special Collections were most likely to say they were from small adult education/literacy programs (68%) and urban areas (53%).¹¹

6. How often do users visit the Special Collections?

- The Special Collections are the most visited (81%) part of the LINCS website after the LINCS Literacy Resources, the direct link on the Home Page to lists of educational/literacy resources and materials in the LINCS databases, which is visited by 83% of the respondents in our surveys.¹²
- Similarly, users visit the Special Collections at about the same frequency as they visit the Literacy Resources – over one-half (57%) on a monthly basis and about 21% visit daily or weekly.¹³

7. What is the value of the Special Collections to users?

The stakeholders we interviewed for the Special Collections Interim Report observed that the value of the LINCS Special Collections to the adult education/literacy field is user access to a compilation in one place of comprehensive, quality, and free resources. These comments are similar to the comments we have heard from users and stakeholders about the LINCS website overall.¹⁴

In our surveys we asked a general question about how useful the Special Collections are to users, and compared the responses to those of other aspects of the LINCS website.

- Almost one-half (47%) found the Special Collections “Very helpful” and another 45% said they were “Helpful.” In other questions users rated materials and resources as the most valuable aspect of LINCS, but it is probable that many of them access these materials through the Special Collections page on the website.¹⁵

Content

8. What is the content of the Special Collections?

The Special Collections contain reviewed research reports, instructional materials, and website links to other quality resources available on the Internet that are related to the topic of an individual Special Collection. RMC reviewed and categorized 1,412¹⁶ resources in the ten Special Collections during our study in March 2004. These were categorized according to a typology of 14 types of resources.

- One-third (32%) of the resources in the Special Collections are classroom/instructional resources (manuals, guides, curricula, workbooks, worksheets, lesson plans, student learning activities, student products, and assessment tools). The largest single category in the Special Collections is web links to public and private organizations, agencies, and associations. These accounted for 28% of the resources in the Special Collections. The

remaining 40% of resources include research-related information, miscellaneous web links, directories, listservs; funding resources; professional development resources (courses, workshops, trainings); and other (policies, regulations, and laws, conference information, conference speeches, lawsuits, dialogues).¹⁷

The SCs directors interviewed for our report said they chose their materials based on the assumption that their primary users are adult education/literacy program administrators and instructors and our review confirms this bias.

- **Resources in Special Collections were targeted primarily to teachers/tutors (41%), program administrators/managers (30%), and students/learners (25%).¹⁸**

RMC analyzed each of the Special Collections for the categories of resources in each and the audiences that were targeted. The SCs vary considerably from one to another, depending on the emphasis of the collection.¹⁹

9. To what extent is content high quality or based in research?²⁰

RMC considered several indicators of quality in our review. One is whether the materials chosen are appropriate and relevant to the needs of the audiences using them, as described above. Another is the extent to which the resources can be considered to be contributing to users' knowledge about research in the field.

- **Resources that are identifiable as research, technical reports, briefs, practice-based research, or journal articles in the Special Collections represented 17% of the resources.** At the time that we interviewed, the LINCS policy to encourage collection of research-based resources was still fairly new. We would expect that these numbers are somewhat higher now, a year later.

Another measure of quality is whether a resource used high quality research or evidence as the basis for its development. RMC did not attempt to determine the research or evidence base of the resources reviewed for this report. The most likely resources in the Special Collections to benefit from a research or evidence base would be instructional materials designed to improve student or teacher outcomes such as student learning activities and workbooks, program manuals, guides, and curricula, teacher workbooks, assessment tools, and professional development materials. These resources comprise approximately 35% of the resources examined in this review.

One measure that RMC also did not apply in its review, but which was raised as an issue by some stakeholders is the currency of many of the resources in the Special Collections. Some of those we interviewed were concerned that many of the older materials were out of date and also may not have been subjected to as rigorous a review as newer resources.

Some Special Collections Content Development Partners have attempted to obtain information from users about their perceptions of these resources in their own collections through surveys

and evaluations. However, content has not been addressed to any great extent in these, especially with respect to scientifically based research resources.

Cost-Effectiveness

10. How cost-effective are the Special Collections?²¹

- **Almost all the SCs have similar budgets and employ a broadly similar approach to allocating their budgets to the five service areas.** Eight of the nine SCs examined operate at a very similar five-year average annual budget level of approximately \$50,000 per year. The budget for the Program Leadership and Improvement SCs is substantially larger at approximately \$166,000. Allocation of the budget to the service areas is similar across all the SCs and is consistent using the five-year averages as well as the most recent year's budget. The majority of service activities, approximately 70%, are directly associated with expanding and maintaining the collections.
- **However, the proportion of each SCs budget allocated to fully loaded labor varies substantially across the SCs.** Using a five-year average for each SC, budgeted labor ranges from 22 percent to 85 percent. The most recent year's budgets ranged from 10 percent to 93 percent. Technology Training and Workforce Education have the highest labor costs while Assessment, ESL, and Program Leadership and Improvement have the lowest.
- **As in the RTCs, the SCs are highly cost effective because of substantial donation of in-kind services,** particularly additional time spent by SCs directors and the time donated by volunteer Core Knowledge Group members doing research, providing expert advice, and conducting reviews of materials.
- **It is unlikely that for-profit firms could be induced into providing the same set of services as the current SCs without a substantial increase in funding.** This conclusion is based on the market comparability analysis conducted by KPMG of the RTCs which included the activities of the SCs grantees. See the discussion of the RTC comparability analysis in Chapter IV for more details.

Conclusions and Recommendations

The primary purpose of the LINCS Special Collections is to identify and provide relevant quality resources to the adult education/literacy field through a single point of contact on the LINCS website. Special Collections are housed within larger organizations that act as fiscal agents. Each Special Collection has a Content Development Partner, or director, with grant management and content development responsibilities and a Core Knowledge Group, a materials review committee of volunteers with expertise in the specific content area of that Collection. Together, the director and the Core Knowledge Group determine the direction and content of the collection. National LINCS provides regular guidance and a LINCS Regional Technology Center or other technology organization offers technology support.

Potential resources for the collections are screened using general criteria developed by the LINCS staff and directors, special criteria for all of the collections and then individual collection criteria developed by the collections staff and Core Knowledge Groups. General and Special Collections guidelines address appearance, value to the field, and quality issues, and are most effective at identifying the relevance and practical value of the resource to the collections. However neither set of criteria provide guidance for assessing the quality of resources. The review process varies among Special Collections especially in the level of specificity of the unique criteria applied to an individual collection and the level of influence of each collection director over the role of the Core Knowledge Group.

About one-third of the Special Collections resources are classroom/instructional resources targeted primarily to teachers or tutors, program administrators or managers, and students. Primary users appear to be program directors or managers, followed by teachers or tutors, and state administrators or managers, many affiliated with Adult Basic Education programs. Over one-half have more than 10 years experience in the field. Most reported in the survey that the Special Collections are “helpful” or “very helpful.”

In view of the above conclusions, RMC Research recommends NIFL take the following actions:

- **NIFL should take a stronger role in defining the roles, expectations, functions, and criteria for quality associated with the Special Collections.** If stakeholders shared a common understanding of NIFL’s current mission and purpose of the collections, the operation of the SCs could proceed more efficiently and effectively. Providing developers with unambiguous guidance on the collections’ operation, especially about intended audience and types and quality of appropriate resources, could unify the developers and strengthen the collections.
- **LINCS should work within the current structure of the Content Development Partners to strengthen the review criteria and standardize the review and selection process across the SC.** Currently, the roles of the Content Development Partners and Core Knowledge Groups in each collection are uniquely structured to vet materials, some with most of the control in the hands of the director; others with more equal distribution of responsibility. The review process might be better if there were clearer guidelines from LINCS about what these roles should be, particularly if they required a greater balance in the

review activities between the director and the CKGs. In any case, both the directors and CKGs have the expertise and experience necessary to provide input on the development of new criteria for the SC. Stronger criteria would provide improved guidance and consistency during the review process.

- **NIFL should consider some form of compensation for the Core Knowledge Group.** Given the increased expectations that SCs will apply new standards for locating, reviewing, and selecting scientifically-based resources and instructional materials, it seems likely that volunteers in the Core Knowledge Groups, presumably with the expertise to identify these resources, will need to assume greater responsibility for the review. Also, SCs directors may find that the only way they can attract experts with the experience to vet scientifically-based resources will be to pay them a stipend.
- **National LINCS should provide clear definitions, guidance, and support on acquiring and selecting content that complies with standards for scientifically based research.** Given the emphasis on scientifically-based research and instructional practices, NIFL should provide Content Development Partners and Core Knowledge Groups (a) a common definition of scientifically-based research, (b) guidelines for applying that definition to instructional practices in adult basic education, and (c) guidance and technical assistance on locating appropriate research. NIFL might begin this process by collaborating with the NIFL Partnership for Reading and other organizations that conduct primary research in adult education to identify and access suitable research in the adult literacy field.
- **The LINCS monitoring process should be strengthened.** NIFL should develop a system of periodic evaluations of the Special Collections. Content Development Partners would benefit from information on who uses the Special Collections and how. Such information could guide the collections' ongoing development and improvement. Additionally, NIFL should design an internal evaluation system to gather quantitative and qualitative data on the SCs to monitor and assess outcomes from year to year and to forecast trends in each content field. The open-ended data that are currently collected as part of the LINCS monitoring process do not allow for easy comparability across the SCs, and in many cases, data are missing.
- **LINCS and the Content Development Partners should develop more efficient ways to search Special Collections reviewed resources for scientifically-based materials.** While simply labeling materials with a scientifically-based "seal of approval" icon is one option, it will be worth considering other options, such as reorganizing resources within the site to house scientifically-based materials in separate, exclusive sections.
- **LINCS needs to better publicize the SCs resources available.** By coordinating SCs team efforts with other LINCS components, users of the LINCS Discussion Lists, for example, could identify new vetted resources in the SCs as they become available. The Discussion Lists could also provide a forum for discussing the use of these resources in improving instruction in the adult education field.

Notes

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- ¹ www.nifl.gov/lincs/collections/collections.html
 - ² Interim Report *Review of LINCS Special Collections*, pp. 7-14.
 - ³ Interim Report *Review of LINCS Special Collections*, pp. 34-42.
 - ⁴ Interim Report *Review of LINCS Special Collections*, pp. 46-52.
 - ⁵ Interim Report *Review of LINCS Special Collections*, pp. 60-62.
 - ⁶ Interim Report *Review of LINCS Special Collections*, pp. 53-55
 - ⁷ Appendix G. LINCS Special Collections Study, Table 1.
 - ⁸ Appendix G. LINCS Special Collections Study, Table 2.
 - ⁹ Appendix G. LINCS Special Collections Study, Table 3.
 - ¹⁰ Appendix G. LINCS Special Collections Study, Table 4.
 - ¹¹ Appendix G. LINCS Special Collections Study, Tables 5 and 6.
 - ¹² Appendix G. LINCS Special Collections Study, Table 7.
 - ¹³ Appendix G. LINCS Special Collections Study, Table 8.
 - ¹⁴ Interim Report *Review of LINCS Special Collections*, pp. 53-54.
 - ¹⁵ Appendix G. LINCS Special Collections Study, Table 9.
 - ¹⁶ These numbers reflect unduplicated counts of resources available on the Special Collections websites only, and do not include the numerous other resources available on the national and Regional Technology Center websites (which are not subjected to the more thorough peer-review of the Special Collections).
 - ¹⁷ Interim Report *Review of LINCS Special Collections*, pp. 16-33.
 - ¹⁸ Interim Report *Review of LINCS Special Collections*, Figure 2, p. 17.
 - ¹⁹ Interim Report *Review of LINCS Special Collections*, pp. 18-33.
 - ²⁰ Interim Report *Review of LINCS Special Collections*, pp. 53-63.
 - ²¹ Findings in this section are from Appendix B. *LINCS Cost Analysis*, pp. 22-30, 33-38.

VI. Assessment Strategies and Reading Profiles Study

Some of the materials and resources found on LINC'S were developed by consultants working on projects funded by NIFL. One of these is the Assessment Strategies and Reading Profiles (ASRP) website. This website is a tool that allows users, typically Adult Basic Education instructors, to enter a set of reading assessment scores for a student and place the student within one of ten reading profile types. Once profiled, the instructor can identify reading instruction strategies appropriate to the student. The ASRP website also is a mini-course in the basics of reading assessment, which provides instructors background to use and interpret the profiles. As part of the Comprehensive Review, NIFL asked RMC to review the website for its quality, usability, and usefulness to the adult education/literacy field.

Introduction and Research Questions

The following questions guided this study:

Overall

1. What is the Assessment Strategies and Reading Profiles website and its two components: the Match A Profile (MAP) tool and adult reading assessment Mini-Course?
2. How user-friendly is the website?

Match A Profile Tool

3. What is the scientific basis for the MAP tool?
4. How easy are the MAP profiles to understand, interpret, and use in understanding student literacy levels and informing instruction?
5. How useful is the MAP tool for the adult education/literacy community?
6. How could the MAP tool be improved?

Reading Assessment Mini-Course

7. What is the quality of information in the Mini-Course?
8. How easy is the Mini-Course to use and understand?
9. How useful is the Mini-Course for the adult education/literacy community?
10. How could the Mini-Course be improved?

Methodology

RMC relied primarily on outside consultants to review and evaluate the ASRP website. All were experts in their field. The website was reviewed for its design and usability as part of the overall usability test and expert review of the LINC'S website. Other consultants participated in an expert review of the content and presentation of materials in the website. RMC also interviewed the developer of the website, Dr. Rosalind Davidson. A plan to survey users of the website online was dropped when Webtrends data on the site indicated that too few people visit the site to make such a survey practical.

Expert Review and Usability Test of the ASRP Website

RMC contracted with Design Perspectives, Inc. to conduct an expert review of the ASRP website, as a part of the LINC'S website overall. The purpose was to examine the design, navigation, and usability of the website. A usability test was conducted with volunteer users. One of the tasks in this test was to locate the ASRP website and then explore it for its usability and value. For complete details of this expert review and test, please see the two full reports by Design Perspectives, Inc.: *LINC'S Usability Evaluation: An Expert Review*, and *LINC'S Usability Study* both submitted by RMC to NIFL in February, 2005.

Interview with ASRP Website Developer

RMC conducted a telephone interview with ASRP developer Dr. Rosalind Davidson in December, 2005. The purpose was to learn about the purpose and development of the website, including any changes planned for the future. The interview was unstructured, guided by several topical questions.

Expert Review of Website

RMC worked with NIFL staff to identify a list of potential adult reading expert researchers and practitioners to review the ASRP website. In some cases, potential reviewers also supplied names of other candidates. Possible consultants were contacted by e-mail and telephone and given a letter requesting their participation. Consultants submitted resumes or curricula vitae for review of their qualifications as either a researcher in the field of adult reading or reading assessment research or a practitioner working with adult literacy programs or students, familiar with reading assessments.

Each consultant was e-mailed a review protocol with instructions for completing it. The protocol included the topics of usability, quality, and value of the ASRP website. It asked reviewers to both rate the ASRP website for various criteria and to respond to open-ended questions. Each reviewer was paid a stipend for completing a review. RMC then summarized the resulting reviews in a summary report (see Appendix H for the complete report, *Summary of Researcher and Practitioner Expert Reviews of the Assessment Strategies and Reading Profiles Website*).

Findings

Most of the findings below are taken from the researcher and practitioner expert reviews of the ASRP website conducted for RMC. RMC found in these reviews that practitioners and researchers tended to agree on most points about the ASRP website. In the following summary, we present findings that are primarily the observations of both groups of reviewers, although we distinguish between the comments of the two groups when there is a difference between most of the researchers and most of the practitioners, or when several individuals have an important point to make. For minority viewpoints or comments expressed by one or two individuals, please see the full report in Appendix H. Except where noted, the summary findings below are all presented in more detailed form in the full report in Appendix H.

Overall

1. What is the Assessment Strategies and Reading Profiles website and its two components: the Match A Profile (MAP) tool and adult reading assessment Mini-Course?

- The ASRP website is a set of website pages linked by hyperlinks. The website is organized into two “tracks:” the Match A Profile tool and an Adult Reading Assessment Mini-Course. Users of the website are invited to choose one of the tracks and move through the website following a series of links that take them step-by-step through the website links in the track. The user of the website can move freely back and forth between the MAP tool and the Adult Reading Assessment depending on the particular interest of the user.
- Users of the MAP tool enter a set of reading assessment scores from one or more well-known assessment instruments into the MAP and the MAP produces a profile of the student based on the scores. The MAP also recommends instructional strategies that can be used with each profile. Several of the assessment instruments are available on the website along with a complete description of the ten profiles, a range of additional resources for the instructor, a glossary of terms, details of about the ARCS, FAQs, and references.
- The Adult Reading Assessment Mini-Course walks the user through a series of pages of information about the basics of reading assessment. These pages introduce the user to the terminology of the subject and present examples and resources for further study.
- According to its developer, the purpose of the ASRP website is to make easily available tools to help users 1) learn about the Adult Reading Components Study-based reading profiles and 2) for diagnostic purposes, apply the profiles to students using commonly available reading assessment scores.¹
- The developer’s primary audience for the ASRP website is instructors of Adult Basic Education programs.² When asked for whom they believed the website was intended, based on their visit to the site, six out of eight of our reviewers agreed that the website was intended for adult education/literacy instructors. However, three reviewers also thought the site was intended for diagnosticians or assessment specialists. Two thought it was meant for program

administrators while another thought it would also be good for testers, staff developers, and researchers.

- Most of the reviewers said that purposes of the website overall, and the MAP tool and Mini-Course were not clear. Several suggested that this information should be presented first, on the home page, e.g., presenting a section called “Why Reading Profiles Are Important” at the beginning, not end of the page.

2. How user-friendly is the website?

- Volunteers in the usability testing sessions found that the ASRP website was difficult to locate, even when using the LINCS search engine, and most were unable to locate it without assistance.³
- The researcher and practitioner reviewers agreed that the website was fairly easy to navigate and that information was clearly labeled. The topics in the left column were mentioned as helpful. However, they also agreed that it appeared too busy or crowded and dense with text.
- The reviewers and usability test volunteers noted that the Search option generally worked well.⁴ However, there were comments about the results of Search being difficult to read, not selective enough, or resulting in error messages.
- All the researcher and practitioner reviewers liked the two-track format and organization of the website. However, they believed that it would be better to list the Mini-Course first, to encourage novice users to read it before proceeding to the MAP tool.

Match A Profile Tool

3. What is the scientific basis for the MAP tool?

- The MAP tool was adapted from the findings of the National Center for the Study of Adult Learning and Literacy (NCSALL) Adult Reading Components Study. This study identified a typology of common reading profiles of Adult Basic Education students based on their scores on eleven assessment measures of print and meaning components or skills involved in reading (for further information on ARCS, see *Adult Reading Components Study (ARCS)*. Full citation is available in the References).
- RMC’s researcher consultants commented that the ARCS appeared to be a high quality study, but the information on the website was not sufficiently technical (e.g., validity and reliability data were not presented) to draw conclusions. One reviewer was familiar enough with one of the assessment measures used in the study to comment on its content validity, but not on others. Concerns were raised by the reviewers about the validity and reliability of the profiles, and the risk of emphasizing one reading component over another in the profiles.

- The MAP tool simplifies the ARCS profiles by limiting the number of assessment measures on which the profiles are based to five. According to the developer the reason for this was to reduce the assessment burden required of instructors that wanted to use the MAP. The five components selected for the MAP profiles were: word recognition, spelling, word meaning, silent reading comprehension, and oral reading rate.
- The developers selected a set of assessment measures of the five components with the best reliability and validity characteristics they could find to recommend to users for obtaining the scores needed to use the MAP. They acknowledged that in choosing the measures they had to weigh the trade-offs between the rigor represented by good psychometric characteristics and such practical issues as the likelihood that instructors' could access an instrument and the time and training required to administer it. In one case, they created their own Word Meaning Test which is on the website and teachers can use to obtain that score.

4. How easy are the MAP profiles to understand, interpret, and use in understanding student literacy levels and informing instruction?

- Both practitioner and researcher reviewers agreed that the instructions for using and interpreting the MAP tool were clear, and that the site was easy to use.
- Both groups of reviewers were concerned about users' abilities to use the MAP tool with students, accurately interpret results, and apply them in the classroom. Practitioners and researchers agreed that the site might be intimidating and too advanced for novice practitioners who would need more information and training to use the MAP tool than the website supplies. However, they suggested that the MAP could be the basis for professional development trainings.

5. How useful is the MAP tool for the adult education/literacy community?

- Practitioners thought the MAP tool could be used in professional development programs and in-service trainings for instructors to help them learn the complexities present in students reading skills, in the classroom to identify specific areas of weakness to work on with in students, to identify areas of strength to students, and to help instructors identify teaching strategies responsive to the strengths and weaknesses of groups of students in their classrooms.
- The researchers also said the MAP tool could help design instruction, but also saw it as most useful for screening and placing students, and to help determine whether further assessment is needed.
- Both researcher and practitioner reviewers thought that the MAP tool had some value in distinguishing different types of learners, particularly their strengths and weaknesses. However, several reviewers in each group expressed reservations about its ability to distinguish low readers from non-native or disabled adult readers.

- Across all the reviewers, both practitioners and researchers, the most variability in their responses was found on the question of the MAP tool's usefulness for work with learning-disabled students. Several reviewers said that it was inappropriate to use the tool to diagnose LD students. Others did not rule out its use for diagnosis but said that it lacks enough information to do so. Another group of reviewers said that the MAP provides information about the patterns of strengths and weaknesses of learning disabled students that, with additional support or training, or the use of other instruments specifically designed for LD, could guide instructors in the choice of instruction or intervention strategies, even if it was not used for diagnostic purposes.
- Practitioner reviewers liked the MAP tool for its ease of use, the free tests included on the site, the readable text and lack of jargon used, and its presentation. They also liked the emphasis on strengths and weaknesses of students and the way it could help instructors better understand their students. The researchers also liked the MAP tool for these reasons but also because it presents reading as a complex task, and students' scores could be compared to a matched profile that made sense to them.
- Practitioner reviewers rated the overall effectiveness of the MAP tool for the adult education/literacy field as a 3.2 on a scale of 1 (low) to 4 (high). Researchers gave the MAP slightly higher rating: 3.33.

6. How could the MAP tool be improved?

- Researcher reviewers had a variety of reasons they did not like the MAP tool. It did not provide enough empirical information to support saying anything more about a student than the strengths and weaknesses identified by the profile, e.g., how recommended strategies might affect the student's progress. Comprehension is not well-tested using the recommended measures. The profiling seemed over-simplified. The website has some inconsistencies and misspelled words.
- The researchers recommended that the website include a section the empirical evidence for the MAP, descriptions of its development and testing, including validity and reliability data; unlink the suggested instructional strategies from the profiles unless empirical data are presented to support the links; and include cautionary statements on the MAP about the administration and interpretation of the assessment tests (e.g., training required) and use of the MAP profiles.
- Practitioners expressed concern that instructors might not be able to gather enough scores to use the MAP tool, and that the profiles were not specific enough to guide instruction.
- Practitioners noted that there needed to be more resources, strategies, and references on the MAP pages or made available through links, rather than in the text, which would make the MAP more readable.

Reading Assessment Mini-Course

7. What is the quality of information in the Mini-Course?

- All except one reviewer thought that the information was generally current and comprehensive. However, the lack of resources and references, in particular, was mentioned by both groups of reviewers. Each group had pieces of information that they believed should be included in the website.
- Both groups agreed that the site, for the most part, presented accurate information. However, the researchers more than the practitioners listed a number of specific statements that they said were either inaccurate or controversial.

8. How easy is the Mini-Course to use and understand?

- All the reviewers thought that the organization of the Mini-Course was clear but that it needed to state course objectives or outcomes and include quizzes to be effective as a tutorial.
- Both groups found it well-organized and easy to use. However, they also described the material on the site as too dense and academic to serve well as a tutorial.
- Several reviewers commented on the lack of clear path between the Mini-Course and the MAP tool, if the intent of the site is to ensure that users look at the Mini-Course before using the MAP tool. Several practitioners thought that visitors to the site should be encouraged to visit the Mini-Course first, before accessing the MAP tool.

9. How useful is the Mini-Course for the adult education/literacy community?

- The practitioners found the Mini-Course more effective as a tutorial/course than did the researchers. Several said it helped their understanding of the MAP tool.
- The researchers had reservations about presenting the information as an online tutorial. As a tutorial, they found that the lack of interactivity, examples, and instructional strategies limited its effectiveness. Practitioners also thought the site needed to be more interactive with more examples..
- Practitioner reviewers gave the overall effectiveness of the Adult Reading Assessment Mini-Course a higher score at 3.7 than they gave the MAP tool. The researchers, on the other hand, rated the Mini-Course 2.6, much lower than the MAP tool.

10. How could the Mini-Course be improved?

- Neither group of researchers suggested major changes to the Mini-Course.

- The researchers recommended a pretest or quiz of the user's knowledge before beginning the course. They also suggested re-writing/editing to focus the site, make the pages less dense, and be more interactive.
- Practitioners also suggested the presentation be made simpler and more interactive, but with more information about the course itself as well as more content.

Conclusions and Recommendations

Both the adult reading researchers and practitioners that reviewed the Assessment Strategies and Reading Profiles website like it. They believe that, with some minor work, it is a potentially useful resource for the field.

Usability

In general, our reviewers praised the organization of the website, its two-track approach, and the ease of navigating around and through the web pages. The search engine was generally useful although the presentation of search results could be improved. Instructions for using the MAP tool were clear.

Most other usability issues raised by the reviewers were minor. The website overall, the MAP and Mini-Course tracks lacked statements of purpose or objectives up front which would help users know quickly whether to continue exploring the site. The reviewers were most bothered by the amount and density of the text on the page which they felt could be intimidating, particularly to practitioners new to the field.

The reviewers made several suggestions to improve usability.

- **Organize the website so the Mini-Course has a higher visibility or priority over the Match A Profile (MAP) track**, particularly on the home page, to encourage users' basic understanding of assessment before using the MAP tool.
- **Add more links to references and sources on other pages or websites**, which would lessen the information on the page, while creating the opportunity to increase the number and types of resources that could be made available to the user.

Credibility

The reviewers said that although the Adult Reading Components Study appeared to be a solid scientific study, there was too little technical information on the website to be sure. The researchers noted the lack of information about how the study was conducted, the validity and reliability of the profiles developed, and how the MAP tool was subsequently adapted. The lack of information raised questions in the minds of the reviewers about the ability of users to apply the tool with real students, e.g., to differentiate groups of students or to diagnose learning disabilities or non-native English speakers. Nonetheless, both researchers and practitioners seemed comfortable enough with the quality and characteristics of the MAP tool to see it as useful in a variety of classroom and professional development situations.

The researchers and practitioners had more divergent views on the quality of the Mini-Course. Practitioners were generally enthusiastic, describing the Mini-Course as comprehensive, current, and accurate. Their criticisms were directed primarily at the way the information was presented and organized, and not at the content itself. The researchers, on the other hand, were more

critical of the content, noting limitations and inaccuracies in the text. They disagreed among themselves about the comprehensiveness and depth of the materials presented. However, overall, they seemed to have more concerns about the way Mini-Course materials were presented than what was said.

The reviewers made several general recommendations to improve the content of the website.

- **Provide more information, resources, and references in support of the content presented on the website, especially the empirical research that is the basis for the materials.** This information could be included as linked pages on the website itself, or simply referenced, or included in pop-up windows as is currently the case for some of the terms and information already on the website.
- **Include some cautionary statements in the MAP tool** to ensure that those who use it know that they should have training and experience in the administration, scoring, and interpretation of assessment instruments.

Value to the Field

Both the researchers and practitioners said that the website was effective and could be valuable to the adult education/literacy field. In particular, the MAP tool could be very useful in training and staff development programs for instructors and in helping them identify appropriate intervention or teaching strategies. Similarly, the Mini-Course had potential as a tutorial and to help users understand the MAP tool.

However, reviewers in both groups had questions about whether the website could reach its intended audience given that the presentation of information was not as effective as it could be. The fact that the intended audience is adult education instructors but several reviewers assumed that the site is also for diagnosticians or assessment specialists may indicate that the information on the site is pitched too high for the users who might get the most benefit from it.

All of the reviewers said they would recommend the website to students or colleagues. However, most had some concerns or qualifications about recommending it either to people who had too little knowledge or experience, or to colleagues for whom the materials would not be new.

The recommendations the reviewers made that were directed at improving the website's utility to the field primarily concerned making the site more usable and credible (see recommendations above). For detailed suggestions on the ways our reviewers recommended that the website be improved, see the summary report, *Summary of Researcher and Practitioner Expert Reviews of the Assessment Strategies and Reading Profiles Website*, in Appendix H.

Notes

¹ Interview conducted by RMC staff with Dr. Rosalind Davidson, December 3, 2004.

² Interview conducted by RMC staff with Dr. Rosalind Davidson, December 3, 2004.

³ *LINCS Usability Study*, pg. .

⁴ *LINCS Usability Study*, pg.

VII. Overall Conclusions and Recommendations

The National Institute for Literacy is currently in a time of reflection and redirection, examining organizational options for achieving substantial impact in a time of evolving priorities and with finite resources. Vision and direction for LINCS have evolved and are still evolving; the organization's goals and intentions have become unfocused and broad; emphasis has been on process and technology, not outcomes; evaluation of activities and results is not systematic and difficult to assess; Special Collections needs specificity in purpose, goals, and standards; and the LINCS website architecture is not conducive to successful navigation or searches. New directions for the LINCS system, if any, must contribute to the fulfillment of the Institute's mission and goals and for the specific functions established for LINCS.

Within the current climate of change, the findings contained in this report document the wide range of value that LINCS stakeholders and constituencies, i.e., adult education/literacy state and local program administrators, teachers, tutors, researchers and other users of LINCS, RTC and SC grantees and their partners, LINCS staff, and NIFL Advisory Board, see in the LINCS system and products developed for LINCS. There is no question that LINCS has achieved major accomplishments:

- LINCS is a primary information source for the literacy field providing first-ever access to a centralized, comprehensive, Internet-based database of adult education/literacy materials.
- With LINCS, NIFL created an infrastructure capacity for dissemination of tangible materials that contribute to every adult education/literacy professional's own personal database of adult education teaching and learning tools and skills.
- The LINCS Discussion Lists have created a network of community-based adult literacy educators who feel connected by virtue of sharing information and discussion about their field.

Together these accomplishments mark a significant contribution to the adult education and literacy field. They are also classic examples of what economists refer to as "a public good." In other words, by funding these projects, NIFL is providing the means and resources to meet the needs of a target population for which the free market does not provide enough profit incentive. Without NIFL funding, it is reasonable to conclude that a comparable system would not be provided elsewhere.

To move LINCS forward through this uncertain period into a well-established coherent system, RMC recommends that NIFL structure an effort to develop a long-range plan to fulfill the LINCS legislative mandate by addressing the organization and management structure, making key decisions on the information to be collected and disseminated, confirming the most appropriate dissemination system, and resolving technical assistance issues. Within each of these areas, RMC makes the following specific recommendations:

- **Organization and Management Structure.** RMC recommends that NIFL rethink the organizational structure of LINCS to better meet its legislative mandate. We recommend that

NIFL separate the policy setting responsibility from the management and implementation of the LINCS system. NIFL would continue to establish national policy, work with constituents, and engage and respond to departmental and congressional interests. NIFL would contract out to a single overall LINCS contractor the day-to-day activities of collecting, managing, and disseminating materials and resources. The contractor would be accountable to NIFL, responsible for (a) implementing, operating, and managing the content and organization of the LINCS system, its website, databases, and discussion lists; (b) developing an internal accountability system, (c) working with users and potential users to assure open and easy access, and (d) promoting LINCS and/or NIFL to the public.

- **Content.** According to LINCS users, the major value of LINCS to the field is its database of content, primarily materials and resources for instruction. A priority of LINCS should be to improve both its quality and quantity. NIFL should improve quality by developing a vetting process for any materials and resources available to the public through its website, similar to a journal peer-review. We suggest that this process include a coding system to be applied to all LINCS materials, not just those resources found in Special Collections, to identify high-quality and recommended resources. Materials achieving those standards could be tagged with a code or an icon to clearly identify their status. Such a system might use separate icons for different categories of materials, for example, “best practices” resources or resources based on research.

We also encourage NIFL to support the inclusion of more high quality materials in the LINCS database, obtaining these resources through collaborative programs between LINCS and other programs within NIFL and its federal partners. At the same time, we suggest narrowing the range of information available on the LINCS website to the instructional materials and resources of most value to its key constituents, and eliminating other types of information that can be found elsewhere online.

- **Delivery System.** Because the materials and resources are clearly what potential users want, LINCS should continue to ensure open and easy access to all online materials. LINCS should implement the improvements identified in this report and detailed in the usability study intended to make the system easily searchable and materials clearly labeled and described. Further, LINCS should become proactive in its dissemination of quality materials using the latest technologies, which may not necessarily be the most expensive. This could be started, for example, by disseminating to libraries or ABE programs a DVD of the most popular or most highly reviewed materials in the database, updated on a regular basis. When LINCS began it was at the forefront of electronic dissemination of best practices, and it should strive to return to that position today by using sophisticated and varied technologies to disseminate research-based and best practices resources.
- **Technical Assistance.** The RTC grant program as it currently exists has served its purpose well but RMC believes that LINCS no longer needs training and technical assistance at the local level. Training the public to use technology or to navigate the Internet should not be a priority for NIFL. When individuals need help navigating the LINCS website to access materials, we interpret that as a website architecture problem best addressed by implementing the website usability recommendations in this report. RMC also believes that by taking

advantage of technology, it can limit its technology technical assistance, for example, by to developing an online tutorial to guide new users through the website.

Because of the opportunities created by the RTC grant program, many of the people involved in the program have become the new technology experts in the adult education and literacy field. We encourage LINCS to take advantage of this cadre of LINCS-committed people and organizations, perhaps as an advisory or technical working group to LINCS or its contractor(s), to help LINCS continue to bring technological innovation to the field.

In summary, RMC believes that implementing these recommendations will result in a LINCS that is organizationally more efficient and effective and better able to meet its legislative mandates. We believe these ideas could promote dissemination of higher quality materials 24 hours a day, and reduce expenditures on disparate technology training at the local level in favor of employing technology nationally.

References

The following are documents used in the preparation of the Final Report and referenced throughout the Final Report:

RMC Research Draft Interim Reports to the National Institute For Literacy:

Regional LINCS Grantee Summary Report, December 15, 2003

Review of LINCS Discussion Lists, December 15, 2003

Review of LINCS Regional Technology Center Grant Program, June 3, 2004

Review of LINCS Special Collections, June 16, 2004

Consultant Reports to RMC Research:

Design Perspectives, Inc., *LINCS Usability Evaluation, An Expert Review*, November 29, 2004

Design Perspectives, Inc., *LINCS Usability Study*, December 15, 2004

KPMG, LLP, *LINCS Cost Analysis*, August 2005

KPMG, LLP, *LINCS Content Analysis of Discussion Lists*, September 15, 2005

Other Reports:

J. Strucker and R. Davidson, *Adult Reading Components Study (ARCS)*, A NCSALL Brief, November, 2003.