Assessment of North Carolina County Departments of Social Services' Readiness to Engage in E-Learning

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EXECUTIVE SUMMARY

In 2005 the NC Division of Social Services asked the Family and Children's Resource Program, part of the Jordan Institute for Families at the UNC-Chapel Hill School of Social Work, to assess the readiness of North Carolina's county departments of social services to participate in e-learning. Using site visits, interviews, and surveys the Resource Program collected information from e-learning experts and from over 1,000 North Carolina county DSS employees, including DSS directors, Information Technology (IT) managers, and supervisors and line workers from Work First and child welfare programs. The assessment's key findings are summarized below.

1. Are county DSS managers and workers interested in and supportive of e-learning?

Overall, interest in and support for e-learning is high for directors, supervisors, and workers. However, within each group we identified a distinct minority (up to 25%) that was notably less interested and supportive. Reasons DSS workers gave for their lack of interest in e-learning included a dislike for computers and preference for the classroom experience. These workers will require an extra level of support if they are to be successful with e-learning.

Managerial support for e-learning is very important and should not be taken for granted. To guarantee long-term success, e-learning for North Carolina county departments of social services will need to combine effective marketing strategies and quality e-learning experiences. Over time this two-pronged approach will allay the concerns of those who are initially hesitant.

2. What are the prevailing expectations in DSS agencies toward e-learning?

Directors and supervisors expect: (1) that e-learning will reduce travel costs and workers' time away from the office, (2) that e-learning will take less time to complete than traditional classroom-based training, (3) that workers will be able to set aside about two hours from a work day for e-learning, and (4) that workers will not be interrupted during e-learning.

Workers expect e-learning will give them more flexibility in scheduling training and greater ability to self-direct their learning. Workers also anticipate spending an hour or less during a typical work day on e-learning. Ideally e-learning can be personalized so that a learner only needs to spend time reviewing relevant material, which implies that e-learning will require less time than a conventional classroom. However, ultimately the learner controls how much time he or she spends on an e-learning curriculum.

Directors, supervisors, and workers agreed that it would be important for e-learning participants to communicate with each other and with a course facilitator. Preferred modes of communication (in order of preference) were email, discussion boards, and Internet chat rooms.

There was also strong agreement that new workers, experienced workers, supervisors, program managers, and directors could benefit from e-learning, and that knowledge-based courses (as opposed to skill-based courses) were best suited for e-learning.

3. What are the anticipated challenges for e-learners?

County DSS agencies tend to be busy places where line workers often either share an office or work from a cubicle. Directors, supervisors, and workers expressed significant concerns about how hard it would be to find a quiet place where e-learners would not be interrupted. If e-learning

is to be successful, directors and supervisors must ensure that e-learning time is scheduled and respected just as if workers were at a regional training center.

The assessment also explored the extent to which e-learning might be hampered by lack of computer skills or by learner attitudes toward computers. Most IT managers believe workers are comfortable using email and the Internet, but they also believe workers could benefit from additional training.

Some supervisors questioned whether e-learning will be as effective as classroom training, and wondered how the training system will ensure that e-learners complete online training and learn from the experience.

The assessment also identified agency-level policies relating to the use of technology in the workplace that could impede e-learning. In order to participate in e-learning workers must have access to appropriate computer equipment, and they must also be allowed to use that equipment.

4. Do county DSS agencies have the technological resources and support necessary for e-learning?

Broadband Internet access is available at all 81 county DSS agencies whose director or IT manager responded to the portion of our survey dealing with Internet access. However, it is important to keep in mind that the speed at which information moves over the Internet depends on much more than a broadband connection. For example, network configuration and web page content can greatly influence Internet speed. While almost all workers have access to the basic computer equipment necessary for e-learning, we estimate up to 10% of workers will need a new computer or a significant upgrade to participate in e-learning from their work station. The most common monitor size is 15 inches, which is small enough to interfere with web page presentation and the user's ability to navigate web sites.

Spam filters also present an obstacle in counties that use highly restrictive email blockers. In these agencies e-learning providers and participants must be added to a list of approved emails before learners and facilitators can communicate via email.

IT support may be an even larger issue: over 10% of agencies reported they had no full-time IT staff on site. Eight respondents to the IT survey volunteered that they were not in an IT position but did the IT work because they "knew how."

CONCLUSIONS AND RECOMMENDATIONS

1. It is critical that directors and supervisors demonstrate their support for e-learning by ensuring that workers can schedule uninterrupted time for participating in e-learning.

Recommendations:
   a. Advise directors and supervisors on how to successfully support e-learning and e-learners.
   b. Develop training for participants on how to be successful e-learners.
   c. Market e-learning effectively by providing a balanced review of its advantages and challenges so realistic expectations are set and met.

     d.   Create and launch, in partnership with select county departments of social services, pilots in distance learning that are representative of a range of worker needs, agency capacity, and agency readiness.

     e.   Partner with the North Carolina Association of County Directors of Social Services and the North Carolina Division of Social Services to disseminate the findings and experiences associated with the pilot projects described in the preceding bullet.

2. Agency-level policies that limit workers' access to the Internet and email accounts will impede some e-learners' ability to participate and communicate.

<u>Recommendations</u>:

     a.   All workers should be assigned a personal work email account. If a worker has Internet access it is easy to obtain a generic, free email account from various providers (e.g., Yahoo.com). However, these accounts are difficult to validate and cannot be disabled by the county or state if a worker leaves the agency.

     b.   Ideally, email should be accessible from the Internet so that workers can access their work email from outside the workplace. Agencies with limited IT support should encourage workers to create accounts on ncmail.net.

     c.   Workers should be allowed unimpeded access to email and Internet while at work.

3. Workers at agencies with little or no IT support and/or outdated computer equipment may disproportionately experience user-side technical issues or limitations.

<u>Recommendations</u>:

     a.   Prepare a customer care/outreach effort aimed at counties who may need extra IT support to engage in e-learning.

     b.   Help counties with outdated computer equipment secure resources for building an in-house computer kiosk dedicated to e-learning.

     c.   Make arrangements with local community colleges or regional AHECs to support county DSS's or give them access to e-learning facilities.

     d   E-learning courses should be designed with sensitivity to the technological context in which they are likely to be experienced. For example, all agencies reported using Microsoft operating systems and productivity software, a number of agencies will have limited IT support available, and many workers use a 15-inch monitor.

     e.   Include inexpensive headphones as part of course material.

4. The quality of the e-learning provided will directly impact whether e-learning is successful and accepted.

<u>Recommendations</u>:

     a.   Focus on developing training that is successful from the worker's point of view. Start with small successes and build from there.

     b.   E-learning courses should be designed with sensitivity to the organizational context in which they are likely to be experienced. For example, training should be organized into manageable blocks of time because it is unlikely that workers will be able to devote

more than an hour at a time to e-learning. Also, e-learning courses should be designed to standards specified by the Americans with Disabilities Act.

 c. Focus on developing e-learning products that are easy to use and of clear benefit to the end user. This will give e-learning the credibility it needs to satisfy reluctant or biased participants. If participants do not perceive their initial experiences with e-learning as successful it may become increasingly difficult to cultivate ongoing support and participation from the target audience.

 d. Focus on developing quality e-learning products by recognizing that adequate field testing and evaluation of those products is a necessary part of the development process.

 f. Include a feedback and evaluation component with all e-learning courses.

5. Nearly 40% of county DSS directors feel that the current training system does not meet the needs of Work First workers. Special efforts may be required to provide quality e-learning in this program area.

Recommendations:

 a. Gather and evaluate information about the training currently being provided to Work First supervisors and staff. Identify successful models.

 b. Identify successful providers of Work First training. Involve these and other stakeholders in a group to advise the creation of Work First e-learning courses.

6. This assessment did not explore the readiness of private child-placing agencies to engage in e-learning. However, currently more than half of the children in foster care in North Carolina are cared for by private agencies. Anecdotal evidence suggests that these agencies are not taking full advantage of the state's present child welfare training system.

Recommendations:

 a. Assess the e-learning needs/readiness of private child placing agencies.

 b. If appropriate, develop child welfare e-learning courses that can be used by and are appealing to private as well as public agencies.

7. This assessment did not explore the readiness of foster parents/resource families to engage in e-learning. However, as it seeks to consistently and continuously meet the learning needs of the families who care for the children in foster care, North Carolina may wish to use e-learning.

Recommendations:

 a. In collaboration with the North Carolina Foster and Adoptive Parent Association, the North Carolina Association of County Directors of Social Services, and other stakeholders, assess the e-learning needs/readiness of North Carolina's resource families.

 b. If appropriate, develop e-learning content for resource families and children in foster care.

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Survey Instruments

To access the survey instruments used to conduct this readiness assessment, please go to <http://ssw.unc.edu/fcrp/allsurveys.pdf>

OVERVIEW OF READINESS ASSESSMENT

E-learning, or the delivery of training and professional education using the Internet and other distance technologies, is an increasingly popular educational approach that can offer many benefits to learners and their organizations. Therefore, in 2005 the NC Division of Social Services Family Support and Child Welfare Statewide Training Partnership asked the Family and Children's Resource Program, part of the Jordan Institute for Families at the UNC-Chapel Hill School of Social Work, to assess North Carolina's county departments of social services' readiness to participate in e-learning.

In this assessment we asked the following broad questions:

1. Are county DSS agency managers and workers interested in and supportive of e-learning?
2. What are the prevailing expectations in the agencies toward e-learning?
3. What are the anticipated challenges for e-learners?
4. Do county DSS agencies have the technological resources and support necessary for e-learning?

We used site visits, interviews, and surveys to answer these questions. Data were analyzed to identify broad issues that cut across counties.

CONTEXT

Mandatory training requirements for child welfare social workers were enacted in May 1991 by Governor James G. Martin, who issued Executive Order 142, which required ongoing professional training for child protective service (CPS) workers. Since that time mandatory training requirements have expanded to include all varieties of child welfare workers. Today the NC Division of Social Services' Family Support and Child Welfare Statewide Training Partnership provides continuing professional development training for all North Carolina children's services social workers. Since 1998, most of this training has occurred at five regional training centers located across the state. Under current training laws, some child welfare workers are required to attend up to 100 hours of professional training (or approximately 17 training days) a year.

Although the child welfare training system in North Carolina is highly successful, the NC Division of Social Services and the members of its Statewide Training Partnership are interested in making training more accessible, effective, and cost-efficient, both for the state and for county agencies. For this reason, North Carolina is exploring the possibilities of e-learning.

E-learning offers the potential for reducing classroom time, travel time, and travel costs: these are variable costs typically borne by local agencies. In fact, most of the cost benefits of e-learning accrue to learners' organizations, not the training organization (Rosenberg, 2001). Cost savings are further multiplied by the number of learners served, the extent to which learners are geographically dispersed, and the number of training events they attend (Welsh, et al. 2003).

Looking ahead, all indications are that the quality of e-learning courses will continue to improve and enrollments will continue to grow. For example, the number of web-based courses offered by the North Carolina Community College system has increased from approximately 9,500 web courses in 1999 to over 83,000 courses in 2003 (Parker, et al. 2004). According to John Bailey, Director, Office of Educational Technology at the U.S. Department of Education, "Distance education is both a sign of the times and a harbinger of the future delivery of education services" (Parker, et al. 2004).

A recent survey of college administrators (including presidents and chief academic officers) on the quality of online courses indicated that one-third of the roughly 1,000 survey respondents expect the quality of online courses at their institutions to surpass that of in-class courses within three years. Fifty-seven percent said the quality of web-based classes already rivals that of in-class teaching (Parker, et al. 2004). Experts also expect a growth in blended e-learning models that involve a combination of classroom time and various technologies (e.g., web sites, discussion boards, listservs, teleconferencing, and video conferencing) (Welsh, et al. 2003).

The physical presence of an e-learning provider can also be an important factor in assuring learners of the quality of the organization and, by extension, the e-learning material. An article in the *Chronicle of Higher Education* (Parker, et al. 2004) attributed the expected continuation of a 50% to 60% increase in online courses at the University of Phoenix to the synergy between its physical campuses and online division: "[The University has] a widespread physical presence, so potential online students can easily go visit the physical campuses and see how customer-oriented they are."

On the other hand, it is equally necessary for consumers of e-learning to have access to the tools they need to participate. Perhaps the most important of these tools is Internet access. In this respect residents of rural areas may face more challenges than others. A recent study by the Pew foundation (Bell, et al., 2004) found fewer people in rural areas use the Internet on a regular basis (52% of rural residents versus 66% of suburban residents and 67% of urban residents). About 29% of rural Internet users say their Internet service provider is the only one available to them: limited options mean residents of rural areas also often face increased costs and reduced services. About 25% of rural Internet users said they did not think a broadband connection to their home was available, compared to 5% of urban users and 10% of suburban users.

SURVEY DEVELOPMENT

The conceptual framework for the surveys, a critical component of our e-learning readiness assessment, began with a review of the literature and discussions with an e-learning provider. We then conducted site visits with three county DSS offices. Information from these sources was augmented by interviews with the North Carolina community college administrators and state government e-learning experts, who provided insight into the strengths and challenges of using technology within state organizations. Once complete, readiness assessment surveys were administered to county DSS directors, county DSS information technology managers, child welfare social workers and supervisors, and Work First social workers and supervisors.

Readiness to participate in e-learning survey was organized in terms of human and organizational factors. Human factors we assessed include:

- **Commitment**: Are the leaders committed to e-learning? Is there "top down" support for e-learning?

- **Interest**: Overall, are workers, supervisors, and directors interested in e-learning?

- **Expectations**: Are there preconceived opinions and expectations about e-learning? If so, are they based on experience?

- **Comfort Using Technology**: Are learners comfortable using computers, email, and the Internet?

- **Support**: Who can workers turn to with questions about e-learning content?

Organizational factors we assessed include:

- **IT Support**: Is technical support available within the agency?

- **Availability of Technology**: Is Internet and email access possible from the work place? Do potential learners have access to the hardware and software necessary for e-learning?

- **Organizational Culture**: What is the agency policy regarding the use of the Internet and email at work? Are learners allowed to access the Internet and email at work? Can learners find a place at work to participate in e-learning? Can workers find time at work for participating in e-learning?

Stakeholder-specific issues were also assessed. For example, county DSS directors were asked about their interest in creating or partnering with other DSS agencies to provide technical and content support to learners; workers were asked whether they have a home computer with Internet access. We also obtained general feedback about the current training system.

A fundamental issue of survey research is to negotiate a balance between available resources and data quality. Various modes of data collection offer different advantages and disadvantages. For example, while our face-to-face interviews with experts and DSS staff offers the best data quality, they were also very expensive in terms of time and money.

Due to limited resources and a relatively short timeframe for this project, an Internet survey was conducted. Internet surveys are faster to implement and can be less expensive to administer than face-to-face or telephone interviews (Groves, et al. 2004). A comparison study between mail and Internet surveys found response rates for Internet surveys were slightly higher, had fewer skipped questions, more text on open-ended questions, and no difference on key statistics (Biemer & Lyberg, 2003).

The sampling frame for the supervisor and worker surveys was obtained from the North Carolina Statewide Training System (NCSTS) database. This database contains personnel information, work county name, and email addresses for North Carolina DSS workers who have attended North Carolina Statewide Partnership training. Permission to use the NCSTS for this purpose was obtained from the Division's Family Support and Child Welfare Services Staff Development Team Leader.

Email addresses for county directors were obtained from a directory that is updated annually. Email addresses for the agency IT managers were obtained by asking directors to provide this information.

All surveys followed the same basic protocol. First, an announcement email was sent informing potential respondents of the upcoming survey, followed by an email with a link to the online survey. Up to three follow-up reminders were sent. Directors that did not respond to the Internet survey were sent a paper survey. Additional information specific to each survey is provided in the section of this report pertaining to that survey.

To access the survey instruments used to conduct this readiness assessment, please go to <http://ssw.unc.edu/fcrp/allsurveys.pdf>.

Although we are confident in the findings contained in this report, readers should note that the analysis of the survey data we collected may be influenced somewhat by the fact that we were forced to use the training system database as a sampling frame because North Carolina does not have a child welfare workforce database. Without a workforce database it is possible neither to create a probability-based sampling frame nor to compare characteristics of individuals not included in the sampling frame with the population under study (i.e., DSS employees). This leaves open the potential for missing key members of the population (noncoverage error) and does not allow for post-survey statistical correction or weighting for nonresponse.

Noncoverage error can limit the conclusions policymakers can draw from the worker and supervisor data. In the context of this readiness assessment, noncoverage error can result from the fact that some counties conduct in-house training, so their workers are not in the state's training database. Ultimately this means that DSS directors, IT managers, supervisors, and workers whose answers are reported here are generally more active in traditional training opportunities, and the extent to which this is a limitation cannot be assessed or corrected in the absence of a work force database.

However, we are confident that the information presented in this report will prove extremely useful to those wishing to understand North Carolina county departments of social services' readiness to engage in e-learning.

DSS AGENCY SITE VISITS AND EXPERT INTERVIEWS

SUMMARY

Three site visits to North Carolina county DSS agencies were performed to evaluate access to and use of computer and Internet technology within the agencies. During site visits, it was noted that workers in the medium and large counties had private offices or large cubicles with high walls. Workers in the small county had noticeably older computers with smaller monitors (15 inches) and worked in cubicles with low walls, conditions that would present a challenge for e-learning.

All three counties had broadband Internet access and IT support. However, the small county contracted out for IT support, and in this agency workers seemed far less confident of their IT system (e.g., "we have email, when it works").

During site visits the directors were unanimous in their support of e-learning. Workers appeared more cautious, but appreciated the advantages of e-learning and were willing to participate. An effort was made to identify community resources that could be leveraged by county DSS directors. While all DSS agencies should be in proximity to a North Carolina community college, it will be up to the local DSS director to negotiate the use of community college's resources for the purpose e-learning. The same is true for resources available through North Carolina Area Health Education Center (AHEC) system.

Following the site visits we conducted interviews with North Carolina community college administrators and state government e-learning experts. These interviews provided insight into the strengths and challenges of using technology within state organizations.

According to experts, the minimal hardware and software requirements for e-learning should be made known to participants. These requirements should be fairly rigorous but not require the use of leading-edge technology. For example, participants should be expected to have broadband Internet access, a computer with an up-to-date operating system (e.g., Windows 2000 or higher) a sound card with speakers or earphones, and commonly available multimedia software (e.g., Macromedia Flash). The experts we consulted suggested that e-learning courses should be designed with this level of technology in mind. They also emphasized that it is important for participants to have uninterrupted time and privacy to participate in e-learning activities.

A. DSS Agency Site Visits

Three site visits to county DSS agencies were performed to assess the availability of computer and Internet technology within these agencies. Visits consisted of open-ended conversations with the county director or child welfare manager, and available supervisors and line workers.

PROCEDURES

Site visits were conducted at county DSS agencies in January and February 2005. Counties were selected on the basis of staff size (small, medium, and large). All participants were assured that neither their personal identity nor the identity of their county would be revealed; limited demographic information is presented in this report to avoid identification by deduction.

The agenda for each visit included a conversation with the county director, IT manager (if applicable), staff development person (if applicable), and any available child welfare supervisors and child welfare workers. Exactly who we spoke with upon arrival depended on the availability of various individuals; emergencies and inclement weather played a role on every occasion. Ultimately we spoke with:

Small County:	The director, 2 supervisors, and 6 workers
Medium County:	The director and assistant director, 1 staff development trainer, and the information technology supervisor
Large County:	The children's services assistant director, 2 staff development trainers, 1 program manager, 3 supervisors, and 3 workers

SUMMARY OF SITE VISITS

Summary of Director Comments

- All firmly believe that technology is the future and it makes sense to use it for training to reduce costs (in terms of travel expenses, time away from work and family).
- All believe e-learning would make it easier for workers to get into appropriate training courses.
- E-learning can offer supervisors an opportunity to be more closely involved with their workers' training and can more effectively facilitate transfer of learning.
- Directors liked the prospect of having a more flexible training schedule for their workers.
- Directors expressed a strong belief that clinical skills would require interpersonal practice that can only be offered through classroom training.
- Directors were concerned that e-learning may not be for everyone, and that some workers just learn better through group interaction.
- The self-discipline required to complete an online course could be an issue for some learners.
- An inquiry about pooling resources with other counties to hire a shared content specialist / learning support person drew a mixed reaction. While directors felt it might be a good idea in theory, they argued convincingly that it might not work in practice. For example, one objection raised was that the work load would probably not be equally divided among

counties, in which case salary allocation and justification could be an issue for county commissioners.

Summary of Worker, Supervisor, and Staff Development / Trainer Comments

- Line workers seemed more cautious about e-learning but could understand the potential for saving time and travel costs, and would be willing to participate.

- Overall there was an expectation that e-learning participants should be able to ask questions and get answers in a timely manner.

- The staff development trainers saw themselves in the role of learner support only within their agency.

- Of those interviewed there was strong agreement that knowledge could be taught via e-learning, but that skills should be taught in a group setting.

- Workers were generally confident of their Internet and email skills, but there was noticeable variation in the extent to which they were interested in using technology.

- About half of the workers we spoke with did not have a home computer with Internet access.

- Many workers were not interested in participating in e-learning outside of work hours. Some expressed strong opposition to the idea of participating in e-learning at home because it meant work would be encroaching even more into their personal and family time.

- Workers expressed a concern about lack of privacy at work and anticipated frequent interruptions.

General Observations

- All three counties had broadband Internet access and email.

- Significant differences were apparent between the small county and the medium/large counties in terms of computer equipment and IT support. The small county had much older computers with small (15-inch) monitors, contracted out for IT support, and had no computer lab or staff development trainer.

- At two agencies workers were observed working in cubicles, which can be an issue for participating in e-learning at work. To engage in e-learning activities at work, workers need some measure of privacy (e.g., a private office or quiet computer lab).

- All three county DSS's are in relatively close proximity (within 20 miles) of a community college.

B. Expert Interviews

The following is a summary of conversations and correspondence with:

- Distance learning coordinators for the NC Community College System
- A manager for an Area Health Education Center (AHEC)
- An e-learning coordinator with the NC Office of State Personnel

Conversations touched on a broad range of topics. Our primary goal was to discern whether these organizations could share technological resources with county DSS agencies. Our secondary goal was to learn from their years of experience with e-learning.

Distance Learning Coordinator, NC Community College System

The 58-campus North Carolina community college system is experiencing phenomenal growth in e-learning enrollment. All NC community colleges (NCCC) are part of the North Carolina Information Highway, a state-of-the-art fiber optic Internet system. The community colleges also use an e-learning assessment to raise participants' awareness of critical issues affecting e-learners

Table 1 details community colleges' increase in distance learning from 1998 through 2003. Distance learning provided by NCCC involves three primary modes of distribution: online (web) courses, telecourses, and two-way video courses via the NC Information Highway.

Table 1: Registration History in Curriculum Courses
Source: http://www.ncccs.cc.nc.us/Distance_Learning/docs/DL%20Strategic%20Plan.doc

Course Type	1998-99	1999-00	2000-01	2001-02	2002-03	4 yr. % change
Web Courses	9,599	17,251	30,352	55,526	83,414	769%
Telecourses	17,497	18,585	14,614	15,542	15,372	-12%
Two-Way Video	5,028	7,168	6,261	8,348	9,278	85%
Other*	1,232	1,345	2,570	3,407	3,864	214%
Totals	33,356	44,349	53,797	82,823	111,928	236%

Other courses include teleweb courses, satellite, and other delivery methods

In order to measure the contribution of e-learning to NCCC revenue it is assumed that one full time equivalent (FTE) student takes 16 credit hours per semester. Translated into dollars, during the 2002-03 academic year one FTE was worth $3,850. Using this figure, distance learning delivered courses contributed approximately $13,466,337 to the NCCC system.

Table 2 shows the community colleges' explosive growth in distance-delivered continuing education courses (i.e., courses not offered for college credit).

Table 2: Registration History in Continuing Ed. Distance Learning Courses, 2001-03
Source: http://www.ncccs.cc.nc.us/Distance_Learning/docs/DL%20Strategic%20Plan.doc

	2000-2001	2001-2002	2002-2003	Totals
Number of Students Served	1,353	10,697	16,083	28,133
Membership Hours	33,150	277,284	465,363	775,797
Cont. Ed. ICR FTE	48.17	403.00	676.35	1,127.52

NCCC is a state-administered, locally-managed organization. While the creation of convenience contracts and resource sharing among colleges is one of its goals, NCCC does not at this time have an agreement with the NC Division of Social Services to support e-learning. If a memorandum of understanding between the Division and the NCCC System were crafted at the state level, it would be the responsibility of each county DSS director and his or her local community college president to negotiate an agreement whereby county workers could access community college resources for the purpose of completing state-mandated professional development via e-learning.

Manager, North Carolina Area Health Education Center (AHEC)

AHEC currently provides two e-learning resources for the education of health care professionals: AHEConnect and the AHEC Digital Library.

AHEConnect is the health care professional's connection to personal growth and skill development. Built on a 25-year tradition of excellence, these Internet-based, continuing education courses are peer-reviewed, fully accredited, and created by recognized subject experts. An interactive learning management system, AHEConnect allows learners easy access to quality online continuing education courses covering a broad array of topics of interest to health professionals. AHEConnect's website is <www.aheconnect.com/ahec/default.asp>

The AHEC Digital Library (ADL) is an online resource that improves access to current medical literature and other quality health information resources for North Carolina health care professionals. Anyone can access the AHEC Digital Library as a guest. However, certain licensed resources (many of the full-text journals and books) are available only to ADL members. The AHEC Digital Library's website is <http://library.ncahec.net>.

Three of the state's nine AHECS offer video conferencing. One of these, Mountain Area AHEC, provides videoconferencing services for health-related agencies, groups, and individuals whose work is consistent with their mission. Mountain Area AHEC video conferencing rates are as follows:

- Non-profits: $50 per hour for room rental plus third party network charges
- For-profits: $100 per hour for room rental plus third party network charges

Each AHEC has a library with computers with an Internet connection. It is not known whether the AHECs have worked directly with DSS agencies to provide e-learning.

E-Learning Coordinator, North Carolina Office of State Personnel

This person provided the following insights based upon her extensive experience developing e-learning material for state personnel.

About e-learners:

- The instructor-learner interaction is critical to success.

- The e-learner is the center of the learning process (rather than instructor).

- Target audiences can often benefit from training on how to be a "good e-learner."

About curriculum development:

- E-learning makes it easier to disseminate information and keep information up-to-date.

- E-learning is more expensive to develop than a comparable traditional training course.

- E-courses take much more time to develop than a traditional classroom course and development is "front-loaded," which is to say most of the work lies in preparing the material to be presented via a particular medium (e.g., the Internet).

- If you build a quality product they will come; if not, credibility is quickly lost. (Quality is defined in terms of your ability to engage and meet user learning needs.)

- Not everything is meant to be taught via the Internet.

About the technology:

- Build a system based on reasonable, minimal hardware / software requirements. For example, current requirements would include:

  — Broadband Internet access
  — Sound card (with either speakers or ear phones)
  — Access to email and email attachments
  — Video software (Real Player or Windows Media Player)
  — Macromedia Flash
  — Internet Explorer version 6 or higher
  — Windows98 or higher

DIRECTOR SURVEY

SUMMARY

Eighty-five of the 100 North Carolina county DSS directors responded to the e-learning readiness assessment survey, for a response rate of 85%.

Directors support e-learning and believe it will play an important role in the future of training for DSS employees. Their motivation for this support appears to be based primarily on reducing travel costs, having more flexibility in scheduling training, and reducing workers' time away from the office. Statistical analysis identified a small group of 21 directors who are neither interested in nor committed to e-learning, and who do not believe it is important.

Finding time at work, managing change, and avoiding interruptions were the challenges directors most commonly expected for e-learning. Directors were concerned about:

- Whether workers could find uninterrupted time at work to participate in e-learning (10 counties report their workers use cubicles)

- Whether e-learning would be appropriate for all types of materials (especially, skill-based training)

- Whether e-learning would be a good fit for all workers (i.e., workers with different learning styles and levels of comfort with technology)

Most directors (over 90%) reported that their workers are assigned a work email account; however, two directors reported that worker emails go to a contact person, and one director reported that some workers do not have email accounts.

About 10% of the directors indicated that there is no or very limited IT staff available to support e-learning related activities in their agencies. Many directors (30%) felt their IT person would be able to offer only minimal IT support (2-5 hours per week).

Most county directors appear interested in and supportive of e-learning. However there may be a significant minority who are notably less interested in e-learning, and whose counties have very limited IT support. While no significant differences were detected for key statistics by county level, Level 1 counties did appear more likely to lack in-house IT support.

It is concluded that those directors who did not respond to the survey probably have a lower opinion of e-learning than those who did respond.

A. Director Survey Data Summary

DIRECTORS' INTEREST IN AND COMMITMENT TO E-LEARNING

Directors were asked several questions about their personal interest in e-learning and interest in e-learning for their workers, as well as their commitment to supporting e-learning at their agency.

- General interest in having workers participate in e-learning is very high, about 95%.

- Personal interest in participating in e-learning is high; however, almost 15% did not express a personal interest in e-learning.

- Directors' interest in common types of e-learning for workers is summarized below. Five scenarios were described and interest for each was rated on a five-point scale: 1-very low, 2-low, 3-moderate, 4-high, 5-very high.

	Individualized, entirely self-paced online course	Group facilitated online course	Blended e-learning course	Teleconferencing course	Course on CD
Mean	3.7	3.5	3.6	3.1	3.5
Median	4.0	4.0	4.0	3.0	4.0
Mode	4.0	4.0	4.0	3.0	4.0
Std. Deviation	.94	1.04	1.05	.98	1.03
1 Very Low	1.2%	3.6%	2.4%	1.2%	4.9%
2 Low	9.5%	13.3%	13.1%	26.5%	9.8%
3 Moderate	26.2%	27.7%	29.8%	43.4%	30.5%
4 High	42.9%	38.6%	32.1%	16.9%	39.0%
5 Very High	20.2%	16.9%	22.6%	12.0%	15.9%

Directors appear to have a preference for having workers participate in an entirely self-paced online course, and a preference against teleconferencing. This is consistent with their reported interest in increasing flexibility and reducing time out of the office, given that teleconferencing requires specific hours and travel to a reception site.

Directors' commitment to e-learning and their sense of its importance were measured by the following questions:

	Very High	High	Moderate	Low	Very Low	Average
As Director, please rate your commitment to having your Agency participate in e-learning?	25% (15)	50% (30)	23.3% (14)	1.7% (1)	0% (0)	3.9
As Director, please rate the importance of e-learning for your Agency?	19% (11)	53.4% (31)	25.9% (15)	1.7% (1)	0% (0)	3.8

Once again, directors overall reported a high rating for their commitment to e-learning and for the importance of e-learning at their agency.

The four individual measures of interest, commitment, and importance of e-learning were further analyzed using cluster analysis, a statistical technique used to identify groups of individuals with similar scores on a series of measures. We identified three groups that differ in their degree of support for e-learning. The first group is highly interested in and supportive of e-learning, the second group is less interested but still supportive. The third group appears less enthusiastic on all items.

	q1 Director interest in participating in an e-learning course	q2 Director interest in having workers participate in e-learning	q59 Commitment to e-learning	q60 Importance of e-learning
	Mean	Mean	Mean	Mean
Group 1 (n=28)	3.9	4.0	4.5	4.3
Group 2 (n=29)	2.9	3.2	4.1	4.0
Group 3 (n=21)	2.5	2.8	2.8	2.9
	4 pt scale	4 pt scale	5 pt scale	5 pt scale

DIRECTORS' EXPERIENCE WITH E-LEARNING

The purpose of these questions is to gauge the extent to which directors' opinions are based on actual experience.

- Just over 42% (n=36) of the directors reported having personal experience with e-learning and that about one-third (n=28) of their agencies had been involved in some form of e-learning in the past two years. Twelve directors reported that they are currently developing an in-house e-learning training. Unfortunately there is no way to gauge the actual e-learning experiences to which the directors are referring. An informal definition of what constitutes e-learning can range from an online PowerPoint presentations to a semester-long university online course.

- A statistical analysis (cross-tabulation) was conducted to determine whether experience with e-learning is related to interest in e-learning, importance of e-learning, and commitment to e-learning. No significant relationship was found.

- Directors were concerned about use of complex technology; they expressed the belief that the more complex the technology, the more likely it is to run into problems.

- Most directors (n=56 or 66%) indicated an interest in forming an e-learning partnership; the most popular potential partners were the local community college, public health department, or another DSS agency. It is noteworthy that "another DSS agency" was not an option on the checklist, but was written into the "other" line by nine directors.

- Only three counties reported partnering with another organization on an e-learning project. Partners were a community college and two county governmental agencies.

DIRECTORS' EXPECTATIONS FOR E-LEARNING

The purpose of these questions is to identify directors' preconceived ideas about e-learning. This information will improve our ability to market e-learning to directors and address misconceptions in advance.

- Almost all directors agreed that factual information can be taught through e-learning. However, about 20% disagreed that skills can be taught through e-learning. If a skill-based curriculum is developed for e-learning additional effort should be made to promote the idea that skills can be taught via e-learning.

- Approximately 80% of the directors believe that it is important for workers to interact with a course facilitator and other e-learners. This is somewhat at odds with what most directors said earlier when they expressed a preference for "individualized, entirely self-paced online courses." The resources necessary for a course facilitator to provide individualized learner support would be significant.

- Discussion boards and conference calls were the preferred modes of communication between learners, and between learners and course facilitators.

- Over half the directors expected that an e-learning course should take less time to complete than a regular course; about a third thought it would take about the same time. Note: Ideally e-learning can be customized so that a learner only needs to spend time reviewing relevant material. This implies that e-learning can often require less time than a conventional classroom; a concept that is supported in the literature. However, ultimately it is up to the learner as to how much time is spent on an e-learning curriculum.

- There was strong agreement that new workers, experienced workers, supervisors, program managers, and directors can benefit from e-learning. Disagreement ranged from 3% to 7%, respectively.

- Directors were asked to select up to three of the primary benefits of e-learning. In order of selection, their most common choices were:

	Frequency	Percent
Reduction in travel costs for Agency	47	55.3
More flexibility in scheduling training	45	52.9
Reduce workers' time away from office	39	45.9
Ability for learners to direct their own learning	33	38.8
Ability to disseminate new information quickly	24	30.6
Greater opportunity to offer short, specialized trainings	23	27.1
Ability to customize trainings to what is directly relevant to the learner	20	23.5
More diversity in training choices	12	14.1

DIRECTORS' ASSESSMENT OF IT AND IN-HOUSE SUPPORT FOR E-LEARNING

- Seven directors indicated their agency had no in-house IT person; two said they contracted out for IT support and expressed concern about how to pay for any additional services.

- Many directors (30%) felt their IT person would be able to offer minimal IT support (2–5 hours per week).

- Only 16 counties have one or more staff development trainers. A staff development trainer could assist with the coordination of e-learning activities.

- While over half of the directors responding to this survey thought his or her agency had a good chance of obtaining funds for upgrading computer equipment in the coming two years, almost a quarter thought their chances of such funding were slim.

- Directors expressed mixed opinions regarding the role of supervisors in e-learning. They were generally supportive, but they also wondered, given supervisors' responsibilities, whether supervisors would really have time to support workers engaged in e-learning.

- Having a room or computer lab that could be set up for e-learning would address the absence of private offices and/or inadequate computer equipment. Thirteen directors reported their agency had at least one computer lab, and 29 said they had a room dedicated to training.

DIRECTORS' THOUGHTS ABOUT THE TIME AND PLACE FOR E-LEARNING

The purpose of these questions was to assess the workplace in terms of whether workers could find a place and schedule uninterrupted blocks of time to participate in e-learning. These questions were also intended to raise the awareness of directors about what is necessary for participation in e-learning.

- While most directors expressed confidence that supervisors and colleagues would not interrupt e-learning participants, 22% thought supervisors would interrupt and 34% thought colleagues would interrupt.

- Many (over 50%) thought it would not be easy to find time for e-learning. This is consistent with an analysis of an open-ended question pertaining to foreseen challenges, which is summarized below:

Challenges directors foresaw for using e-learning (from open-ended question) included:

Challenge	Number of mentions in comments
Finding time at work	28
Adapting to new method	13
Avoiding interruptions	9
None	3
Ensuring a high quality of training	3
Cost	2
Uncomfortable with technology	2
Losing benefits of classroom	1
E-learning is not for everybody	1
Finding space for e-learning	1
Physical disability	1

- Only three directors disagreed with the statement that workers would be allowed to participate in e-learning during regular work hours.
- Most directors (over 70%) thought it would be easy for workers to find a place at work for e-learning.
- Directors expected workers with cubicles to have more trouble finding a time and place at work where they would not be interrupted.
- The distribution of workers with a private office, shared office, and cubicle is presented in the following table.*

	Number of counties		
	Level 1	Level 2	Level 3
Percent of workers that have own office			
0%	5	5	5
1-33%	3	2	0
34-66%	5	3	0
67-99%	5	5	0
100%	24	6	2
Percent of workers that share an office			
0%	32	10	6
1-33%	5	6	0
34-66%	3	2	0
67-99%	2	1	0
100%	0	2	1
Percent of workers that have a cubicle			
0%	33	16	3
1-33%	1	1	0
34-66%	2	0	0
67-99%	2	2	0
100%	4	2	4

These questions were not included on the Director's mail survey; 70 counties are represented in this table (42 level 1, 21 level 2, 7 level 3)

DIRECTORS' ASSESSMENT OF EMAIL AND INTERNET ACCESS IN THE AGENCY

This section is focused on whether workers have email accounts, and the type of computer used by the director. We tried to address two key questions about email: "Do workers physically have access to email?" and "What is the agency policy regarding the use of email?" Directors' use of the Internet and email should give an indication of the extent to which they will allow workers access.

- Over 90% of the directors responding to our survey report that workers are assigned a personal work email account. However, one agency reported that workers do not have email;

two agencies reported all worker emails go to a contact person (i.e., workers do not have unique email accounts).

- All directors' report using a broadband Internet connection at their agency.

- Most directors' access email several times daily and use the Internet on a daily basis to access policy manuals, conduct professional research, and access online forms.

DIRECTORS' SATISFACTION WITH CURRENT TRAINING SYSTEM

- Most (80%) directors expressed agreement with the statement that the current training system meets child welfare workers' needs. However, nearly 40% felt that the training system did not meet the needs of Work First workers.

DEMOGRAPHICS OF RESPONDING DIRECTORS

	Years in social services	Years as Director of this agency	Number of Child Welfare workers	Number of Work First workers	Number of Child Welfare supvs.	Number of Work First supvs.
Mean	23.7	8.9	23.5	8.8	4.5	1.7
Median	25	7	14	4	3	1
Mode	30	2	7	1	1	1
Std. Deviation	8.6	7.5	25.8	21.1	5.2	3.2
Range	5 to 42	1 to 37	2 to 125	1 to 180	0 to 31	0 to 27

B. Statistics and Limitations for Director Survey

Eighty-five of the 100 North Carolina county DSS directors responded to the e-learning readiness assessment survey, for a response rate of 85%.

The director survey was initially disseminated by Internet, with a follow-up paper survey for non-respondents. Sixty of the 64 surveys completed online were usable; 40 paper surveys were mailed and 25 returned.

RESPONSE BY COUNTY DSS LEVEL

	Total	Survey	Overall Response Rate by Level
Level 1	51	46	90%
Level 2	39	30	77%
Level 3	10	9	90%
Total	100	85	85%

	Proportion of Surveys Returned by Internet	Proportion of Surveys Returned by Mail
Level 1	76%	24%
Level 2	66%	44%
Level 3	55%	45%
Total	70%	30%

Although there is some variability in the response rates, there is no statistically important relationship between county level and response rate, or county level and response type (mail or web).

LIMITATIONS

Nonresponse bias was analyzed by comparing key survey questions to survey mode (Internet vs. mail). It is assumed that directors who did not respond to either survey are more similar to those who took the mail survey than to those who took the Internet survey.

In order to minimize risk of capitalizing on chance differences, nonresponse analysis was conducted on four questions presented in the following table:

Non-response Analysis

		N	Mean	Standard Deviation	Significance level (p-value)
Q2 Director interest in having workers participate in e-learning (a)	Web	60	3.48	.536	.040*
	Mail	25	3.20	.645	
	Total	85	3.40	.581	
Q4 Ever participated in e-learning (b)	Web	59	.42	.498	.776
	Mail	24	.45	.508	
	Total	83	.43	.498	
Q59 Commitment to e-learning (c)	Web	57	4.00	.755	.099
	Mail	24	3.66	.963	
	Total	81	3.90	.830	
Q60 Importance of E-learning (c)	Web	55	3.90	.727	.222
	Mail	24	3.66	.963	
	Total	79	3.83	.807	

* Significant difference between web and mail surveys at p=.05
(a) Measured on a 4 point scale: 1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree
(b) Measured on a 2 point scale: 0=no, 1=yes
(c) Measured on a 5 point scale: 1=very low, 2=low, 3=moderate, 4=high, 5=very high

Analysis of variance (ANOVA) indicates those responding by mail had a statistically significant lower response to survey question 2 (…interest in having workers participate in e-learning). This suggests that if all 100 county DSS directors had responded to the survey the overall interest in having workers participate in e-learning would be less than what is indicated by the data we have collected. In other words, we have reason to believe that county DSS directors as a group are actually less enthusiastic about e-learning than our results suggest.

It is also noteworthy that those responding by mail showed more variation in their responses (as indicated by the larger values for standard deviation) and had slightly more experience participating in e-learning.

IT MANAGER SURVEY

SUMMARY

Sixty-four of North Carolina's 100 counties completed IT surveys. All responding IT managers reported that broadband Internet access is available at their county DSS agency. All agencies use Microsoft operating systems and productivity software (e.g., Word, Excel); Acrobat and Windows Media Player are commonly available. Unfortunately, some counties report that about half of their workers' computers use Windows 95 or 98.

Issues such as small monitors, lack of sound cards, and outdated operating systems occur in Level 1 and Level 2 counties. Nearly half of the responding counties report that over 50% of their workers use a computer with a small (15-inch) monitor. Most agencies have computers with CD players, but few have DVD players. About three-fourths of the agencies have computers with a sound card, but very few have earphones available. Most workers have their own computer, but a few share. Twelve of the 64 IT managers (19%) said their agencies have a computer lab.

A significant portion of the IT managers surveyed (25 of 64) reported that they are either part of the county government IT support staff or a private contractor; 18 of that 25 are from a Level 1 county, which suggests that over half of Level 1 counties may not have onsite IT support.

Most IT managers believe workers are comfortable using email and the Internet, but that they could benefit from training. Ten respondents (or 15%) said the typical worker at his or her county DSS was uncomfortable using computers.

Nearly all respondents reported their workers are allowed access to email while at work. However, one county does not allow this, and the IT manager in another county volunteered that workers must have their supervisor's permission to access email.

Spam filters may present an obstacle. In 11 counties e-learning providers will have to be manually added to a list of allowed email addresses before workers can receive their emails. Based on this, it is possible that approximately 20 counties will require this extra effort before learners can exchange email with a training facilitator.

In conclusion, most counties have broadband Internet connection. However, there is a distinct minority of counties that are not well prepared for e-learning due to one or more of the following: outdated computer equipment, limited or no IT support, policies that limit email / Internet access, and workers who are uncomfortable using computers and the Internet.

A. IT Manager Survey Data Summary

IT MANAGERS' EXPERIENCE WITH E-LEARNING

- Most IT departments (86%) reported no experience supporting e-learning for DSS.

- Of the eight county IT managers who say they have supported e-learning at their DSS, all reported that Internet technology was involved; four say that a CD or DVD was involved. None reported using video conferencing. The target audience for these e-learning events included children's services (3), and the entire agency staff (5). According to these eight IT managers, these e-learning projects presented the following successes and challenges:

Worked Well	Challenge
No travel time or expense.	Having time for staff to participate.
Bandwidth consumption for 11 workers did not pose a network problem nor did the use of the built-in sound processor.	Lack of headphones and external speakers.
Internet e-seminar type programs are easy to access and can be used by the staff member at their desk.	The agency's multimedia equipment is limited and older.
It worked well because it was entirely Internet-based and designed to function with Microsoft Windows Media Player. I [could not have] asked for a simpler setup.	Success depends chiefly on the willingness of the worker.
We had no problem using CDs or the CBT training provided by the State.	Getting users to take course.
Access to Training Database.	

GENERAL CONCLUSIONS ABOUT IT STAFF IN COUNTY DSS AGENCIES

- Many (n=24 or 34% of those responding to this question) reported one or fewer IT staff.

- Five Level 1 counties reported a FTE IT staff of less than 1 (i.e., the IT person is part-time).four level 1 counties reported no IT staff.

- 25 counties report that their IT department is part of the county government or a contracting business; in other words, those DSS agencies clearly do not have in-house IT support.

- Most (but not all) IT staff provides LAN, Internet, and email support; however, about 8% do not provide this level of support.

- Most IT staff (69%) report they would prefer to personally download and install any specialized software related to e-learning, rather than let learners do it themselves.

		DSS Level			Total
		Level 1	Level 2	Level 3	
This IT department is part of . . .	County DSS agency staff	14	21	4	38
	County Government	14	6	1	21
	Other (please specify)	4	0	0	4
	Total	32	27	5	64

INTERNET AND EMAIL ACCESS

- All 64 IT managers in our survey reported their counties have a broadband Internet connection. Most counties use a T1 line, a few report using cable (3) or DSL (1).

- All counties report that workers have Internet access from their computers.

- Most responding counties (83%) use email spam protection software.

- Eleven counties reported that e-learning providers will have to be manually added to a list of allowed email addresses before workers can receive the email from e-learning course facilitators or participants.

- Ten counties report that spam protection is provided by ncmail.net, a web mail service provided to North Carolina state employees.

- About 10% of responding counties do not assign a work email account to workers, which suggests that workers in these counties must use an email provider such as ncmail or yahoo. This presents an issue in that non-business email accounts cannot be disabled if a worker leaves the agency.

- All but one county allows workers to access email and the Internet at work. However, there is some indication that in some counties access is granted only with permission from the worker's supervisor.

COMPUTER HARDWARE

- Two counties reported that a few workers (1%) share a computer.

- Headphones are generally not available.

- While over half of the counties report that 80% or more of their workers have a computer monitor of 17 inches or larger, 18 counties reported that 50% to 100% of their workers use a 15-inch monitor. It would be reasonable to conclude that a significant number of county DSS workers have 15-inch monitors and that e-learning applications should be designed with this constraint in mind.

- All counties report that workers have access to a printer. In general, printing is restricted to work-related materials.

- Nearly 80% of responding counties report all computers are equipped with a CD player; 5% say fewer than half of their computers have a CD player.

- Nearly two-thirds of the responding counties said that not a single computer in the agency had a DVD player.

- Nearly 72% report all computers have a sound card; 5% report that one-fourth or fewer computers have a sound card.

- While most (60%) counties report workers' computers are equipped with a plug-in for earphones, only three counties say they have earphones available for use.

- Issues such as small monitors, lack of sound cards, and outdated operating systems are equally common in Level 1 and Level 2 counties.

COMPUTER SOFTWARE

- In eight counties (13%) half or more of the computers use Windows 95 (1) or Widows 98 (7); computers in the rest of the responding counties use Windows 2000 or Windows XP. None use Macs.

- Most counties (75%) use Internet Explorer v6. Netscape and Firefox are also used, but much less often.

- Nearly half (46%) use Microsoft Outlook, about a quarter use Microsoft Outlook Express; other counties mentioned using the following email software: Groupwise, Lotus notes, Netscape, and ncmail.

- All responding counties report having Acrobat reader and Word available. All but one has Excel. Eleven agencies do not have PowerPoint.

- Macromedia Flash is available in just over half the counties. Windows Media Player is available in 59 of the 64 counties (92%).

- Three counties reported that some workers have mobility issues (carpal tunnel) and vision issues that limit their use of the computer.

COMPUTER LABS

- Twelve IT managers reported that their agencies have a computer lab. Six of these have more than one lab.

- Nine of the labs have 17-inch monitors, two have 19-inch monitors, and one has 15-inch monitors.

- Nine labs have a printer available.

- In 11 labs computers are capable of reading CDs; in two they can read DVDs. Computers in 10 labs have sound cards; in nine labs computers have sound cards; in six labs computers have speakers. No labs have computers with web cameras.

- Most labs use Win 2000 or XP, but one uses Windows 95 and another uses Windows 98.

- Most computers use Internet Explorer v6 as their web browser.

- Five labs do not have email software on the computers; six use Microsoft Outlook; one uses Outlook Express.

- Of the 12 labs, all have Word and Acrobat reader, 11 have Excel, nine have PowerPoint. Six labs have macromedia Flash, 10 have Windows Media player, and five have Real Player.

IT MANAGERS' VIEW OF WORKERS' COMFORT LEVEL TECHNOLOGY

- Very few responding IT managers thought DSS workers were uncomfortable using email (3) or the Internet (2); but 10 thought their workers were uncomfortable using computers in general.

- However, most IT managers thought DSS workers would benefit from basic training on using the Internet (90%), email (70%), and online discussion groups (86%).

DEMOGRAPHICS OF RESPONDING IT MANAGERS

- Most respondents (55%) have more than 5 years experience with their county DSS agency, and 90% have more than 5 years experience in the IT field.

- Eight respondents volunteered that they were not in an IT position (e.g., business or budget positions) and did the IT work because they were the ones who "knew how."

B. Statistics and Limitations for IT Manager Survey

RESPONSE RATE

Response rate for the IT survey was 64%. Seventy-two surveys were initiated but four did not consent to the survey, three did not answer any questions, and one person took the survey twice.

RESPONSE BY COUNTY DSS LEVEL

	Total	Survey	Response rate: Overall by level
Level 1	51	32	60%
Level 2	39	27	69%
Level 3	10	5	50%
Overall	100	64	64%

LIMITATIONS

While the response rate is acceptable, a number of counties are not represented in this section of the e-learning readiness assessment report.

CHAPTER 5
SUPERVISOR SURVEY

SUMMARY

We contacted 638 county DSS supervisors by email and invited them to participate in our online survey; 213 supervisors responded, for a response rate of 33%. Seventy-nine counties are represented in the supervisor survey results.

Most supervisors rated themselves as having a high level of commitment to e-learning and believe that e-learning is important for their workers. However, a significant minority (about one third) rated their commitment to and the importance of e-learning as moderate or low. Statistical analysis identified a small group of supervisors who are neither interested in nor committed to e-learning, and who do not believe it is important. Supervisors with e-learning experience have more favorable opinions about e-learning.

Supervisors appear to be good candidates for e-learning. They report using the Internet and email on a regular basis. They also tend to believe e-learning is best for knowledge-based training and not well suited for new or inexperienced workers who may need to learn more practice skills.

Supervisors want to be involved with their workers who participate in e-learning. Supervisors' preferred form of involvement is monitoring their worker's progress. Supervisors also believe it is important for workers to interact with a course facilitator and other e-learners; the preferred mode of communication is email or chat room, although a small percentage of workers apparently do not have a private work email address. Supervisors believe the benefits of e-learning lie in the immediate rewards of reduced travel cost, reduced travel time, and increased flexibility in scheduling training. In general, supervisors expect that e-learning should take less time than conventional training, and believe it should require no more than two hours during a work day.

Finally, supervisors' biggest concerns were finding time for their workers to participate in e-learning and avoiding interruptions. About a quarter of the supervisors who responded to the survey believe that finding a quiet place with adequate computer equipment during work hours will be a significant challenge for e-learners. Supervisors were also concerned about their worker's computer skills, the quality of the e-learning, and worker interest and commitment to e-learning.

A. Supervisor Survey Data Summary

SUPERVISORS' INTEREST IN AND COMMITMENT TO E-LEARNING

- Eighty-eight percent of supervisors agreed or strongly agreed that their personal interest in e-learning is high.
- Ninety percent of supervisors agreed or strongly agreed that their interest in having workers participate in e-learning is also high.

The table below summarizes supervisors' interest in having workers participate in specific types of e-learning.

	Individualized, entirely self-paced online course	Group facilitated online course	Blended e-learning course	Teleconferencing course	Course on CD
SUMMARY STATISTICS					
Mean	3.24	3.39	3.40	3.20	3.10
Median	3	3	3	3	3
Mode	3	4	3.4	3	3
Std. Deviation	1.1	1	1	1	1.1
SCALE VALUES & PERCENTAGES					
1 Very Low	5.6%	3.3%	4.2%	5.2%	6.6%
2 Low	16.9%	15.0%	12.7%	18.3%	23.5%
3 Moderate	35.2%	32.9%	32.4%	35.2%	30.5%
4 High	28.2%	33.3%	32.4%	27.7%	27.2%
5 Very High	11.7%	13.1%	13.6%	9.9%	9.4%

There is no strong preference for any single mode. However, group-facilitated online courses and blended learning courses are viewed more favorably than training delivered via self-paced online courses, teleconference, or CD.

Supervisors' commitment to and belief in the importance of e-learning were measured by the following questions:

	Very High	High	Moderate	Low	Very Low	Average
As supervisor, please rate your commitment to having your workers participate in e-learning.	17% (32)	40% (77)	34% (65)	7% (13)	2% (4)	3.63
As supervisor, please rate the importance of e-learning for your workers.	15% (27)	38% (70)	36% (66)	10% (18)	2% (3)	3.54
					Total Respondents	193
					(skipped this question)	45

Most supervisors rated themselves as having a high level of commitment to e-learning and believe that e-learning is important for their workers. However, a significant minority (about one third) rated their commitment to and the importance of e-learning as moderate and a few expressed a low rating.

Statistical analysis (cluster analysis) identified a small group of supervisors who are clearly not interested in e-learning, not committed, and do not believe it to be important. Average scores for each group on each question are listed below.

	I am interested in e-learning training as continuing professional development.	Interested in having my workers participate in e-learning.	Your commitment to having your workers participate in e-learning?	The importance of e-learning for your workers?
1 (n=59 or 33%)	3.9	3.9	4.4	4.2
2 (n=105 or 58%)	3.0	3.0	3.4	3.3
3 (n=16 or 9%)*	1.7	1.9	2.0	2.1
	4 pt scale	4 pt scale	5 pt scale	5 pt scale

Approximately 24% of the respondents did not fit into any of these groups.

SUPERVISORS' EXPERIENCE WITH E-LEARNING

The purpose of these questions is to gauge the extent to which supervisors' opinions and expectations about e-learning are based on experience.

Almost 25% (or 53) of the supervisors reported having personal experience with e-learning. While most (24) had taken only one course, many (21) had taken two or three, and one supervisor had taken five online courses. This raises the question: do supervisors with e-learning experience respond differently from others on items pertaining to interest in various types of e-learning?

Overall, those with e-learning experience have a more favorable view of e-learning. Supervisors with e-learning experience are more interested in participating in e-learning (p-value=.09) and in having their workers participate in a group-facilitated online course (p-value=.03). (Note: Due to the exploratory nature of this analysis a probability value of 0.10 is used to determine statistical significance instead of the traditional 0.05.)

SUPERVISORS' EXPECTATIONS FOR E-LEARNING

The purpose of these questions is to identify preconceived ideas about e-learning. This information will improve our ability to market e-learning to supervisors and address any misconceptions.

- Almost all supervisors (99%) agreed or strongly agreed that factual information can be taught through e-learning. About 45% felt that skills cannot be taught through e-learning.

- Over 90% of the supervisors agreed or strongly agreed that it is important for workers to interact with a course facilitator and other e-learners. This is consistent with an earlier question where supervisors expressed a slight preference for blended courses and facilitated group online courses.

- Personal email was supervisors preferred mode for communication between learners and course facilitators.
- Personal email and chat rooms were nearly equally preferred modes of communication between learners.
- There was overwhelming agreement (ranging from 91% to 95%) that experienced workers, supervisors, program managers, and directors can benefit from e-learning. However, only about 66% agreed that new workers could benefit from e-learning.

Supervisors were asked to select up to three of the primary benefits of e-learning. In order of selection, their most common choices were:

Perceived benefits of e-learning	Frequency	Percent
Reduction in travel costs for agency	118	59.6
More flexibility in scheduling training	104	52.5
Reduce workers time away from office	95	48
Ability to disseminate new information quickly	88	44.4
Ability for learners to direct their own learning	71	35.9
Greater opportunity to offer short, specialized trainings	69	34.8
Ability to customize trainings to what is directly relevant to the learner	56	28.3
More diversity in training choices	38	19.2

SUPERVISORS' SUPPORT FOR E-LEARNING

The purpose of these questions is to identify ways that the agency and supervisor can support workers participating in e-learning.
- 90% of supervisors strongly agreed or agreed they would like to be involved with their workers as they proceed through an e-learning training. Most expressed a desire to monitor their workers' progress (37%); the other two options (taking the training with them or meeting regularly to discuss the materials) were evenly divided at about 30% each.

SUPERVISORS' THOUGHTS ABOUT THE TIME AND PLACE FOR E-LEARNING

- Just over half (50.5%) of the supervisors expected that an e-learning course should take less time to complete than a classroom course; about a third thought it would take about the same time. Again, just over half (50.7%) thought an acceptable amount of time on an e-learning activity would be 1 to 2 hours in a given day.
- Supervisors were provided with a description of the minimal computing equipment and the need for access to a quiet place to participate in e-learning and asked if such a situation would be available to workers at their agency: 75.5% thought workers could have access to such a place.

- While most agreed that workers could (a) find a quiet place, (b) schedule a time for e-learning, and (c) participate in e-learning during normal work hours, a significant minority disagreed (24%, 31%, 28%, respectively).

SUPERVISORS' ASSESSMENT OF EMAIL AND INTERNET ACCESS IN THE AGENCY

This section is focused on the key issue of whether workers have access to the Internet and email accounts. The two most important questions about email are: (1) Do workers have access to a personal email account that is not shared with anyone? (2) What is the agency policy regarding the use of email?

Internet and email
- Nearly all supervisors reported having Internet access from their work computer (99.5%).

- Most report having a broadband Internet connection (86.4%); four supervisors reported having a dial-up line which this is inconsistent with reports from other supervisors from the same counties, who say they have a broadband connection. It could be that some are confusing a DSL connection with a conventional phone line connection: either can connect to a conventional phone-jack.

- Supervisors use the Internet at work to access online forms (94%) and policy manuals (94%). Many also conduct professional research (85.4%).

- Supervisors use email on a daily basis (97%), mainly to communicate with colleagues (99%), and their workers (94.5%), and to use a social work listserv (74.9%). Some use email to communicate with clients (27.1%).

- A small percentage of supervisors (2.5%) share their work email account with their workers; the rest have a personal work email.

- All supervisors reported that workers at their agency are assigned a personal work email account; a small percentage workers reportedly share an email account (2%) or get their email through a contact person (2%). In total 6.5% of the supervisors report that their workers do not in effect have a private email account.

CHALLENGES SUPERVISORS EXPECT TO ENCOUNTER

Supervisors' comments regarding challenges for workers pertain mainly to finding time at work and avoiding interruptions. Several supervisors expressed concern about their workers' computer skills and whether the e-learning technology in and of itself would create confusion that would undermine learning.

The eleven themes below were identified from the 150 supervisor responses to the open-ended question: "What do you believe will be challenges for workers who participate in e-learning?"

Challenge	Times Mentioned
Finding / making time at work	83
Being interrupted because of work	33
Workers have poor computer skills	15
Workers will not complete training	9
Poor computer equipment	9
Quality of e-learning will be poor, workers will get bored, won't learn, etc.	9
Workers will always prefer classroom	8
No motivation to engage in learning	7
No support to answer questions, help with computer problems	7
Workers will get behind on work	6
Overall resistance to change	6

Clearly, finding time at work is the biggest concern, followed by avoiding interruptions and insufficient computer skills. Supervisors also seem worried their workers will not complete the training, and they have concerns about the quality of the e-learning and about workers' interest and commitment to e-learning.

DEMOGRAPHICS OF RESPONDING SUPERVISORS

	Years as Supervisor at this agency	Number of Child Welfare workers	Number of Work First workers
Mean	2.9	6	4
Median	5	5	3
Mode	1	5	2
Std. Deviation	5.1	2.7	2.9
Range	1< to 26+	1 to 24	1 to 11
Number answering	193	154	44

Age of Responding Supervisors

		Frequency	Percent
Valid	20-25	1	0.5
	26-30	4	1.9
	31-35	24	11.3
	35-40	36	16.9
	41-45	28	13.1
	46-50	39	18.3
	51-55	31	14.6
	56-60	17	8.0
	61-65	6	2.8
	Total	186	87.3
Missing	System	27	12.7
	Total	213	100.0

Gender of Responding Supervisors

		Frequency	Percent
Valid	Female	168	78.9
	Male	23	10.8
	Total	191	89.7
Missing	System	22	10.3
	Total	213	100.0

Highest Degree Attained by Responding Supervisors

		Frequency	Percent
Valid	Associate's degree	13	6.1
	Bachelor's Degree	128	60.1
	Master's Degree	45	21.1
	Total	186	87.3
Missing	System	27	12.7
	Total	213	100.0

Highest Social Work Degree Attained by Responding Supervisors

		Frequency	Percent
Valid	Bachelor's Degree	47	22.1
	Master's Degree	28	13.1
	NA	105	49.3
	Total	180	84.5
Missing	System	33	15.5
	Total	213	100.0

Supervisors' Service Type

		Frequency	Percent
Valid	1 Child Welfare Services	143	67.1
	2 Work First Services	27	12.7
	3 Child Welfare and Work First Services	7	3.3
	5 Other	18	8.5
	Total	195	91.5
Missing	System	18	8.5
	Total	213	100.0

B. Statistics and Limitations for Supervisor Survey

RESPONSE RATE

Of 638 county DSS supervisors contacted by email and 213 responded for a response rate of 33%. Seventy-nine counties are represented in the supervisor survey results.

RESPONSE BY COUNTY DSS LEVEL

	Total counties	Number of counties represented by level	Percent of counties included by level
Level 1	51	36	70%
Level 2	39	33	85%
Level 3	10	10	100%
Total	100	79	

LIMITATIONS

The extent to which the results of this survey can be extended to all North Carolina county DSS child welfare and Work First supervisors is limited for two reasons. First, we do not and cannot know the extent to which the sampling frame represents the population of North Carolina child welfare and Work First supervisors. Second, a relatively large proportion of the supervisors who were contacted did not take the survey.

Consequently, while these results can be safely regarded as indicative of what supervisors responding to this survey believe the disparity between this sample and the population cannot be assessed or corrected in the absence of more detailed information (e.g., a workforce database).

WORKER SURVEY

SUMMARY

We invited 2,235 county DSS workers to complete our online survey; 751 completed the survey, for a response rate of 33%. Ninety-five counties are represented in the worker survey results described in this chapter.

Most DSS workers are interested in e-learning and have the equipment and skills needed to participate. Furthermore, they believe e-learning will give them more control over their training schedule, provide more training choices, and eliminate travel time. However, workers also have several major concerns about e-learning: they worry they won't receive adequate support from their supervisors and co-workers, they wonder whether they will be able to find a suitable time and place to pursue e-learning while at work, and they question whether they will have access to the computer equipment they need to engage in e-learning successfully.

Workers also believe it is very important to have contact with a training facilitator or content expert during an e-learning event. Email is their preferred method of communication for e-learning. For this to happen all workers must have individual email accounts, which is currently not the case.

While workers have no clear preference for a particular mode of e-learning, many are interested in taking an "individualized, entirely online self-paced course." Most workers had no previous experience with e-learning; those who did typically had an e-learning course in college.

A significant minority of workers may not have broadband Internet access from their work computer. Most report small monitors and many of their computers do not have speakers. Inadequate computer equipment may be a moot point, since nearly half of workers do not have enough privacy (e.g., private office or high-walled cubicle) to engage in e-learning at their desks.

E-learning participation from home may not be a reasonable alternative even if workers were willing, and many are not. Less than half of those with a home computer have broadband Internet access at home.

Most workers use computers on a regular basis and are comfortable doing so, but there is a minority who say they are not comfortable working with computers and who believe they could benefit from computer training. To some extent these results can be attributed to the fact that this was an Internet survey, and may not accurately reflect the opinions of nonrespondents.

Workplace demands will be a decisive factor in any effort to deliver e-learning to North Carolina's DSS workers. In DSS agencies the workplace is noisy, the pace is hectic, and workers have little privacy. Issues of finding time and a place for e-learning must be addressed.

For a variety of reasons not all workers are interested or supportive of e-learning. Some do not like using computers; others prefer the classroom experience. Those workers will require a special level of support if they are to be successful with e-learning.

A. Worker Survey Data Summary

WORKERS' INTEREST IN E-LEARNING

The majority of workers responding to the survey (83.5%) agreed or strongly agreed with the statement, "I am interested in taking trainings offered through e-learning as part of my continuing professional development." However, a large minority disagreed (15%) or strongly disagree (1.4%) with this statement.

	Individualized, entirely self-paced online course	Group facilitated online course	Blended e-learning course	Teleconferencing course	Course on CD
Mean	3.4	3.0	3.1	3.1	3.2
Median	3	3	3	3	3
Mode	3	3	3	3	3
Std. Deviation	1.1	1.0	1.0	1.0	1.1
1 Very Low	6%	8.2%	5.9%	8.3%	7.1%
2 Low	13.7%	20.4%	17.3%	20.9%	20.9%
3 Moderate	32.9%	39.8%	44.1%	40.9%	32%
4 High	25.6%	22.2%	21.9%	21.3%	25.5%
5 Very High	21.8%	9.3%	10.8%	8.6%	14.4%

Although workers express no clear preference for any of the listed modalities, a large number of workers express a very high interest in taking an individualized, entirely self-paced online course. Nearly a third of respondents (31%) have taken an e-learning course, mostly while in college.

WORKERS' THOUGHTS ABOUT COMMUNICATION

Most workers agreed or strongly agreed (79%) that it will be important to communicate with other e-learners, and that the best ways to do this are through Internet discussion board, email, and Internet chat room. Even more workers believe that communicating with a training facilitator or content expert will be important (96% agreed or strongly agreed). Personal email (38.7%) and Internet discussion board (13%) are seen as the best ways to communicate with this person.

WORKERS' VIEWS OF THE CHALLENGES AND ADVANTAGES OF E-LEARNING

Commonly cited advantages of e-learning were listed and workers were asked to select up to three that they agreed would be relevant. Two comment questions were included pertaining to the challenges and advantages of e-learning.

The top three advantages of e-learning selected by workers from the closed-end list were: (1) more flexibility in scheduling trainings (53.7%), (2) reduction in travel costs for the agency (43%), and (3) ability for learners to direct their own learning (42.2%).

Workers commented that they would enjoy the opportunity to learn at their own pace (e.g., able to skip already mastered material while spending more time on new material). Some expressed interest in the capacity to participate in more training and a greater variety of training.

Workers expect the primary challenges of e-learning to be finding time to participate in e-learning at work and finding a place at work where they would not be interrupted. Several workers expressed concern about the quality of the e-learning material, wondered whether they would have access to the appropriate computer equipment, and questioned their own computer skills.

Nine themes were identified from the 485 responses to the open-ended question, "What appeals to you most about e-learning?"

Advantages	Number of Times Advantage is Mentioned
Convenience / flexibility of e-learning*	145
No travel or time out of office	96
Opportunity to learn at one's own pace	83
Ability to customize training to fit personal learning requirements (skip irrelevant material, focus on specific topics)	51
No advantages (not interested in e-learning)	38
Ability to attend more trainings and a greater variety of trainings	32
Ability to train from home	19
No overnight travel / time away from home	12
Prefer classroom	8

* The terms "convenience" and "flexibility" were use extensively, sometimes alone and other times in the context of additional commentary. When presented in context the terms often appeared in conjunction with remarks pertaining to not having a fixed training schedule, of being able to stay in touch with their caseload, or being able to determine the best time to participate in e-learning.

Typical worker comments about the advantages of e-learning include:

- "The flexibility. The opportunity to do more training due to the lack of travel expenses and work schedule conflicts. Love the not having to be away from my family in the evenings due to cutting down on overnight training and travel. Opens so many more training opportunities ...even for units to receive training together from time to time."

- "Not having to travel to another location for training. And the ability to complete the training at my own pace without all the stupid group activities."

- "I might be able to get more information on a variety of topics, since I usually only attend trainings that seem very necessary."

- "Getting the information that I need at my speed. Sometimes people catch on at different speeds and in a group setting you can lose the attention of some people. I like getting what I need and being done with the training."

Fourteen themes were identified from the 481 responses to the open-ended question, "Should you choose to participate in e-learning, what challenges do you anticipate?"

Challenges	Times Challenge Is Mentioned
Finding time at work for e-learning	202
Interruptions at work would interfere with e-learning	77
Time management (fitting e-learning into the work schedule)	56
Concerns about the quality of the e-learning material and experience (e.g., would quality of material and instruction be the same as classroom, what would keep a participant from just pretending to participate, being overwhelmed by the e-learning software or technical glitches)	48
Access to adequate computer equipment	46
Prefer classroom	31
Adequate computer skills to participate productively (e.g., poor typing skills)	21
Support of supervisor / respect e-learning time	20
Dislike computer work in general	13
E-learning can intrude on personal / home time	12
E-learning would add to workload	10
Would not choose to participate in e-learning	6
Physical discomfort from using computer for long period (e.g., eye strain, etc.)	4
Managing / adjusting to change	3

Typical worker comments about the challenges of e-learning include:

- "Time to complete the training with working full-time (and some days after hours) as well as other outside duties and functions."

- "Blocking out phone time, being expected to stop for 'need an available SW' page to provide intake back-up, co-workers knocking at the door to ask me 'just one thing', having an emergency with a case an hour before scheduled e-training that will require several hours."

- "Ensuring time during the work time to complete training w/o interruptions. If I'm at my desk, I would likely be expected to handle my own case issues that arise, assignment of cases as if I was not 'at training'. No reduction in workload to account for time 'in training'."

- "…time to complete [training] would take away from work time, but being here we would not be relieved of obligation to the case load."

- "Conquering the gruesome challenge of yet more hours chained to a computer!!!"

- "It has never personally appealed to me. If I had someone to explain it to me personally then I might be interested. I like 'knocking heads' with other social workers and trainers and the interaction and serendipity that can take place in real time."

WORKERS AND THE RESOURCES NEEDED FOR E-LEARNING

Most workers (85%) report they have a broadband Internet connection at work; however, many report using a 15-inch monitor (55%), and about 25% report their work computer does not have speakers.

While just over half (55%) of workers responding to the survey reported having a private office, some said they share an office (14%) and many work from a cubicle (31%). Accordingly, over a third (34%) disagreed that they could find a quiet place at work for e-learning. Forty percent did not think that they could schedule time for e-learning at work or participate in e-learning while at work. Time is a pressing issue: over half (52%) report they could spare an hour or less from a typical workday for e-learning.

Well over half said they would not be willing to participate in e-learning outside normal work hours, and 44% reported they would not be willing to participate in e-learning from their home. On the other hand, nearly 20% reported they would be willing to participate in e-learning from home during normal work hours, and 36% would be willing to participate in e-learning from home either during or outside normal work hours.

Participation from home may not be a reasonable expectation. While nearly 90% of the workers surveyed report having a home computer, nearly half (44%) of these workers say they use a dial-up Internet connection at home.

WORKERS' COMFORT LEVEL WITH THE INTERNET AND COMPUTERS

The vast majority of workers (over 95%) describe themselves as being comfortable or very comfortable using computers, the Internet, and email. A similar proportion consider their skill using computers, the Internet, and email as good or better. A minority of workers completing this survey say they are uncomfortable with computers and believe they possess fair or poor computer skills. To some extent these results can be attributed to the fact this was an Internet survey, and may not accurately reflect the opinions of nonrespondents.

Age of Responding Workers

		Frequency	Percent
Valid	20-25	52	6.9
	26-30	125	16.6
	31-35	126	16.8
	35-40	94	12.5
	41-45	82	10.9
	46-50	66	8.8
	51-55	55	7.3
	56-60	37	4.9
	61-65	8	1.1
	65-70	1	.1
	Total	646	86.0
Missing	System	105	14.0
	Total	751	100.0

Gender of Responding Workers

		Frequency	Percent
Valid	Female	590	78.6
	Male	85	11.3
	Total	675	89.9
Missing	System	76	10.1
	Total	751	100.0

Highest Degree Attained by Responding Workers

		Frequency	Percent
Valid	Associate's degree	8	1.1
	Bachelor's Degree	506	67.4
	Master's Degree	156	20.8
	Doctorate	2	.3
	Total	672	89.5
Missing	System	79	10.5
	Total	751	100.0

Highest Social Work Degree Attained by Responding Workers

		Frequency	Percent
Valid	BA / BS	223	29.7
	Masters	92	12.3
	NA	351	46.7
	Total	666	88.7
Missing	System	85	11.3
	Total	751	100.0

Service Type of Responding Workers

		Frequency	Percent
Valid	Child Welfare Services	588	78.3
	Work First Services	39	5.2
	Child Welfare and Work First Services	16	2.1
	Adult Services	5	.7
	Other (please specify)	32	4.3
	Total	680	90.5
Missing	System	71	9.5
	Total	751	100.0

B. Statistics and Limitations for Worker Survey

RESPONSE RATE

We contacted 2,235 county DSS workers through email, inviting them to participate in this survey; 751 completed the survey, for a response rate of 33%. Ninety-five counties are represented in the worker survey results.

RESPONSE BY COUNTY DSS LEVEL

	Number of counties	Number of counties represented by level	Percent of counties represented by level
Level 1	51	47	92%
Level 2	39	38	97%
Level 3	10	10	100%
Total	100	95	

LIMITATIONS

A nonresponse bias analysis was not performed on these data. Given the limitations of the sampling frame and response rate, results of this survey should be regarded as indicative but not conclusive evidence of what county DSS child welfare workers and Work First workers believe.

For example, given that some degree of comfort and skill are required to take this Internet survey, those with low comfort and skill may have simply elected to not participate. To some extent these results can be attributed to the fact this was an Internet survey, and may not accurately reflect the opinions of nonrespondents.

A statistically significant negative correlation was found between worker age and having taken an e-learning course (-0.13), and between worker age and comfort using computers (-0.36) and skill using the Internet (-0.4). Older workers were more likely to report no experience with e-learning and lower comfort and skill with technology.

Unfortunately, in the absence of data about workforce demographics there is no way to determine whether older workers are adequately represented in this sample. Thus it is impossible to statistically correct for under- or over-representation with respect to age.

REVIEW, KEY FINDINGS, AND RECOMMENDATIONS

E-learning, or the delivery of training and professional education using the Internet and other distance technologies, is an increasingly popular educational approach that potentially offers many benefits to learners and their organizations. Therefore, in 2005 the NC Division of Social Services asked the Jordan Institute for Families at the UNC-Chapel Hill School of Social Work to assess the readiness of North Carolina's county departments of social services to participate in e-learning.

Using site visits, interviews, and surveys, the Jordan Institute collected information from e-learning experts and over 1,000 North Carolina county DSS employees (including DSS directors, IT managers, and supervisors and line workers from Work First and child welfare programs).

In this assessment we attempt to provide training managers at the NC Division of Social Services with answers to the following questions:

1. Are county DSS managers and workers interested and supportive of e-learning?
2. What are the prevailing attitudes and expectations in DSS agencies toward e-learning?
3. What are the anticipated challenges for e-learners?
4. Do county DSS agencies have the technological resources and support necessary for e-learning?

This assessment yielded the following key findings.

A. Brief Summaries

SITE VISITS AND INTERVIEWS

Three site visits to North Carolina county DSS and interviews with e-learning practitioners and experts provided insight into the strengths and challenges of using technology within state organizations. According to experts, in addition to having uninterrupted time and privacy, an e-learner should have available a computer with the following:

- Broadband Internet access
- Individual email account
- An up-to-date operating system (e.g., Windows 2000 or higher)
- A sound card with speakers or earphones
- Commonly available multimedia software (e.g., Macromedia Flash)

These requirements are rigorous but fair—they do not require the use of leading-edge technology. Experts stated that e-learning courses should be designed with this level of technology in mind. These standards also formed the basis of our evaluation of technology in county DSS agencies.

Site visits to county DSS agencies suggested important variations between counties in terms of computing resources, and between directors, supervisors, and workers in terms of interest in e-

learning. Many workers were observed using computers with small, 15-inch monitors; most worked in cubicles that offered little to no privacy. These issues were confirmed by the rest of our assessment.

An effort was made to identify local community resources that could be leveraged to facilitate e-learning. While the North Carolina Community College (NCCC) system is a natural candidate, like county DSS agencies, the NCCC is a state-managed, locally-administered organization. Thus, it would be up to the local DSS director to negotiate with his or her local community college for additional e-learning resources. The same is true for resources available through North Carolina AHEC system.

DIRECTOR SURVEY

Most county directors appear interested in and supportive of e-learning. However, there may exist of a significant minority (about 20%) of directors who are notably less interested in and less committed to e-learning. Directors with e-learning experience tended to have more favorable opinions.

While no significant differences were detected for key statistics by county level, Level 1 counties were more likely to lack in-house IT support. Overall, 10% of the responding directors said they had no in-house IT support. With respect to email, although most workers are assigned a work email account, in some agencies worker emails go to single contact person. In others, workers are not allowed access to email without explicit permission.

Evidence for nonresponse bias was detected for the key item: interest in e-learning for workers. This suggests that the 15% of the directors who did not respond to the survey probably have a lower opinion of e-learning than those who did respond.

From the perspective of directors, expected benefits of e-learning accrued primarily to the organization in terms of reduced travel costs, increased flexibility in scheduling training, and reduction in worker time away from the office. Many also believed that an e-learning course should take less time to complete than a classroom course covering the same material. Directors expect major challenges to include finding time at the agency for workers to pursue e-learning, interruptions, and managing change.

IT MANAGER SURVEY

Sixty-four of the 100 IT surveys were completed. While most IT managers report that broadband Internet access is available at their county DSS, nearly 7% say their agency uses a cable or DSL Internet connection. All agencies use Microsoft operating systems and productivity software (e.g., Word, Excel). Acrobat and Windows Media Player are commonly available. Unfortunately, some counties report that about half of their workers' computers still use Windows 95 or 98.

Issues such as monitor size, lack of sound cards, and outdated operating systems occur equally in Level 1 and Level 2 counties. Nearly 50% of the counties report that over half of their workers use a computer with a small (15-inch) monitor. Most agencies have computers with CD players; about three-fourths of the agencies have at least some computers with a sound card, but almost none have earphones available. Most workers have their own computer, but a few share. Twelve IT managers indicated that their agency has a computer lab.

A significant portion (25 of 64) of the IT managers surveyed report that they are either part of the county government IT support staff or a private contractor; 18 of the 25 are from a Level 1 county, which suggests that a large portion of Level 1 counties do not have onsite IT support.

Most IT managers believe workers are comfortable using email and the Internet, but they also say workers could benefit from computer training. Ten IT managers thought the typical worker at their county was uncomfortable using computers.

Nearly all respondents reported their workers are allowed access to email while at work. However, one county does not allow this. In another county, workers must have their supervisor's permission to access email.

Spam filters may present an obstacle to e-learning. In 11 counties e-learning providers will have to be manually added to a list of allowed email addresses before workers can receive their emails. Based on this, approximately 20 counties may require this extra effort before learners can exchange email with a training facilitator.

In conclusion, most counties have broadband Internet connection. However, there is a distinct minority of counties that are not well prepared for e-learning due to one or more of the following: outdated computer equipment, limited or no IT support, policies that limit email / Internet access, and workers who are uncomfortable using computers and the Internet.

SUPERVISOR SURVEY

Most supervisors rated themselves as having a high level of commitment to e-learning and believe that e-learning is important for their workers. However, a significant minority (about one third) rated their commitment to and the importance of e-learning as moderate or low. Statistical analysis identified a small group of supervisors who are neither interested in nor committed to e-learning, and who do not believe it is important. Supervisors with e-learning experience have more favorable opinions about e-learning.

Supervisors appear to be good candidates for e-learning. They report using the Internet and email on a regular basis. However, they tend to believe e-learning is best for knowledge-based training and not well suited for new or inexperienced workers who may need to learn more practice skills.

An important goal of this assessment was to better understand how supervisors can support workers participating in e-learning. First, supervisors clearly want to be involved with workers who participate in e-learning. The most commonly desired form of supervisor involvement in e-learning is monitoring worker progress. Supervisors also believe it is important for workers to interact with both a course facilitator and other e-learners; they would prefer that workers achieve this interaction via email or chat room.

Supervisors' expect e-learning will produce the same benefits that directors expect it to yield: reduced travel costs and travel time and increased flexibility in scheduling training. In general, supervisors expect that e-learning should take less time than conventional training, and require no more than two hours out of a work day.

With respect to challenges, supervisors' main concerns were finding time for their workers to participate in e-learning and avoiding interruptions. Approximately a quarter believe that finding adequate computer equipment and a quiet place during work hours will be a serious challenge for

their workers. Many supervisors expressed concern about their workers' computer skills, the quality of the e-learning material, and workers' interest in and commitment to e-learning.

WORKER SURVEY

Workers believe e-learning will give them more control over their training schedule, provide more training choices, and eliminate travel time. However, workers also have several major concerns about e-learning: they worry they won't receive adequate support from their supervisor and co-workers, they wonder whether they will be able to find a suitable time and place to pursue e-learning while at work, and they question whether they will have access to the computer equipment they need to successfully engage in e-learning.

Workers believe it is very important to have contact with a training facilitator or content expert during e-learning; they would prefer to have this contact through email. For this to happen all workers must have individual email accounts, which is currently not the case.

While workers have no clear preference for a particular mode of e-learning, a large number are interested in taking an "individualized, entirely online self-paced course." Most have no previous experience with e-learning; those who do typically had an e-learning course in college and hold a favorable opinion for e-learning.

A significant minority of workers may not have broadband Internet access from their work computers. Most have small monitors and many have computers without speakers. Inadequate computer equipment may be a moot point, since nearly half of workers do not have enough privacy (e.g., private office or high-walled cubicle) to engage in e-learning at their desks. Participation from home may not be a reasonable alternative even if a worker were willing (many are not). Less than half of those with a home computer have broadband Internet access at home.

Most workers reported using computers on a regular basis and are comfortable doing so, but there is a minority who say they are not comfortable working with computers and who believe they would probably benefit from some sort of computer training.

Overall, most workers are interested in e-learning and have the equipment and skill to participate. However, workplace demands can be the decisive factor in whether the e-learning is successful: the work-place is noisy, the pace hectic, and workers have little privacy. Issues of finding time and a place for e-learning must be addressed.

For a variety of reasons not all workers are interested or supportive of e-learning. Some do not like using computers. Others simply prefer the classroom experience. This minority will require a special level of support if they are to be successful with e-learning.

B. Key Findings

Key findings and recommendations are organized in terms of the four guiding questions defined in the first chapter.

1. Are county DSS managers and workers interested and supportive of e-learning?

While overall interest in and support for e-learning is high for directors, supervisors, and workers there are distinct minorities among each group that are noticeably less interested and supportive.

	Interest in e-learning training as continuing professional development.	Interested in having my workers participate in e-learning.	Commitment to having your workers participate in e-learning?	The importance of e-learning for your workers?
	Mean	Mean	Mean	**Mean**
Director				
Overall Average	3.2	3.4	3.9	3.8
Group 1 (33%)	3.9	4.0	4.5	4.3
Group 2 (34%)	2.9	3.2	4.1	4.0
Group 3 (25%)	2.5	2.8	2.8	2.9
Supervisor				
Overall Average	3.2	3.2	3.6	3.5
Group 1 (33%)	3.9	3.9	4.4	4.2
Group 2 (58%)	3.0	3.0	3.4	3.3
Group 3 (9%)	1.7	1.9	2.0	2.1
Worker				
Overall Average	3.1	Na	Na	Na
	15% Disagree 1.5% Strongly Disagree			
	4 pt scale	4 pt scale	5 pt scale	5 pt scale

This finding has important implications for both marketing and quality control.

It will be very important to develop a marketing strategy that includes a user education plan for both workers and managers. Second, it will be very important to develop a quality product that is easy to use and clearly beneficial. This "face-value" will give e-learning credibility and help satisfy reluctant participants. One way to accomplish this is by thoroughly field testing and evaluating all e-learning products as a standard part of the development cycle.

2. What are the prevailing expectations in the agencies toward e-learning?

Directors and supervisors expected that the primary benefits of e-learning will be seen in terms of reduced travel costs and reduced worker time away from the office. While workers were interested in reducing travel costs as well, they were also interested in having more flexibility in scheduling training and being able to direct their own learning.

Most directors and supervisors believe that an e-learning course should take less time to complete than a classroom course covering the same material. Supervisors thought it would be possible for workers to spend up to 2 hours in a work day on e-learning; most workers thought an hour or less would be available during a work day. Note: Ideally e-learning can be customized so that a learner only needs to spend time reviewing relevant material. This suggests that e-learning can require less time than a conventional classroom. However, ultimately it is up to the learner as to how much time is spent on an e-learning curriculum.

Everyone agreed that it would be important for e-learning participants to communicate with each other and with a course facilitator. Preferred modes of communication were email, discussion boards, and Internet chat rooms. When asked about a preferred mode of delivery directors and workers were most supportive of an "individualized, entirely self-paced online course"; supervisors did not express a clear preference.

There was strong agreement by all that new workers, experienced workers, supervisors, program managers, and directors can benefit from e-learning, and that knowledge-based training was best suited for e-learning.

3. What are the anticipated challenges for e-learners?

Supervisors and workers expressed a significant concern about finding uninterrupted time and a place to participate in e-learning while at work. They also worried about getting access to appropriate computer equipment. Director and supervisor support will be critical to ensuring that e-learning time is scheduled and respected just as if the worker were at a regional training center.

- Counties where privacy will probably be a challenge for many workers and no computer lab is available: 23

- Number of counties where between 50% and 100% of workers share an office: .... 10 (none had a computer lab)

- Number of counties where between 50% and 100% of workers operate out of a cubicle: .... 16 (3 reported a computer lab)

Another set of issues relate to whether the e-learning experience will depend on the e-learner's computer skill and like or dislike of using the computer, and whether the e-learning will be on par with current classroom training. Some supervisors were concerned about how to ensure that e-learners actually complete the training and/or learn from the experience. Most IT managers say workers are comfortable using email and the Internet, but believe that they could benefit from additional computer training. Ten IT managers thought the typical worker at their county DSS was uncomfortable using computers. The vast majority of workers (over 95%) described themselves as being comfortable or very comfortable using computers, the Internet, and email. A similar proportion consider their skill using computers, the Internet, and email as good or better. To some extent these results can be attributed to the fact that this was an Internet survey, and may not accurately reflect the opinions of nonrespondents.

Finally, there are agency-level policy issues relating to the use of technology in the workplace. To participate in e-learning workers must not only have access to appropriate computer equipment: they must also be allowed to use this equipment. E-learners will almost

certainly be required to use email to communicate with fellow e-learners and the course facilitator. Currently, one must have a valid email address to access NCSWLearn.org; all learners must access to site to enroll and participate in online training offered through the Division's Family Support and Child Welfare Services Statewide Training Partnership.

Nearly all respondents reported that workers are allowed access to email while at work. However, one IT manager reported that workers are not allowed to use email while at work. Another volunteered that workers must have their supervisor's permission to obtain an email account. One byproduct of this is that workers use personal email accounts (e.g., yahoo), which are difficult to restrict access to if a worker were to depart from the agency / state system.

Spam filters also present an obstacle. In 11 counties e-learning providers will have to be manually added to a list of allowed email addresses. Based on this, approximately 20 counties will require this extra effort before learners can interact via email with a training facilitator.

4. Do county DSS agencies have the technological resources and support necessary for e-learning?

Internet access is available in all counties and all have some form of a broadband connection. While not an overwhelming issue, obsolete computers and software will be barriers for some workers: about 12% of workers say their computer is more than 4 years old. Consequently, a *conservative* estimate is that 12% of workers will need to access e-learning through a computer other than their current work computer. In addition, the most common monitor size is 15 inches, which can negatively influence the appearance and navigability of web pages.

A set of specifications were defined as the minimally necessary configuration for e-learning. The extent to which these requirements are met are summarized in the following table.

Requirement	Percent of workers reporting this feature	Percent of agencies reporting feature
Broadband Internet access	100%	100%
Sound card	*	85%
Speakers	75%	58% reported three-fourths or more of workers computers have speakers
Head sets	NA	5%
Access to email	98%	100%
Access to email attachments	98%	100%
Spam filter that requires manual override	*	20%
15-inch monitor	Over 50%	28% reported that half or more workers have 15-inch monitors
Video software (Real Player or Windows Media Player)	90%	94%
Macromedia Flash	*	59%
Acrobat Reader	100%	100%
Internet Explorer version 6 or higher	80%	75%
OS Win98 or higher	95% (20% report using Win98)	1 agency reported that half its computers use Win95

We decided that most workers would not be able to accurately determine the answer to this question.

With respect to support, 25 of the 64 IT managers surveyed (or 39%) report that they are either part of the county government IT support staff or a private contractor. Eighteen of these IT managers work in Level 1 counties, suggesting that a large proportion of Level 1 counties may not have onsite IT support. If this is true, this would greatly impact the timeliness of correcting user-side computing problems. Twelve counties reported having a computer lab; in six of these agencies workers have private offices.

In short, there is a high probability that a minority of counties is not well prepared for e-learning due to outdated computer equipment and limited IT support.

C. Conclusions and Recommendations

1. **It is critical that directors and supervisors demonstrate their support for e-learning by ensuring that workers can schedule uninterrupted time for participating in e-learning.**

   Recommendations:
   a. Advise directors and supervisors on how to successfully support e-learning and e-learners.
   b. Develop training for participants on how to be successful e-learners.
   c. Market e-learning effectively by providing a balanced review of its advantages and challenges so realistic expectations are set and met.
   d. Create and launch, in partnership with select county departments of social services, pilots in distance learning that are representative of a range of worker needs, agency capacity, and agency readiness.
   e. Partner with the North Carolina Association of County Directors of Social Services and the North Carolina Division of Social Services to disseminate the findings and experiences associated with the pilot projects described in the preceding bullet.

2. **Agency-level policies that limit workers' access to the Internet and email accounts will impede some e-learners' ability to participate and communicate.**

   Recommendations:
   a. All workers should be assigned a personal work email account. If a worker has Internet access it is easy to obtain a generic, free email account from various providers (e.g., Yahoo.com). However, these accounts are difficult to validate and cannot be disabled by the county or state if a worker leaves the agency.
   b. Ideally, email should be accessible from the Internet so that workers can access their work email from outside the workplace. Agencies with limited IT support should encourage workers to create accounts on ncmail.net.
   c. Workers should be allowed unimpeded access to email and Internet while at work.

3. **Workers at agencies with little or no IT support and/or outdated computer equipment may disproportionately experience user-side technical issues or limitations.**

   Recommendations:
   a. Prepare a customer care/outreach effort aimed at counties who may need extra IT support to engage in e-learning.
   b. Help counties with outdated computer equipment secure resources for building an in-house computer kiosk dedicated to e-learning.
   c. Make arrangements with local community colleges or regional AHECs to support county DSS's or give them access to e-learning facilities.
   d. E-learning courses should be designed with sensitivity to the technological context in which they are likely to be experienced. For example, all agencies reported using Microsoft operating systems and productivity software, a number of agencies will have limited IT support available, and many workers use a 15-inch monitor.
   e. Include inexpensive headphones as part of course material.

4. **The quality of the e-learning provided will directly impact whether e-learning is successful and accepted.**

   Recommendations:
   a. Focus on developing training that is successful from the worker's point of view. Start with small successes and build from there.
   b. E-learning courses should be designed with sensitivity to the organizational context in which they are likely to be experienced. For example, training should be organized into manageable blocks of time because it is unlikely that workers will be able to devote more than an hour at a time to e-learning. Also, e-learning courses should be designed to standards specified by the Americans with Disabilities Act.
   c. Focus on developing e-learning products that are easy to use and of clear benefit to the end user. This will give e-learning the credibility it needs to satisfy reluctant or biased participants. If participants do not perceive their initial experiences with e-learning as successful it may become increasingly difficult to cultivate ongoing support and participation from the target audience.
   d. Focus on developing quality e-learning products by recognizing that adequate field testing and evaluation of those products is a necessary part of the development process.
   f. Include a feedback and evaluation component with all e-learning courses.

5. **Nearly 40% of county DSS directors feel that the current training system does not meet the needs of Work First workers. Special efforts may be required to provide quality e-learning in this program area.**

   Recommendations:
   a. Gather and evaluate information about the training currently being provided to Work First supervisors and staff. Identify successful models.
   b. Identify successful providers of Work First training. Involve these and other stakeholders in a group to advise the creation of Work First e-learning courses.

6. **This assessment did not explore the readiness of private child-placing agencies to engage in e-learning. However, currently more than half of the children in foster care in North Carolina are cared for by private agencies. Anecdotal evidence suggests that these agencies are not taking full advantage of the state's present child welfare training system.**

    Recommendations:
    a. Assess the e-learning needs/readiness of private child placing agencies.
    b. If appropriate, develop child welfare e-learning courses that can be used by and are appealing to private as well as public agencies.

7. **This assessment did not explore the readiness of foster parents/resource families to engage in e-learning. However, as it seeks to consistently and continuously meet the learning needs of the families who care for the children in foster care, North Carolina may wish to use e-learning.**

    Recommendations:
    a. In collaboration with the North Carolina Foster and Adoptive Parent Association, the North Carolina Association of County Directors of Social Services, and other stakeholders, assess the e-learning needs/readiness of North Carolina's resource families.
    b. If appropriate, develop e-learning content for resource families and children in foster care.

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