Evaluation of ILEAD U
2010-2012

Final Report Prepared for the
Illinois State Library

by

The Institute for Legal, Legislative, & Policy Studies and the Survey Research Office

Center for State Policy and Leadership

University of Illinois Springfield

David P. Racine
Richard Schuldt
Jeri Frederick
Charles T. Ambrose
David Gruenenfelder
Lorena Johnson

August 2012

Executive Summary

Educating citizens for democracy has long been part of the rationale for libraries in the United States. Democratic spirit and practice are reinforced by convenient access to knowledge and relationships. Today, though, libraries are being challenged to adapt by widespread online access to information and connections with others.

Recognizing this challenge, in 2009 the Illinois State Library (ISL) applied for and received a three-year grant from the federal Institute of Museum and Library Services (IMSL) to train Illinois librarians in the methods of what is commonly referred to as Web 2.0. Web 2.0 represents the evolution of the worldwide web into a mechanism for facilitating interaction, user-centered design of information, and removal of technical barriers to communication and information sharing. Two cohorts of librarians – one in 2010, the other in 2011 – participated in ISL's program, called ILEAD U, through five-member interlibrary teams, with a total of eight teams per cohort. During the nine-month program period for each cohort, each team was to work toward completion of a project that would use the participatory technologies of Web 2.0 to address a common need in the communities their libraries serve. Along the way, they attended in-person training programs organized by ISL, where instructors taught them about Web 2.0 methods, project management and evaluation, team operations, and community relations. The expectation was that participating librarians would take what they learned through ILEAD U back to their libraries and apply it. In 2010, ISL received a second grant from the IMSL to allow representatives from state libraries in other states to observe the in-person training programs for the 2011 cohort.

ISL contracted with the University of Illinois Springfield's Center for State Policy and Leadership to conduct an evaluation of ILEAD U, from the start of the program in early 2010 to its completion at the end of 2011, and then through a six-month follow-up period to assess the use of what librarians learned from ILEAD U. The University submitted an earlier report evaluating the program's first cohort (2010). This report focuses mainly on findings from the evaluation of the second cohort and comparisons of the second cohort with the first, plus the results of the post-ILEAD U follow-up evaluation.

Key Findings

Characteristics of Participants

- In the second cohort (2011), but not in the first, younger participants (those in their 20s and 30s) were significantly more likely to indicate at the outset more confidence in the Web 2.0 abilities they already had. Overall, the second cohort, regardless of age, was more confident in their Web 2.0 knowhow than the first cohort at the start of the ILEAD U program. Coming in with higher levels of Web 2.0 capability may have enabled these participants to get more out of ILEAD U.
- Likewise in the second cohort, participants who said at the beginning that they were currently in a job which was more independent than interdependent , were significantly more likely, late in the program period, to see their project team as well structured and able. Participants in jobs with more autonomy may have felt freer to engage in the work to create an effective team.
- For the first cohort, but not for the second, a high score at the outset on mastery orientation (a measure of the intrinsic motivation to learn) was the strongest predictor of a participant's confidence in her or his abilities with Web 2.0 at the end of the program. In other words, this

motivation was stronger than any aspect of the ILEAD U itself in predicting how participants felt about their Web 2.0 skills when the program was over.

In-Person Training

- Observer ratings of the quality of ILEAD U's in-person training programs showed improvement from one program to the next, both within and across cohorts. Ratings of the first in-person training program for cohort one (March 2010) were only modest, mainly due to instructors' reliance on didactic training methods. Cohort one's second in-person program showed marked improvement in instructors' attention to engaging participants actively in the material, and this improved still further in the training programs for the second cohort.
- Participants reported fairly high levels of learning from in-person training program sessions throughout ILEAD U, with the highest levels of learning coming from the second in-person program of cohort one and the first in-person program of cohort two.
- Participant reports of team and personal use of what was learned through the in-person program were not as high as those for learning. They generally fell at the mid-point of the seven-point scale used to measure use (1= A lot, 7=Not at all). It is not surprising that use was, overall, only moderate during ILEAD U, since participants would have had limited opportunities to apply what they were learning and teams probably only needed those parts of training content relevant to their particular projects.
- In a survey at the end of each cohort, participants gave generally high marks to their ILEAD U instructors. Instructors scored especially well on the overall quality of their instruction. Scores were slightly lower for their perceived value to teams, given particular teams' projects and the needs of those projects.

Team Functioning

- For the second cohort, participants reported that their team roles became more differentiated and clearer over time. Conceivably, a clear and appropriate division of labor helped teams make progress on their projects. Role clarity and differentiation were not fully measured in cohort one.
- Cohort one participants said they gave about the same amount of time to ILEAD U both early and late in the program, averaging two or more hours a week. Cohort two participants started out giving, on average, a relatively small amount of time (less than two hours a week), but their time commitments increased as the program proceeded. In both cohorts, most participants indicated that ILEAD U conflicted with their other job responsibilities.
- Cohort two teams appeared to be better organized early on than cohort one teams were, possibly because ILS emphasized early organization more the second time around. Participants in the second cohort who perceived their team to have set off in a clear direction early were the most likely to see their team in a positive light at the end of the program. In other words, clear, early direction setting appeared to put teams on a favorable trajectory that carried them through to the end.
- In the fall of their respective program years, each cohort largely agreed that by then members were clear about what their project goal was and were fairly confident it would be reached by the end of the program. However, the two cohorts differed in their perceptions of any continuing uncertainty about team direction as the program unfolded. Cohort one tended to report more conflict and uncertainty about direction than cohort two did.
- In the second cohort (this was not measured in the first), participants indicated a relatively strong sense of belonging to their team throughout the program. And the measure of sense of belonging

was positively and significantly correlated with how much time they said they were giving to ILEAD U. Cohort two participants' expressed commitment to their team during the program was the strongest predictor of how much value they attached to their ILEAD U experience at the end of the program.

Participant' Assessment

- Participants in both cohorts gave relatively high marks to the overall value of their ILEAD U experience. Cohort two rated the program higher than cohort one did on the usefulness of the experience, while cohort one was more likely to agree that the most important benefit of the experience was increasing their ability to help their library adapt to technological change. This suggests that cohort two may have derived more practical value from participating in the program than cohort one did, which tended to perceive the value in more abstract terms.
- For both cohorts, the overall value of the experience was positively predicted by their perceived contribution of the instructors to team performance. For the second cohort, the value of the experience was also predicted by participants' early sense of belonging to their teams and how much they felt their library supported their involvement in ILEAD U.
- In most respects, the two cohorts rated their teams in the same positive way. But there were a few notable differences. Cohort two was more likely to agree that team members had made the same effort, and it was more likely to perceive that team direction had been clear from the outset. The largest discrepancy had to do with the team work schedule. Cohort one was more likely to say that the team had followed a tight schedule, while cohort two was more likely to see the schedule as fluid. The second cohort's laxer attitude toward team schedules may have stemmed from the greater effort ISL made in the second cohort to communicate the message that learning from ILEAD U was more important than project completion.
- During the program for each cohort, a mentor (usually a more experienced librarian with some background in Web 2.) was assigned to assist each team. Both cohorts' ratings of the value of the mentors were comparable to their favorable evaluation of instructors.
- Teams were also given access during each cohort to UIS' Center for Online Learning and Research, a group that specializes in the design of online learning environments. Overall, participants in both cohorts gave COLRS a neutral or close to neutral evaluation, with the second cohort slightly more negative than the first.
- Participants' ratings of confidence in their Web 2.0 abilities at the end of the each cohort were mixed. For Web 2.0 content that was common to each cohort, the ratings were very similar and tended in a more rather than less confident direction. Cohort two received more exposure to specific social media technologies, and, unsurprisingly, these areas earned the highest levels of confidence. On the other end of the spectrum, the more complex content management systems (LAMP, Drupal) to which participants in each cohort were exposed during the in-person training programs were related to low levels of confidence at the end. Participants in both cohorts indicated at the end slightly more rather than less confidence in their Web 2.0 competence in general.
- Cohort one's Web 2.0 confidence at the end was predicted most strongly by participants' mastery orientation at the beginning and more weakly by how much time they reported giving to ILEAD U. For cohort two, by contrast, the predictors of final Web 2.0 confidence were mostly variables that measured team functioning, including perceptions during the program of team structure, team ability, and team direction.

Post-Program Effects

- ILEAD U appeared to have moderate effects on participants' reported subsequent use of the more common technologies and methods of Web 2.0 that were taught in in-person programs (e.g., social media, metadata, relating differently to user communities). For cohort one, in which subsequent use was measured twice after the program, there was no improvement in use over time. Use for both cohorts was higher for methods not specific to Web 2.0 *per se* (e.g., team building) than for methods more characteristic of Web 2.0 (e.g., metadata).
- Approximately 40% of cohort one participants reported having used or helped someone else to use a content management system after ILEAD U. For cohort two, the level was slightly higher at around 50%. In each case, the most widely used system was WordPress, with Drupal a distant second. No one in either cohort reported using LAMP.
- Reported use levels as a result of ILEAD U for creating videos, producing digital images, screencasting, and internet meeting systems (Adobe Connect) were all fairly healthy, with between one-third and two-thirds of participants saying they had started using these technologies or were now using them differently. The evident effects of ILEAD U on use of scanning images, apps, and podcasting were all small.
- When asked in follow-up surveys to rate the impact of their team project, participants in cohort two tended to say the impact has been positive, while cohort one was more likely to take a neutral position on this. For cohort two, participants' estimates of project impact were predicted by two factors measured at the beginning of the program. One was how often they said their team communicated when they were surveyed about this prior to the first in-person program. More frequent initial communication was positively associated with perceiving more project impact six months after the end of the program. The other was whether the team had met online before the initial in-person program. Having done so was correlated with perceiving less project impact. It could be, although there is no direct evidence of this, that meeting online early, perhaps in the absence of face-to-face meetings, reflected less commitment to the team and/or ILEAD U, resulting in a self-fulfilling prophecy about the value that would ultimately come from team projects.
- Findings from follow-up surveys generally paint a picture of participants returning to work environments that, while not necessarily as enthusiastic as the participants themselves, were not actively resisting use of what had been learned through ILEAD U. Participants, with only some exceptions, perceived their work places and colleagues as open and supportive.

Conclusion and Recommendations

The findings from the evaluation suggest that ILEAD U, after working out some initial kinks, became an effective way to help librarians take on the challenges and opportunities posed by the emergence and continuing evolution of Web 2.0. At the same time, the evaluation also suggests that the program could probably be improved in certain ways as other states seek to replicate it. These include:

- Focusing initial training cohorts on librarians who already have some Web 2.0 knowledge and skill, in order to lay a foundation for ongoing success.
- Having participating teams clearly define their projects in advance of the first training, so that this information can be taken into account in developing the training curriculum.
- Creating a strong expectation that teams should meet face-to-face at least once prior to the first training, to reduce the likelihood of team problems down the road.

- Expecting teams to select a member early on who will be responsible for scheduling meetings, planning agendas, and facilitating communication, to increase the likelihood of teams staying on track.
- Considering a training curriculum that is somewhat narrower and deeper than the one used for the first two cohorts in Illinois, to increase the amount of useful learning that occurs.
- Providing instructors with formal, explicit guidance on the qualities of effective training, to assure that the program begins on the right foot with participants.
- Designing a new program component for reaching out to and developing support among the supervisors/superiors of those who participate in ILEAD U, to improve the chances that participants will find a receptive work environment for what they learn.

Table of Contents

I. Introduction 9
II. The ILEAD U Program Model 9
III. Evaluation Methods 12
Data 12
Methods of Analysis 15
IV. Who Participated in ILEAD U? 18
Demographic Characteristics 19
Perceptions of Group Skills, Job Interdependence
Orientations toward Learning, and Web 2.0 Capabilities 21
Group Skills 21
Job Interdependence 22
Orientations toward Learning 23
Web 2.0 Capabilities 25
V. In-Person Training 26
Observer Ratings 27
Participant, Mentor, & Apprentice Evaluations of In-Person Programs 29
First In-Person Program of Cohort Two (March 2011) 30
Second In-Person Program of Cohort Two (June 2011) 32
VI. Project Team Functioning 34
Participant Roles and Responsibilities 35
Team Direction 37
Commitment to the Team 39
Communication 41
Communication Methods 41
Effects of Communication 43
Team Ability 44
Team Structure 45
VII. Participant Assessment of ILEAD U 47
Value of the Experience 47
Value of Team 48
Psychological Safety 50
Assessment of Supports 50
Instructors 51
COLRS 51
Mentors 52
User Representatives 53
Web 2.0 Confidence 54
VIII. Post-Program Effects 56
Changes in Use of More Common Technologies 56
Use of Content Management Systems 58

Use of Other Specific Technologies..... 62
Team Project Impact & Continuation..... 64
Workplace Supports..... 66
IX. Conclusion and Recommendations........ 68

I. Introduction

Educating citizens for democracy has long been part of the rationale for libraries. Democratic spirit and practice are reinforced by convenient access to knowledge and relationships. Today, though, libraries are being challenged to adapt by widespread online access to information and connections to others.

Recognizing this challenge, in 2009 the Illinois State Library (ISL) applied for and received a three-year grant from the federal Institute for Museum and Library Services to train Illinois librarians in the methods of what is commonly referred to as Web 2.0. ISL received a second grant from the Institute in 2010 to have state librarians from other states observe the training program. Web 2.0 is essentially the evolution of the worldwide web into a mechanism for facilitating interaction, user-centered design of information, and the removal of technical barriers to communication and information sharing. ISL's hope was that, through better equipping librarians in how to use Web 2.0, they would be able to help improve the community effectiveness and relevance of their libraries.

ISL engaged the Institute for Legal, Legislative, and Policy Studies and Survey Research Office, both units in the University of Illinois Springfield's Center for State Policy and Leadership, to evaluate the program funded by the federal grant. The program, called ILEAD U – short for Illinois Libraries Explore, Apply, and Discover, involved two cohorts of trainees in calendar years 2010 and 2011 and directly affected more than 120 librarians either as trainees, instructors, or observers. Trainees participated in ILEAD U through multi-library project teams.

What follows is the final report of the University's evaluation of ILEAD U under the grant from the Institute for Museum and Library Services. The *next section* describes the ILEAD U program model and how the model changed during the first cohort of trainees and between that cohort and the second cohort. In *section three*, the design of the evaluation is discussed, including data sources and the methods used to analyze data. The *fourth section* profiles the people who participated in ILEAD U, using findings from a baseline survey conducted with each cohort's participants prior to their first in-person training. The *fifth section* takes an in-depth look at the execution and effects of the in-person training programs experienced by each cohort, since these programs were the primary device used to help librarians learn about Web 2.0. In the *sixth section*, the evaluation turns to a close examination of the ILEAD U project teams. These teams were the immediate context in which participating librarians could apply what they were learning. Librarians' assessment of their ILEAD U experience after it ended is the subject of *section seven*. The *eighth section* examines whether participants have subsequently used what they learned through ILEAD U. Conclusions about ILEAD U are addressed in the final section of the report.

Since a detailed evaluation report on cohort one was written and submitted in the spring of 2011, this report focuses more on the second cohort than on the first. Results from the first cohort are brought into the picture for the purpose of comparison with the second cohort when this affords some insight into how ILEAD U worked and why.

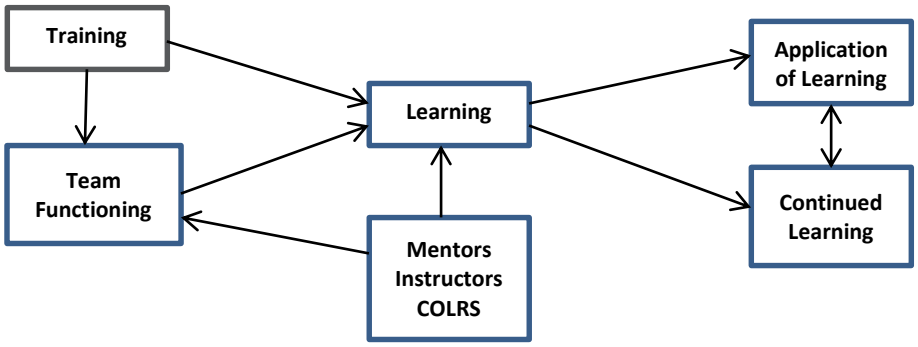
II. The ILEAD U Program Model

As already noted, librarians participated in ILEAD U through multi-library project teams. For both cohorts, a project team was limited to five members, no more than two of whom were supposed to be from the same library. Basically, teams could consist of representatives from any type of library – public,

school, academic, specialty, etc. Each team was to work on a project that would use the participatory technologies of Web 2.0 to address a common need in the communities their libraries serve. For example, they might develop a website providing access to information resources to help patrons who are under-employed or unemployed start their own business or an online game which teaches children how to use the library. Typically, teams consisted of members from libraries in the same general geographic area. Each team was also supposed to include participation from one or more representatives of their libraries' user communities to serve as a sounding board for the team's ideas. At a minimum, teams were to last during the nine to ten month active phase of each cohort, essentially from January or February through October of each year. But, there was nothing barring teams from continuing to function after the end of each cohort, and many teams did so in both cohorts.

Teams applied to the Illinois State Library to participate in ILEAD U. In each year, a few teams formed quickly and applied, but others had to be coaxed into existence by ISL. It is difficult to say exactly why the willingness to apply was not more widespread, but likely reasons have to do with the novelty of multi-library, team-based participation and difficulties libraries have engaging in new initiatives in a time of severe fiscal stringency. All teams who applied were accepted. Applications were required to identify team members and describe the project that the team hoped to undertake. Each team was eligible to receive modest grant funds, usually to support purchase of technology needed to carry out their projects. They were required to participate in three in-person training programs during the year, one in mid to late winter, one in June, and the third in October, while they worked on their projects. The training programs included content on Web 2.0 methods (e.g., content management systems, smart phone apps), project management and evaluation, team operations, and community relations. Teams could also access the expertise of staff in the University of Illinois Springfield's Center for Online Learning, Research, and Service (COLRS). In addition, each team in both cohorts was assigned a mentor, typically a more seasoned librarian, often although not always with significant Web 2.0 experience, to give the team guidance and support.

The following diagram depicts the "theory of change" entailed in the relationships among the basic components of the ILEAD U model.



Training, the main form of content delivery, was expected to feed directly into team functioning and individual participant learning. Learning and team functioning were also expected to be affected by the efforts of team mentors and COLRS (which provided training apart from the in-person programs). Instructors were counted here as well, since it was possible for them to assist teams outside the formal training programs. In addition, individual learning might be affected by participants' experiences on their teams. In turn, what individuals learned through ILEAD U might be anticipated to lead to their application of some of that learning in their jobs and to provide a foundation on which continued

learning could occur. All of the boxes in the diagram were evaluated except continued learning, which was beyond the scope.

The ILEAD U model did not remain static but evolved, although the basic components did not change. In cohort one, the first in-person training program did not turn out well. Participants were confused about their role and what they were supposed to be learning. For most, this was the first time their team was getting together, and yet too little time was allowed on the agenda for "teamwork." Instructors tended to deliver their training sessions didactically, with limited effort to engage participants in the content. All of these factors were taken into account in modifying the agenda for cohort one's second in-person program to make it more user-friendly and relevant to project teams. More time was allowed for project teams to meet, content was better aligned with what teams needed for their projects, and instructors used a more participatory approach in their training sessions.

These changes in the design of the in-person training programs were continued in cohort two. In addition, the model was tweaked in other ways, to some extent based on findings from the evaluation of cohort one's experience. First, in cohort one, many teams had not actually met or engaged in serious project planning prior to the first in-person training. As a result, some teams were well into the year (2010) before they started getting clear about what they wanted to accomplish. To minimize this kind of delay, teams in the second cohort were encouraged to get together, whether face-to-face or in other ways, before the initial training program to start planning their projects. Second, training content for cohort two became even more diversified than for cohort one after the modifications arising out of its first in-person program. Cohort two participants were presented with a fairly large menu of training sessions to select from at both their first and second in-person programs, with the intent that this would allow them to pursue content more precisely tailored to the needs of their team projects. Some sessions were also offered more than once based on instructors' and ISL staff's perception of likely demand for different kinds of content. [1] Lastly, although not a change in the model *per se*, the second cohort also included an opportunity for representatives – called apprentices – from state libraries in other states to observe the in-person training sessions to get a feel for how ILEAD U works.

It is worth noting another kind of change that occurred between the first and second cohorts. While this didn't alter the model as designed, it most likely affected the model in actual practice. Going into cohort two, both the ISL staff and many of the instructors had under their belts the experience of cohort one. It was clear, for example, and as will be shown later in this report, that instructors who participated in both cohorts often became more reliably effective over time. They got better, for example, at making enough room for participant engagement or attuning the content they delivered to what participants needed or could understand. Similarly, cohort two team mentors who had been team members in cohort one had the benefit of already knowing ILEAD U relatively well. Though evaluative data on such "learning curve" effects are limited, it seems reasonable to assume that they were present and influenced the trajectory of ILEAD U as it unfolded across the two cohorts.

[1] For both cohorts, the third in-person program each year, while it included some training, was mainly an opportunity for teams to present their projects.

III. Evaluation Methods

Data

That ILEAD U had two cohorts provided the opportunity to evaluate the program at some level of depth over time and as it evolved. One cohort would have been helpful in gaining insight into how ILEAD U works and with what effects, but data on two cohorts of participants – twice as many people exposed to the program – would increase confidence in the validity and reliability of such insights. Additionally, evaluation of the first cohort, a kind of pilot effort, could yield findings of use in improving the program for the second cohort, which when evaluated would represent a more refined model better suited for adoption or replication in other states.

The evaluation strategy involved collecting data at key points in time for each cohort, so that changes in what participants did or experienced could be tracked. The timeline followed for data collection appears on the next page.

While some of the variables measured were the same over time, others changed from one time point to the next during a cohort to reflect the expected developmental course of project teams and individual learning. There were also changes in measured variables between the first and second cohorts, as the experience in evaluating cohort one pointed to ways to improve the evaluation for cohort two.

Data were collected directly from team members and mentors in cohort one and from both of these groups plus out-of-state apprentices in cohort two. Since team members were the main interest of ILEAD U, most of the data obtained for evaluation pertains to them. Data were collected primarily through surveys that respondents could complete on paper and mail back or access through a web connection.

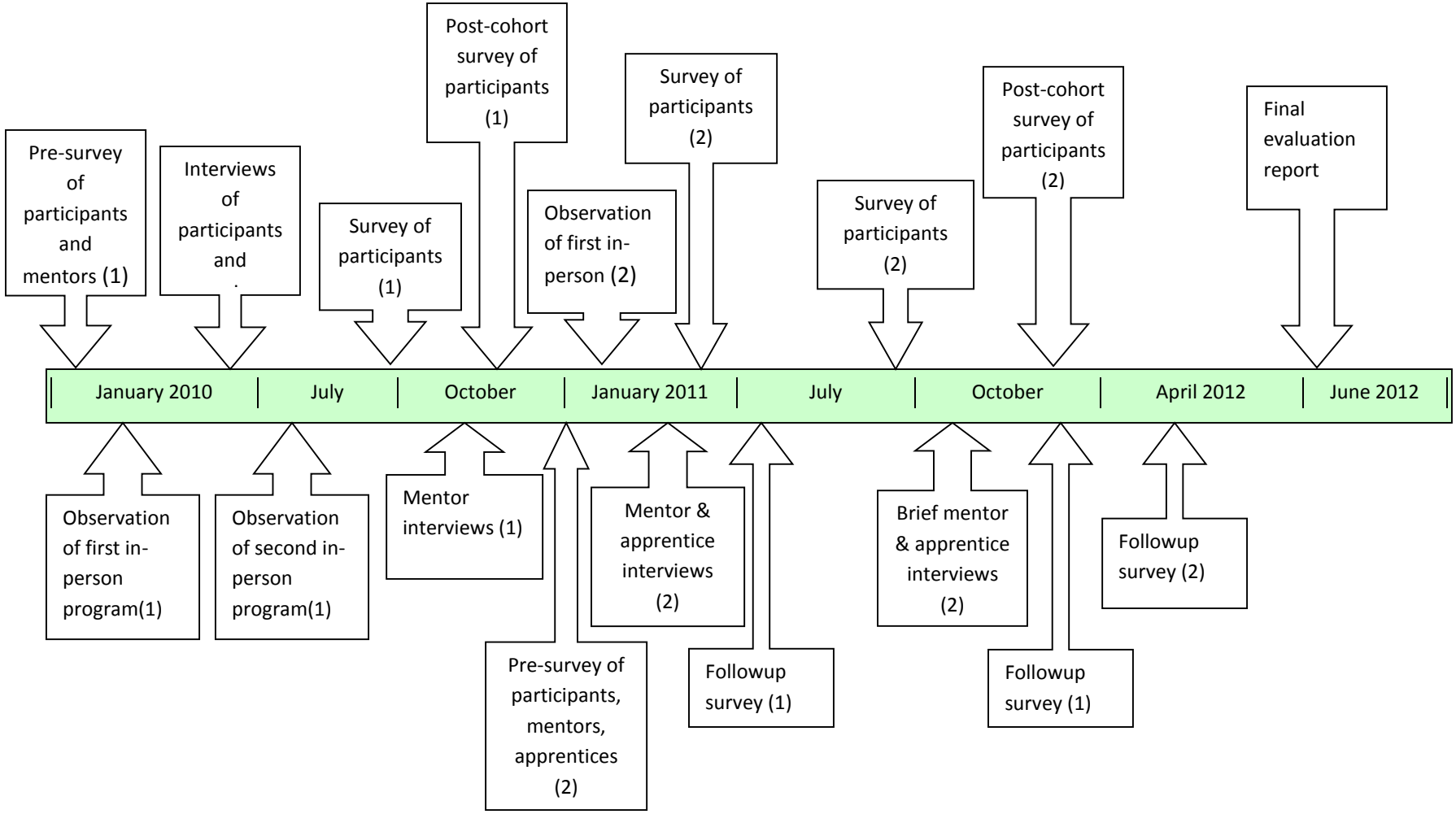
Surveys asked straightforward factual questions (e.g., how long have you spent recently working on ILEAD U, how many years have you been in your current job), but chiefly presented respondents with rating scales where they would, for example, indicate how much they agreed or disagreed with a particular statement. These scales were almost always derived from measures that have already been tested and validated to some degree in the social and behavioral science research literature. There were also interviews, although much more so during cohort one, when it was necessary to probe for what was meaningful to participants about ILEAD U and what was not, than in cohort two, when the results of those cohort one interview probes could be used to construct survey items that would be more efficient to administer and analyze than interviews. As already mentioned, data were collected both during each cohort and for a period of time after its conclusion, in order to test for enduring effects from ILEAD U.

In addition to obtaining data directly from participants, evaluators used a systematic protocol to observe and rate training sessions during the first and second in-person programs for cohort one and during the first in-person program for cohort two. The protocol focused on the design and implementation of training sessions, training session content, and instructor communication and interaction with participants. It was infeasible to systematically observe the sessions in the second in-person program for cohort two, since the number of simultaneous sessions vastly exceeded the number of evaluators available for observation. And observer evaluation was not done of the third in-person program for either cohort, since this was mainly an opportunity in each case for teams to present their projects and celebrate their accomplishments.

ILEAD U Data Collection Schedule

1= Cohort 1

2= Cohort 2



The following table shows the categories of variables on which data were collected from whom when for each cohort. The variables themselves will be discussed in subsequent sections as relevant evaluation results are presented.

Table 1: Categories of Variables Measured

	Cohort 1		Cohort 2		
	Participants	Mentors	Participants	Mentors	Apprentices
Baseline (Mid/Late Winter each year)	(n=39)	(n=8)	(n=37)	(n=8)	(n=12)
Employment Characteristics	X	X	X	X	X
Gender & Age	X	X	X	X	X
Education			X	X	X
Familiarity w/ Team Members	X		X		
Self-rating of Group Skills	X		X	X	X
Interdependence of Current Job	X		X	X	
Orientation toward Performance	X		X	X	X
Orientation toward Learning	X		X	X	X
Web 2.0 Proficiencies	X		X	X	X
Use of Communication Methods	X		X	X	X
Status of Project Team			X		
Data Collection after Initial In-Person Program (Spring each year)	(n=31)	(n=8)	N=34)	(n=8)	(n=12)
Roles/Responsibilities	X	X	X		
Commitment to Team/ILEAD U	X	X	X	X	
Project Team Direction	X	X	X	X	
Team Communication	X	X	X	X	
Team Leadership & Decision Making	X	X	X		
Team Conflict	X	X	X		
Team Access to Information & Knowledge	X				
Team Capability	X	X	X	X	
Team Cohesion/Sense of Belonging			X		
Coordination with Others		X	X		
Previous Related Experience		X		X	X
Ratings of Initial In-Person Program	X	X			
Team Contact with Mentors/Instructors	X				
Learning from Initial In-Person Program			X	X	X
Team Use of Learning from Initial In-Person			X	X	
Personal Use of Learning from Initial In-Person			X	X	
Personal Benefit				X	X
Opportunities/Barriers to Doing ILEAD U					X
Data Collection after Second In-Person Program (Early Fall each year)	(n=34)	(n=7)	N=38)	(n=6)	(n=9)
Roles/Responsibilities (Team Structure)	X	X	X		
Commitment to Team/ILEAD U	X	X	X		

Project Team Direction	X	X	X		
Team Communication	X	X	X		
Team Leadership & Decision Making	X	X	X		
Team Capability	X	X	X		
Team Cohesion/Sense of Belonging	X		X		
Coordination with Others	X				
Learning from Second In-Person Program	X		X		
Team Use of Learning from Second In-Person	X	X	X		
Personal Use of Learning from Second In-Person	X		X		
Personal Benefit	X			X	X
Confidence in Accomplishing Team Goal	X	X	X	X	X
Opportunities/Barriers to Doing ILEAD U					X
Immediate Post-Cohort Survey (October each year)	(n=32)		(n=34)		
Value of the ILEAD U Experience	X		X		
Team Cohesion	X		X		
Team Structure	X		X		
Comfort with Team	X		X		
Support from Employing Library	X		X		
Benefit to Employing Library			X		
Assessment of User Representatives	X		X		
Assessment of Mentors	X		X		
Assessment of Instructors	X		X		
Assessment of COLRS	X		X		
Web 2.0 Proficiencies	X		X		
Follow-up Surveys	(n=28,21)		(n=30)		
Using ILEAD U Lessons (specific to each cohort)	X		X		
Responsibility on Project Team	X				
Impact of Team Project on Employing Library	X		X		
Project Team Continuation	X		X		
Support for Using ILEAD U from Employing Library	X		X		

Methods of Analysis

Much of the information presented in the rest of this report is basic descriptive statistics derived directly from the surveys, interviews, and observations used to collect data. The two descriptive statistical measures cited most often are frequencies (i.e., how many people gave or selected a particular response to a question) and especially medians (i.e., the mid-point of the distribution of all responses to a question). The mean or average response to a question (i.e., the values of all responses divided by the number of people who responded) is used some of the time, but avoided for the most part because of the relatively small numbers of people involved in cohorts one (39) and two (37).[2] The mean in a

[2] In cohort one, there was one person who voluntarily chose not to participate in providing data for the evaluation. In cohort two,

population of this small size can be deceiving, since all it takes is a few outlying responses to skew the result one way or the other. The median mitigates this problem by always representing the 50th percentile, with half of the respondents below this point and half above.

In addition to descriptive measures, the evaluation makes use of somewhat more complex methods – although still comparatively simple within the armamentarium of statistics today – to help analyze more deeply the wide range of data that have been collected. The techniques include crosstabs, correlations, factor analysis, and linear regression. A brief description of each and the purposes for which it has been used may be of help to readers.

Crosstabs and correlations are simple measures of association between different variables. While they can show whether or not a statistical relationship exists, they are not able to establish whether one variable is a cause of another, nor even whether a statistical relationship makes sense. Logic, common sense, and familiarity with relevant research and theory are used to assess whether a crosstab or correlation is meaningful.

Crosstabs provide a side-by-side comparison of the responses to two or more questions to see if they might be interrelated. Crosstabs are often used with so called nominal variables – in other words, variables that represent distinct qualitative categories (e.g., hair color) that cannot be measured by order (e.g., strongly agree, agree, strongly disagree) or different values along a numerical continuum (e.g., 1, 2, 3….). For example, the team that a participant belongs to (nominal variable) could be cross-tabulated with ratings of training sessions (ordinal variable) to see if those ratings vary in any kind of systematic way from one team to the next. Indeed, in developing findings for this report, team was cross-tabulated with many other variables in the search for any differences that might exist across teams. The report does not mention teams by name, but does indicate where team affiliation appeared to be associated with other variables of interest. Notably, while the evaluation of cohort one found almost no connection between team affiliation and other variables, this was not the case with cohort two, where several of these connections were identified and are discussed below.

Correlations, in addition to showing whether or not a relationship exists, provide information on the strength of that association, something crosstabs cannot do. They do this by capturing the extent to which two variables co-vary with each other. The simple correlation between two variables (there are more complex kinds of correlation) is the most ubiquitous measure in applied statistics. Correlations have been used extensively in this evaluation. However, all possible correlations are not reported in what follows, given the very large number of variables measured in each cohort and the fact that most are not significantly correlated with one another. Rather, much of the time correlations were mostly used to identify relationships to be tested in linear regressions, where it becomes possible to work with several variables at a time.

Heavy use has been made of factor analysis, a statistical technique that can be applied, among other purposes, to see whether responses to a set of questions are related to one another, thus making it feasible to "reduce" them to a more basic, underlying factor. For example, aspects of team structure (e.g., clarity of roles and responsibilities, tightness of the meeting schedule) might be addressed using several questions in a survey. A factor analysis can be used to find out whether answers are consistent across questions among the people being surveyed, suggesting that all of the questions are essentially measuring the same thing, namely, team structure. If a single factor is derivable, this simplifies the task of further data analysis, since the factor can be used instead of the several specific items out of which it has been constituted. For the same reason, it also makes it easier to communicate findings.

Factor analysis has been applied to reduce the data collected through surveys. All of the surveys of participants included a fairly large number of questions, and, as previously indicated, most of these questions were derived from established scales in the relevant research literature. In the preceding example, the items addressing team structure would have comprised a scale. Factor analysis was used, first, to see whether these established scales applied to the ILEAD U cohorts, and second, if not, whether the data represented a more or less different set of underlying factors. Some of the scales fit, meaning that at least some of the items representing an established scale found their way into the factor resulting from the analysis. Other scales did not hold up, but in some of these instances a somewhat different factor emerged from the data, and reasons are offered for why this factor may be meaningful in the context of ILEAD U.

As just indicated, correlations among pairs of variables determine which variables to include in a linear regression analysis. Because correlations only measure association, they provide limited insight into how variables might be influencing one another. For example, the strength of participants' orientation toward learning might be correlated with how much they actually learn, but is not clear from the correlation, on its own, if orientation is a cause of learning. Linear regression can incorporate three or more variables at one time to get a handle on the direction of the relationships among them. It does this by identifying one variable as a dependent variable and others as independent variables suspected of affecting the value of the dependent variable. These variables are typically chosen for the regression analysis because they have already been found to be correlated.

Using the example just cited, actual learning could be selected as the dependent variable, and learning orientation along with, say, time spent engaged in learning could be chosen as independents, because these have all been found to be correlated. Linear regression then does computations that determine the relative weight to be assigned to each of these independent variables in terms of its influence on the dependent variable and whether or not this influence is statistically significant. Here, influence is not causation *per se*, but simply the strength of the association between one independent variable and the dependent controlling for the strength of the association between the dependent and the other independent variable(s). Clarity about the direction of the influence can be obtained by switching the dependent variable with each independent variable to see whether or not the relationship remains statistically significant. If it does not, then the original prediction about the direction of the relationship (i.e., the value of the original dependent variable is actually "dependent" on the value of the original independent variable or variables) has some confirmation.

Regression analysis has been used in the evaluation, not to establish proof, as it were, of influences among variables, but as an aid to interpreting what the data captured through surveys may be conveying about the two ILEAD U cohorts. There are two reasons for this more cautious approach. One is, as stressed previously, the small numbers of respondents in the cohorts. Combining them would, to be sure, produce a larger population, although still rather small for statistical purposes. However, because the second cohort experienced a qualitatively different program from the first, the evaluation has avoided merging them into one group for purposes of statistical analysis. A combination would only add confusion in trying to make sense out of findings. Comparisons between cohorts are done extensively, but these are through visual inspection rather than statistically.

The second reason is due to the requirements of linear regression. This technique was designed with continuous variables in mind (i.e., variables measured along a numerical continuum), whereas the evaluation relies mostly on ordinal variables, such as statements with which respondents were asked to

indicate their level of agreement by selecting a point along a scale from strongly disagree to strongly agree. There is a method for ordinal variables called, unsurprisingly, ordinal regression, but it produces results that have more ambiguity than linear regression. Since not all of the evaluated variables are ordinal – some are continuous, and since tests using both methods produced similar statistical results, the report relies on linear analyses. The linear regressions yield more precise findings, which helps in teasing meaning out of the data. Nonetheless, it is important to acknowledge at the outset these findings' limited claim to representing truth. They should be regarded as suggestive, rather than definitive.

A word about how interview data were analyzed. The only in-depth interviewing was of cohort one participants during the spring of 2010. As evident in the table on pp. 5-7, this interview protocol was designed to explore participants' perceptions in most of the categories that were later used in constructing survey instruments. The data from the spring 2010 interviews of cohort one participants were coded using Atlas Ti software, codes were converted into ordinal or nominal variables where it appeared feasible to do so, and then those variables were used in statistical analyses that informed the cohort one evaluation report submitted to ISL in early 2011. By and large, these converted variables are not used in the present report, since they were addressed previously. Coding was not done of the interviews with mentors and apprentices, since these interviews were always brief and more designed to obtain general impressions than to test for the effects of ILEAD U.

Overall, the choice of strategy for evaluating ILEAD U has been a pragmatic one. The purpose has been to help those charged with the leading the program, rather than to produce a final, summative judgment on whether or not ILEAD U worked. As the evaluation has yielded findings along the way, these have been shared with the ISL staff and ILEAD U instructors and mentors as they considered whether, and if so, how to improve or adjust the program. To satisfy this purpose requires a willingness and ability to adapt the evaluation as new things are learned and ideas clarify, which suggest the need for other data or different ways of measuring concepts. ILEAD U itself was something of a moving target, and so the evaluation had to do likewise. And though it has dramatically matured since its launch, the program is still a work in progress, and if it continues, will likely remain so for the foreseeable future. In what follows, there are no ultimate conclusions drawn, no hard-and-fast declarations of success or failure. The report attempts to paint a rich picture of what happened and with what evident effects, and to offer plausible explanations of why.

The report is not exhaustive in its presentation of data or data analyses. As has been mentioned, the evaluation collected data on a large number of variables. Every variable made its way into two or more analyses. However, not every analysis led to findings that were either statistically significant or if even statistically significant made sense in the context of ILEAD U. These unproductive findings are, for the most part, not reported here, except to the extent that a relationship between variables had been expected but the findings suggest otherwise. Also, in many cases findings are described without presenting the details of the analyses that produced them. This is done to make the report easier to read and understand. For anyone interested in seeing the details, they can be obtained by contacting the authors.

IV. Who Participated in ILEAD U?

For both cohorts, the members of ILEAD U teams and their mentors completed a baseline survey at the start of the program in January/February. A similar survey was also completed by the apprentices in the

second cohort. The survey sought to obtain background data that was considered to be potentially useful in understanding how people experienced ILEAD U and what they got out of it. Team members or participants were asked to provide some basic demographic data as well as responses to questions on their Web 2.0 skills, group skills, the nature of their jobs, orientation toward learning, and in cohort two, they were also asked to offer their perceptions of any team activity that took place prior to the first in-person program. These early team activity perceptions are discussed later in the report. Similar baseline questions were posed to mentors and apprentices, although with some differences, as will be evident in the presentation of results below.

Demographic Characteristics of Participants, Mentors, and Apprentices

Age was solicited on the hunch that younger librarians might be more savvy about and interested in Web 2.0 than older librarians. In both cohorts, about a fourth of participants were under the age of 30 and another fourth under the age of 40. Cohort one had a higher proportion of participants over 50 years of age, and cohort two a higher proportion under 50, making the second cohort, overall, slightly younger than the first. In cohort one, half the mentors were under the age of 40, while in cohort two only a little more than a third were, although in both cases mentors on average tended to be older than team members, with only one mentor in each cohort less than 30 years old. Half the apprentices were under the age of 50, but like the mentors, only one of them was under the age of 30. As it turns out, the age of participants was not related to other measured variables, with one exception. *Younger cohort two participants tended, in a statistically significant way, to indicate higher levels of confidence in their abilities with Web 2.0 in the baseline survey (a positive correlation of .567 at the .001 level of significance).* However, this relationship did not hold up when Web 2.0 confidence was tested again at the end of the program.

Participants in each cohort were asked how long they had been working as librarians, how long they had been with their current employer, and how long they had been in the current position. It was thought that these different types of employment duration might be related to participants' motivation to learn from ILEAD U. As people gain work experience, they often become more able to absorb new information but also may be less inclined to pursue it. Table 2 shows participants responses to the three duration questions in each cohort. For ease of presentation, actual durations have been broken down into categories.

The median length of time working as a librarian was six years in both cohorts. Participants in cohort two reported being with their current employer longer than cohort one: a median of six years for cohort two vs. a median of three and a half years for cohort one. The median length of time for being in one's current position was also slightly less for cohort one: two years vs. three years for cohort two. So, while participants in both cohorts had been librarians for roughly the same lengths of time, cohort two's experience reflected somewhat more employment stability than cohort one. *Despite the prediction, none of the employment duration variables, for either cohort, was correlated with the evaluation's specific measure of participants' learning motivation (i.e., attitude toward learning).* Mentors generally reported more experience as librarians (a median of nine years in cohort one and seven years in cohort two), more years with their current employer (a median over five years in cohort one and seven years in cohort two), and more time in their current positions (a median of more than three years in cohort one and six years in cohort two).

Table 2: Participants' Experience as Librarians

	Cohort 2		Cohort 1	
Years Worked as Librarian	Frequency	Valid Percent	Frequency	Valid Percent
2 or fewer years	8	21.6	10	26.3
3 to 6 years	14	37.8	10	26.3
7 to 1 years	8	21.6	9	23.7
16 or more years	7	18.9	9	23.7
Total	37	100.0	38	100.0
Years with Current Employer				
1.5 or fewer years	5	13.5	9	23.1
2 to 3.5 years	10	27	11	28.2
4 to 7 years	5	13.5	9	23.1
8 or more years	17	45.9	10	25.6
Total	37	100	39	100.0
Years in Current Position				
1 year or less	10	27.0	14	35.9
1.5 to 3 years	11	29.7	12	30.8
4 or more years	16	43.2	13	33.3
Total	37	100.0	39	100.0

Participants were asked if they supervised others, on the assumption that whether or not someone has experience exercising authority over others might affect his or her team behavior. Approximately half the cohort one participants said they were supervisors, with five as the median number of employees they supervised. The proportion of supervisors in cohort two was somewhat higher at just under two-thirds, and they supervised somewhat more employees, a median of between seven and eight. In both cohorts, mentors were more likely than participants to be supervisors. *Neither being a supervisor nor the number of people supervised was related to participants' later perceptions of team functioning, including the conduct of other members.*

The baseline surveys for participants and mentors had a question on the type of library where they work. This was not included to test any ideas but simply as an additional way to characterize the people involved in ILEAD U. Their responses are provided in Table 3.

The numbers exceed the total number of participants and mentors in either cohort because respondents often indicated that their library was more than one type. Despite the overlap, the pattern is fairly clear: *majorities worked for public libraries and/or academic libraries based in colleges and universities.*

Table 3: Library Where Work

Library Type	Cohort 2		Cohort 1	
	Participants	Mentors	Participants	Mentors
Public	25	7	27	5
School	7		5	
Academic	13	4	21	4
Specialty	8	3	9	1
Other	3	1	7	4

Since the ILEAD U model called for participants to form interlibrary teams, it made sense to find out the extent to which team members knew one another beforehand. Conceivably, the longer team members had known one another prior to ILEAD U, the less time they might need to spend developing their relationships. They could then get to work more quickly defining their team project and making plans to carry it out.

Among cohort two participants, the median length of time team members had known one another before ILEAD U was one year, while for cohort one it was less than half a year. In other words, it was the exception for members to really be familiar with one another, and this was a little more pronounced in cohort one than cohort two. *In neither cohort did the familiarity variable appear to have a strong bearing on perceptions of team functioning, perhaps because most members – and this was fairly consistent across teams – either did not know one another at all or for more than a short while beforehand.* For cohort two, familiarity was unrelated to any measure of team functioning. For cohort one, it was statistically associated with team communication problems early on and with later coordination, but these were not strong relationships. *Possibly, the slightly lower level of pre-cohort familiarity among cohort one team members relative to cohort two made getting organized a little more difficult.*

Perceptions of Group Skills, Job Interdependence, Orientations toward Learning, and Web 2.0 Capabilities

It was important at the outset to measure personal attributes that might affect participants' involvement on their teams and learning from ILEAD U, and mentors and apprentices in their respective roles. Mindful of the wide array of attributes this could entail and of the need to keep the data burden on those involved to a minimum, a decision was made to take measures in four areas that logic and previous research indicated might matter: group or team skills; level of current job interdependence; orientation toward learning; and confidence or self-efficacy in pre-exiting Web 2.0 capabilities.

Group Skills

Participants in both cohorts and mentors and apprentices in cohort two were asked to rate their level of experience with tasks that often arise in complex group or team work. The assumption was that the more prior experience participants had with such tasks, the more smoothly their teams might operate, since participants would have familiarity with what to do. The same question was asked of mentors and apprentices in the second cohort for the sake of comparison, but also, in the case of mentors, as a way

to assess how much experience they could bring to bear on the guidance they provided teams. The results of the self-ratings of group skills are shown in Table 4.

Table 4: Self-Ratings of Group Skills (median score)

1 = Lot of Experience 7 = No Experience	Participants Cohort 2	Participants Cohort 1	Mentors Cohort 2	Apprentices Cohort 2
Develop new project teams	3.0	4.0	2.0	3.0
Negotiate agreements	5.0	4.0	2.0	4.0
Resolve stakeholder conflicts	4.0	4.0	3.0	3.0
Adopt others' practices	2.0	2.0	2.5	2.0
Median Group Skills Score	3.5	3.5	2.3	3.1

Overall, participants rated their group skills on or near the midpoint of the range of experience. There are a couple of exceptions. For both cohorts, participants indicated a fairly high level of experience in adopting the practices and techniques of others. A high score on practice adoption would not appear to be unusual among professionals. And in cohort one, participants reported a lower level of experience in negotiating agreements with other organizations. Cohort two mentors rated themselves as having more experience than either set of participants in all skill areas except practice adoption, where they were essentially the same. Apprentices' ratings were closer to participants' than to mentors'.

Participants' self-ratings of their team or group skills going into ILEAD U were not correlated with subsequent measures of team functioning, contrary to expectation. However, there was a statistically significant negative correlation or association (-.479 at the .01 level of significance) between average group skills self-ratings and how participants rated the value of their team mentor at the end of ILEAD U. This may suggest – and it's only that, a suggestion – that participants who judged themselves to be experienced in working with or across groups at the beginning of the program may have given extra scrutiny to this quality in their mentors, or vice versa.

Job Interdependence

Participants in each cohort and mentors in cohort two were asked to indicate their level of agreement/disagreement with several statements about the interdependence of their current jobs with others in their library organization. The higher the degree of interdependence in one's employment, the easier it might be for that person to adapt to the teamwork required of ILEAD U teams. The results of the job interdependence question are presented in Table 5.

Table 5: Self-Ratings of Job Interdependence (median score)

1 = Strongly Agree 7 = Strongly Disagree	Participants Cohort 2	Participants Cohort 1	Mentors Cohort 2
Own performance depends on information from others	2.0	2.0	2.5
Able to plan without much coordination with others	3.0	3.0	3.0
Need to spend most time talking with others	3.0	3.0	3.0
Frequently asked for advice	1.0	1.0	2.0
Work fairly independently	2.0	2.0	2.0

Both participant cohorts and cohort two mentors agreed more than they disagreed with the various statements about job interdependence. However, agreement within each participant cohort did not necessarily mean respondents agreed that their jobs were both interdependent and independent. Those who agreed that their job performance depended on receiving accurate information from others were significantly less likely to say that they were able to plan their work without coordination. Similarly, those who agreed that they worked fairly independently were significantly less likely to report that do to their job they needed to spend most of the time talking to others. In other words, *many participants had jobs that were either interdependent or independent but not many had jobs that were both*.

Further analysis using the self-ratings of job interdependence did not produce useful findings regarding cohort one participants but did surface some interesting connections in cohort two with aspects of team functioning. *Higher scores on job independence at baseline were positively and significantly correlated with perceptions of how well structured a team was (.462 at the .01 level of significance), team ability (.388 at the .05 level of significance), and team awareness of different members' abilities (.394 at the .05 level of significance) in September 2011*, with about a month and a half to go before the end of the program. The relationship between these team functioning factors and job interdependence, while not statistically significant, was either negative or barely positive – that is, in the opposite direction of the relationship with independence. *Conceivably, cohort two participants with more job independence may have been more inclined to see the development of their teams as a creative task in which they had a relatively clear, useful, and complementary role to play that was under their control. Those with more job interdependence may have been more inhibited by their job experiences.*

Orientation toward Learning

Since ILEAD U was and is an opportunity for learning, it was necessary to get a baseline measure of participants' learning motivations. One of the common ways in research to get at these motivations is to divide them between the motivation to master the material (an intrinsic motivation) and the motivation to learn for the sake of recognition (an extrinsic motivation). Thus, a scale was constructed, derived from ways in which these twin orientations have been measured in much research, and included in the baseline survey of both participant cohorts and, just for the sake of comparison, in the baseline

survey of cohort two mentors and apprentices. It would have been convenient if participants had split neatly into two distinct groups, one driven by mastery and the other by performance. But, that rarely happens, and it did not happen with ILEAD U, as the results presented in Table 6 make plain.

Table 6: Orientation toward Learning (median score)

1 = Strongly Agree 7 = Strongly Disagree	Participants Cohort 2	Participants Cohort 1	Mentors Cohort 2	Apprentices Cohort 2
Important to extend range of my abilities (M)	1.0	1.0	1.0	1.0
Prefer tasks that force me to learn new things (M)	2.0	2.0	2.0	2.0
Better to stick with what works rather than risk failing (M)	5.0	5.0	5.0	6.0
Tend to set challenging goals in learning situations (M)	2.0	2.0	1.5	2.0
Value what others think of my performance (P)	2.0	1.0	1.0	1.0
Like to meet others' expectations of me (P)	1.0	1.0	1.5	1.0
Others' opinions of how well I do certain things are important to me (P)	2.0	2.0	1.5	2.0
Not interested in impressing others with my performance (P)	4.0	5.0	6.5	5.0

The results were consistent across all groups. *Participants, mentors, and apprentices responded in ways that indicated both a relatively strong mastery orientation and relatively strong performance orientation.* The only notable difference was been cohort two participants and mentors on their level of agreement/disagreement with the statement about not being interested in impressing others. Mentors were more likely than participants to disagree with this statement.

Since the above table reports the median scores for all respondents in each group, it could conceal respondents within groups who actually gave divergent responses on the mastery and performance items. A look at how each respondent rated these items indicated that divergence was uncommon, although more so for cohort two participants than cohort one. In cohort two, only four participants had mastery and performance scores that were separated by more than a point (i.e., one point on the seven-point scale). In cohort one, there were nine.

Factor analysis showed that even though scores for mastery and performance orientations tended not to be especially distinct (i.e., scores were similar), they were different enough to constitute two different factors for both cohorts of participants.[3] The resulting factors were then used in further analysis. *For cohort one, average scores on mastery orientation as measured at baseline were the strongest predictor of participants' confidence in their Web 2.0 abilities by the end of the program. For cohort two, neither mastery orientation nor performance orientation had any relationship with Web 2.0 confidence.* Why the difference between the cohorts? It is difficult to identify a specific explanation. One

[3] The resulting factors comported with what would have been predicted from the research literature on mastery and performance orientations, except for the last item in the table. Agreement/disagreement with the statement about "not interested in impressing others" was not correlated with the other items in the performance factor.

possibility is that the improvement of the program model between cohorts reduced the influence of individual learning motivation on how much participants gained from the experience.

Web 2.0 Capabilities

The most straightforward way to find out what people learned from ILEAD U would have been to measure levels of Web 2.0 know-how at the outset and then again at the conclusion of the program. While the evaluation did take a reading of Web 2.0 abilities at both points in time, it was not possible to do so each time using the same measures of those abilities. At the start of ILEAD U for the first cohort the curriculum – the skills and knowledge people would be trained in – was largely unspecified. And then, going into cohort two, the curriculum remained somewhat fluid, in order to adapt it to teams' needs. Consequently, for each cohort the baseline survey measured one set of Web 2.0 abilities and the survey at the conclusion of the program measured a mostly, but not entirely, different set geared to the actual curriculum that was delivered. While this was obviously not ideal in providing a way to track ILEAD U's effects on learning, it was deemed better than nothing. Here, the baseline results are reported. Consideration of results at the conclusion of each cohort is taken up in a later section of the report.

The baseline surveys presented participants (and mentors in cohort two) with a list of relatively well-known participatory technologies associated with Web 2.0. Respondents were asked to indicate how confident they were in their ability to teach each technology to someone else. Confidence or self-efficacy has been shown to be a decent barometer of actual learning or knowledge, and tying confidence to the ability to teach something to others provides a more stringent test of actual self-efficacy than just asking people the vaguer question of how confident they are. Participants' and mentors' ratings of their pre-ILEAD U confidence in using Web 2.0 are shown in Table 7.

Table 7: Initial Confidence in Teaching Web 2.0 Technologies (median scores)

1 = Very Certain 7 = Not Certain at All	Participants Cohort 2	Participants Cohort 1	Mentors Cohort 2
Blogging tools	2.0	3.5	2.5
Digital/audio podcasting	4.0	6.0	2.0
Digital photography	3.0	3.0	1.0
Gaming	4.0	4.0	3.0
Instant Messaging	1.0	2.0	2.0
Photo sharing websites	2.0	2.0	1.5
RSS Feeds	2.0	3.0	3.5
Social bookmarking	3.0	4.0	3.0
Social networking	2.0	2.0	2.5
Tagging	4.0	5.0	3.0
Videoconferencing	4.0	4.0	3.0
Virtual reference	2.0	3.0	3.0
Webconferencing	4.0	4.0	3.0
Wikis	2.0	3.0	2.5
Overall Median	**2.5**	**3.3**	**2.8**

While there was broad consistency in Web 2.0 confidence across participant cohorts and between them and cohort two mentors, there were some differences. *The most confident group at the start of ILEAD U was cohort two participants; they were even slightly more confident than their mentors. Participants in cohort two were as or more confident than their cohort one counterparts in all Web 2.0 technologies.* On the seven-point rating scale, they were more confident by more than a point with respect to blogging tools and digital/audio podcasting than cohort one.

It was hoped that confidence in using Web 2.0 at the start of ILEAD U might be related to subsequent learning. But, that was generally not the case in either cohort. Confidence at the beginning was not predictive of Web 2.0 confidence at the end, which may not be surprising given that beginning and ending confidence were measured differently. In cohort one there were significant relationships between Web 2.0 confidence at baseline and the value participants attached to a couple of the topics covered during the second in-person training program in June of 2010 – social media marketing (.430 at the .05 level of significance) and the content management language Drupal (.573 at the .01 level of significance).[4] Why these and not other topics is difficult to say, although in cohort one social media marketing was highly relevant to many of the teams. As for Drupal, appreciating it may have been more of an aspiration for participants who felt better at the beginning about their understanding of Web 2.0, since Drupal is more challenging to learn than WordPress but not as difficult as LAMP, the two other content management languages emphasized in ILEAD U.

There is one other association worth nothing between the baseline measure of Web 2.0 confidence and other variables. *For cohort two, there was a significant inverse relationship between confidence and participants' ratings of the value of the ILEAD U instructors at the conclusion of the program (-.402 at the .05 level of significance).* This correlation did not reach significance with cohort one, but it was in the same negative direction. It is possible that participants who were more confident in their Web 2.0 abilities going into ILEAD U simply got less from the instructors than others did or at least perceived less of a difference in know-how between themselves and instructors.

V. In-Person Training

Participants mainly learned about Web 2.0 and its use in advancing the role and work of libraries through the three in-person training programs each cohort year. They could learn in other ways, and surely many or all did. However, the opportunities to learn outside the in-person programs would have been limited. Most participants did not appear to be "freed up" substantially to participate in ILEAD U; it was simply added to whatever job workloads they already carried. Those same workloads also limited the time available for project team meetings and communication. The in-person programs, especially the content rich first two for each cohort, were the one opportunity all participants had to immerse themselves in Web 2.0. Indeed, such immersion was one of the aims of the model.

The in-person programs were evaluated in two ways. Evaluators observed sessions and rated each on seventeen criteria derived from research on the attributes of effective training and instruction with adults. Observer ratings were completed on all of the sessions in the first and second in-person programs for cohort one and the first in-person program of cohort two. There were too many sessions

[4] The value of training content was derived from the sum of the average scores given by participants for how much they had learned from the session, how much their team had used that content, and how much they personally had used it.

occurring simultaneously in cohort two's second in-person program to make observer ratings feasible. Even if this had not been true, there was limited value-added to be gained by then, since the main purpose of observation had been to generate feedback which the State Library could use to improve the program. The ratings of the first in-person program for cohort two were a way to see whether improvements arising from the feedback based on observations of cohort one training were actually having an effect. For cohort one, multiple observers were used and their scores were averaged to produce a final rating. For cohort two, one observer, who had also rated sessions during cohort one, provided ratings for most of the sessions in the first in-person program.

Observer ratings supplied a method for scrutinizing the training process. To get at effects of that process, within two to three months after each of the first two in-person programs for each cohort participants were surveyed on their perceptions of what had been gained from the training. Each time they were asked three questions: How much did you learn at [an in-person program] session? How much has your project team used content from that same session? And how much have you used that content for other purposes? In addition, cohort two mentors were asked the first two questions, and apprentices were asked the first. There were two reasons to wait 2-3 months after each in-person program before trying to gauge its value to those involved. First, gaining some distance in time from a training event would help people appraise it more realistically. Second, it would provide more opportunity for training content to be evaluated and applied.

Observer Ratings

Table 8 provides a summary of observer ratings of the first and second in-person programs for cohort one and the first in-person program for cohort two. For each rating criterion, an observer tried to determine how true it was for the session being observed. Not all criteria applied to every session. In particular, the criteria on opportunities for participants to practice the content being taught did not always apply to keynote presentations, which were delivered as lectures. By and large, though, the criteria were relevant across the board, thus warranting summarizing scores for each of the in-person programs as a whole.

The most notable pattern in the table is how the overall average rating improved from one in-person program to the next. The rating was on the whole only modest for cohort one's first in-person program, falling at about the mid-point of the seven-point scale. It took a big leap in the second in-person program, going from an essentially neutral position to a fairly positive assessment. And then, in the first in-person program for cohort two, it rose again, not by as much but enough to suggest continued improvement in the quality of training.

The main shortcoming of cohort one's first in-person program was the lack of participant engagement. Criteria pertaining to opportunities for participants to practice what they were learning and to help shape how sessions unfolded were all rated as close to being "not true at all." By and large, instructors at this early point in ILEAD U were using a traditional didactic approach in which they talked at participants in an effort to give them as much information as possible. *In addition to observer ratings, negative reactions to this approach were picked up in participant feedback at the conclusion of the first in-person program and during evaluator interviews with participants a couple of months later.* In response, the problem of insufficient efforts to engage participants was substantially corrected in the second in-person program and that correction was sustained in cohort two's first in-person program. Sessions became much more interactive and hands-on. The largest swing was in the rating on the criterion "practice opportunities involve authentic problems," which more than doubled between cohort

one's first in-person program and cohort two's first in-person program. Instructors learned to use examples drawn from the experience of librarians.

Table 8: Observer Ratings of March 1-3, 2011 In-Person Training Program Sessions

Rating Criteria 1 = Not true at all of Session 7 = Very true of Session	Cohort 2 1st In-Person	Cohort 1 1st In-Person	Cohort 1 2nd In-Person
Participant exploration precedes formal presentation	4.5	2.4	4.3
Conceptual, abstract thinking encouraged at right time	5.8	4.1	4.8
Knowledge and skills demonstrated before practice	5.1	3.4	4.7
Ample opportunity to practice	5.9	2.4	4.7
Practice opportunities involve authentic problems	6.1	2.5	5.1
Respect for participants' prior knowledge	5.7	4.2	5.3
Solid grasp of subject matter	6.1	5.8	6.2
Coherent conceptual understanding promoted	5.6	5.0	4.7
Concepts illustrated with clear, appropriate, real examples	6.2	5.1	5.5
Complex content divided into parts	6.0	4.7	5.3
Participants helped to see how parts fit together	6.0	4.7	5.7
Content gets more difficult during session	5.7	3.5	4.6
Each segment builds on previous one	6.2	4.9	6.1
Participant ideas give direction, focus to session	3.8	2.8	3.8
High proportion of participant talk	5.4	2.7	5.4
Instructors engage in extraneous content	2.7	3.5	2.7
Ample opportunity for participants to reflect	6.1	3.6	5.6
Overall Average	**5.5**	**3.8**	**5.0**

While the overall improvement between the second in-person program of cohort one and first in-person program of cohort two was not large, this masked a couple of more substantial gains in particular criteria. *Opportunity to practice what was being learned and content getting more difficult as a session transpired each improved by more than a point on the seven point scale.* The last improvement is noteworthy for the simple fact that in the first in-person program of cohort one only one session scored highly (between 5 and 7 on the 7-point scale) on having demonstrated increasing difficulty as it went along: the keynote by David Lankes, the lead instructor and a professional educator.

It should be pointed out that there was one criterion on which observer ratings never improved much across the three in-person programs. *By and large, participants helping to provide direction and focus to a session did not emerge as a quality of the training.* There were some exceptions in both the second in-person program of cohort one and the first in-person program of cohort two, but in the averaging that produced aggregate ratings the influence of these relatively high scores was muted by the larger number of sessions where participant direction was rated as either mostly or completely absent. Arguably, the fact that most sessions did not do well on this criterion might have been at least partly a function of the session time constraints built into the ILEAD U model. Instructors faced with having to deliver a certain amount of content within a limited amount of time may have had difficulty figuring out how to yield to participant direction and still get all of the content covered. A model that offered fewer

sessions but allotted more time per session might have made solving this problem easier. But that would have meant possibly depriving project teams and individual participants of topics to which they wanted or felt they needed exposure.

Participant, Mentor, and Apprentice Evaluations of In-Person Programs

Surveys asked cohort one participants after the second in-person program and cohort two participants, mentors, and apprentices after each of the first and second in-person programs to evaluate the learning and use of content from those programs. While the findings represent perceptions and do not demonstrate unequivocally how much was learned and how much got used, they do afford some insight into the impact of ILEAD U's training during each cohort period.

Table 9 provides a summary view of the perceived impact of each in-person program for which measures were obtained. Each number represents the median score for all sessions in an in-person program by the corresponding group of respondents. In cohort two, mentors were not asked about personal use and apprentices were asked about neither personal nor team use, thus accounting for the blanks in the table.

Table 9: Ratings of Learning and Use from In-Person Training Programs

1= A lot 7 = Not at all	How much did you learn? (median scores)	How much has your team used? (median scores)	How much have you used? (median scores)
Cohort 1 Second In-Person Program			
Participants	2.7	4.3	4.9
Cohort 2 First In-Person Program			
Participants	2.0	4.5	5.3
Mentors	1.3	2.0	
Apprentices	2.5		
Cohort 2 Second In-Person Program			
Participants	3.0	6.5	7.0
Mentors	3.0	6.0	
Apprentices	3.0		

Scores for perceived learning were fairly high throughout, although somewhat stronger for the second in-person program of cohort one and the first in-person program of cohort two compared to the second in-person program of cohort two. Cohort two mentors rated their learning from the first in-person program particularly high. It should be pointed out that perceptions of learning may have been more prone than those of use to respondent biases. Learning would have required self-evaluation, while judgments of use, even of the personal kind, would have been more likely to be governed to a degree by recall of actual behavior.

Partially to this point, scores for team and personal use in all cases were not as strong as for learning. Also, for participants, these scores became less favorable from one in-person program to the next. The erosion for team use from the second in-person program of cohort one to the first in-person program of cohort two was negligible, but worsened appreciably from the latter program to cohort two's second in-person program. Essentially, the same pattern prevailed for personal use. In both cases, cohort two participants' median overall assessments following the second in-person program suggest almost no active take-up of the content presented during that program.[5] For team use, this was largely confirmed by mentors only slightly less negative judgment, whereas mentors' evaluation of team use following the first in-person program of cohort two was very positive, much more so than the evaluation provided by participants themselves (2.0 vs. 4.5).

A more refined sense of learning and use of in-person training content for cohort two can be derived from looking at the assessments of the particular sessions of each program. The earlier 2010 evaluation report provides the same analysis for cohort one, and those findings are not repeated hear. Nor are cohorts two and one compared at this more detailed level, since content differed between them.

First In-Person Program of Cohort Two (March 2011)

How participants, mentors, and apprentices rated their learning from each session in the first in-person program can be seen in Table 10. *Most of the scores for all groups were below the mid-point of the scale, suggesting more rather than less learning.* Mentors rendered a neutral judgment about how much they learned from the session on "finding projects," which also earned a one-point worse evaluation from apprentices. Also, apprentices reported not learning much from sessions on working with community, team building, and online conversations. Possibly, they viewed these sessions as too specific to ILEAD U or the context of Illinois to have relevance in another state.

Table 10: Assessments of Learning from March 2011 Training Program

	How much did you learn from this session? (Median Scores)		
1 = A lot 7 = A little	Participants	Mentors	Apprentices
Keynote: Lankes	1.0	1.0	2.0

[5] Interestingly, the average score for personal use of content from cohort two's second in person program was predictive of participants' Web 2.0 confidence by the time the cohort concluded. Thus, even though overall personal use was quite low, those who reported relatively more personal use were more likely to indicate higher confidence at the end.

Basic Video Editing	2.0	2.0	1.5
Keynote: Neiburger	2.0	1.0	2.0
Digitization	3.0	1.5	2.0
Finding Projects	3.0	4.0	5.0
Working with Community	3.5	1.5	5.0
Community Needs Assessment	3.0	1.0	3.5
Copyright	2.0	1.0	3.0
Atlas	2.0	1.0	2.0
Keynote: Tench	2.0	1.0	1.0
Team Building	3.5	2.0	4.0
Team Dynamics	3.0	2.0	3.0
Online Conversations	2.0	1.0	5.0
Digital Collections	2.0	2.0	2.0
Total Median Score	**2.0**	**1.3**	**2.5**

Table 11 shows cohort two participants' and mentors' evaluation of team use and participants' evaluation of personal use of content from the March in-person program.

Table 11: Assessments of Use of Learning from March 2011 Training Program

	How much has team used information from this session? (Median Scores)		How much have you used information from this session? (Median Scores
1 = A lot 7 = Not at all	Participants	Mentors	Participants
Keynote: Lankes	3.0	1.0	2.0
Basic Video Editing	3.0	2.0	4.0
Keynote: Neiburger	4.0	1.0	3.0
Digitization	6.0	2.0	5.0
Finding Projects	4.0	2.5	5.0
Working with Community	4.0	2.0	6.5
Community Needs Assessment	3.0	1.5	5.5
Copyright	6.0	3.0	6.5
Lankes' Atlas	6.5	2.0	5.0

Keynote: Tench	5.0	1.0	3.5
Team Building	4.0	2.0	6.0
Team Dynamics	5.0	1.0	7.0
Online Conversations	5.0	3.0	7.0
Digital Collections	6.0	3.0	5.5
Total Median Score	**4.5**	**2.0**	**5.3**

The first thing to notice are the rather striking differences between participants' reports of team use of the content from the various sessions and mentors' reports. With only two sessions were the differences between participants and mentors less than two points on the 7-point scale: basic video editing and community needs assessment. In several cases, the differences were so wide as to suggest that participants and mentors read the survey question differently. It may be that participants were inclined to interpret the question literally. If a participant perceived that session content was not being explicitly and intentionally used by the team to carry out its project, then that content received a low score for team use. Mentors on the other hand may have understood the question more broadly to allow for any indication that team members had absorbed content, whether for the team or not. Additionally, mentors may simply have not have been in contact with their teams to the extent necessary to make an accurate appraisal of use, and then filled in that gap with a favorable review. Spring interviews with mentors indicated that some of them may not have been as actively engaged with their team as others.

There were a couple of differences across teams in use of training content. Crosstabulations showed that teams differed from one another in their reported use of content from the Lankes and Tench Keynotes. Based on the average of individual member scores for each team, some teams indicated relatively high use of these two sources of content while others indicated relatively little use.

Participants reported overall less personal use than team use of training content, although this was not the case with each individual session. For all three of the keynotes – Lankes, Neiburger, and Tench – there was more reported personal use than team use. This was also true for Digitization, the Lankes' Atlas, and Digital Collections. By contrast, the explicitly community and team oriented topics were reported to be used less by individual participants than by their teams. To the knowledge of the evaluators, no session was specifically designed to serve one kind of use or the other.

Second In-Person Program of Cohort Two (June 2011)

How much participants, mentors, and apprentices said they learned from the various sessions of cohort two's second in-person program is provided in Table 12. *Generally, as with the first in-person program, all three groups reported learning more rather than less, although the scores were not as positive.* There was no session that participants and mentors scored above the mid-point of the range, indicating relatively little learning. However, this was not true for apprentices, who reported learning little from the Newman Keynote and the session on eBooks. Learning for the three groups may have fallen off slightly from the first in-person program because the second program curriculum was more of a potpourri of topics than the first, which tended to focus explicitly on the needs of teams and their projects. Those who attended the second program may have been exposed to a greater variety of content, and then, when asked more than two months later to say how much they learned, might have had difficulty recalling details of particular sessions.

Table 12: Assessments of Learning from June 2011 Training Program

	How much did you learn from this session? (Median Scores)		
1 = A lot 7 = A little	Participants	Mentors	Apprentices
Keynote: Newman	4.0	2.5	7.0
Content Mngt. Strategy	3.0	4.0	3.0
LAMP	3.5	2.0	1.0
Technology Planning	3.0	3.0	2.0
eBooks	3.5	3.5	7.0
Online Learning Solutions	3.5	3.0	3.0
Android Apps	3.0	4.0	5.5
Drupal	2.0	2.0	3.0
WordPress 1	3.0	3.0	4.5
WordPress 2	2.5	1.5	3.0
Team Building	3.0	3.0	3.0
Podcasting	2.5	2.0	4.5
Managing Social Life	3.0	3.0	5.0
iPhones & iPads	2.0	2.0	3.0
Screencasting	2.0	1.0	3.0
Technology Soup	1.5	3.5	2.5
Selling Community Projects	2.5	3.0	3.0
21st Century Learners	3.0	2.0	2.0
Gadgets	2.0	2.5	2.0
Community Reps	2.0	3.0	3.0
The Atlas	3.0	2.0	3.0
Total Median Score	**3.0**	**3.0**	**3.0**

As discussed previously, *reported team and personal use of training content fell off dramatically for the second in-person program compared to the first. Table 13 shows that the decline was experienced fairly uniformly across sessions.* For a majority of sessions, participants and mentors reported no or virtually no team use of that content. It was worse for personal use, where no or virtually no use was reported for all but four of the 21 sessions. For both team and personal use, only one session – Gadgets – scored on the positive side of the scale (between 1 and 3) for participants.

One of the interesting features of the measures of use of content from the second in-person program is the presence of more differences across teams than for the first in-person program. There were team differences (the average of individual team members' responses) in team use of LAMP and Drupal, and team differences in-personal use of the Newman Keynote, Screencasting, Technology Soup, Selling Community Projects, and Community Reps. So, even though the aggregate median score for a session in Table 13 might indicate no or almost no use, there could have been a team or two for which this was slightly less true of some of its members.

Table 13: Assessments of Use of Learning from June 2011 Training Program

	How much has team used information from this session? (Median Scores)		How much have you used information from this session? (Median Scores
1 = A lot 7 = Not at all	Participants	Mentors	Participants
Keynote: Newman	6.0	4.5	5.0
Content Mngt. Strategy	4.0	7.0	6.0
LAMP	7.0	7.0	7.0
Technology Planning	6.5	5.0	7.0
eBooks	7.0	7.0	7.0
Online Learning Solutions	7.0	7.0	7.0
Android Apps	7.0	4.5	7.0
Drupal	5.5	7.0	7.0
WordPress 1	6.0	7.0	7.0
WordPress 2	7.0	7.0	7.0
Team Building	7.0	4.5	7.0
Podcasting	7.0	7.0	7.0
Managing Social Life	5.0	5.0	5.5
iPhones & iPads	5.5	2.0	6.0
Screencasting	6.5	6.5	7.0
Technology Soup	7.0	5.5	7.0
Selling Community Projects	4.0	3.5	7.0
21st Century Learners	6.0	6.0	7.0
Gadgets	3.0	2.5	3.0
Community Reps	7.0	6.0	7.0
The Atlas	5.0	4.0	4.0
Total Median Score	**6.5**	**6.0**	**7.0**

The effects of in-person program content will come up again when the report turns to what the post-ILEAD U surveys found about whether participants have been using what they learned.

VI. Project Team Functioning

The ILEAD U model assumes that Web 2.0 participatory technologies can be learned more effectively in a participatory context, namely, interlibrary teams. Participating librarians in both cohorts attended the

in-person programs as members of their teams, participated in training sessions as members of their teams, and worked on their teams in between in-person programs. Because of the centrality of teams, the evaluation devoted significant attention to trying to understand how teams functioned and with what effects, including new or expanded use of Web 2.0 technologies and ideas by participants or their libraries after ILEAD U ended.

Phone interviews of cohort one participants in the spring of 2010 (between the first and second in-person programs) focused mostly on questions about their teams. The results of those interviews helped to establish the basic team constructs that would be measured more rigorously through surveys in all subsequent data collections from participants. The surveys also evolved. The first survey of cohort one, in the early fall of 2010, showed which items appeared to provide a reliable gauge of participants' perceptions of their teams. Those that failed this test were dropped for use in any subsequent survey. Learning from the experience in evaluating cohort one led to improvements in survey instrument design for cohort two. Also, as previously noted, while surveys asked some of the same questions, they were mostly adapted to the different stages of each cohort, more so for cohort two than one.

Participant Roles and Responsibilities

One of the first questions on the mind of people when they enter a new group is what their role is. This interest might be accentuated in novel temporary groups, like the teams in ILEAD U, where people may not be able to draw readily on their prior experiences to guide them individually or collectively in their choice of roles. The spring 2010 interviews of cohort one indicated that team members often had different ideas about their roles. This led to the creation of a standard, basic set of role questions that were posed in each of the subsequent surveys administered to cohort two participants while they were active in ILEAD U. Posing the same questions was done to see whether roles changed, which might be an indicator of team evolution. An additional, simple set of questions was developed to situate each participant's ILEAD U role vis-a-vis his or her other work responsibilities, since the ILEAD U role would compete for time and attention. Each participant was also asked to answer a question about the team's grasp of his or her role. The results of these questions appear in Table 14.

Table 14: Participant Roles & Responsibilities (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 Fall 2011	Cohort 2 Spring 2011	Cohort 1 Fall 2010
I am responsible for particular tasks.	2.0	3.0	
Every team member has the same role.	4.0	3.0	
I am on the team to represent my library.	2.0	2.0	
I am on the team because of my expertise.	3.0	3.0	
I am on the team to learn more about Web 2.0.	2.0	2.0	

How much of a priority is ILEAD U for you? (1 = High priority, 7 = Low priority)	2.0	3.0	2.0
To what extent have your other responsibilities conflicted with ILEAD U? (1 = A lot, 7 = Not at all)	3.0	3.0	2.0
How clear is the team about what you are personally responsible for? (1 = Very clear, 7 = Not at all clear)	2.0	3.0	3.0

Responses to the first five questions, asked only of cohort two, basically conform to expectation. *Participants perceived that their roles became more differentiated over time, which would be anticipated in a purposeful group trying to accomplish its goal against a deadline.* Labor has to be divided in some way to get the group job done. Participant agreement with the view that they were responsible for a particular task on the team changed in a positive direction by one point on the seven-point scale, and agreement that every member had the same role changed by the same amount in the expected negative direction. The latter change was statistically significant,[6] and allayed a worry that surfaced in the evaluation of cohort one, when the spring 2010 interviews indicated that a majority of participants saw every member of the team as playing the same role. *Consistent with these trends, cohort two participants also reported that their role became significantly clearer to their team from one time period to the next.* Clarity should increase as roles became more differentiated. Data were lacking to make the same time comparison for cohort one, although their perception of team clarity about roles in the fall of 2010 was not as strong as it was for cohort two at the same point in 2011.

It is interesting that cohort two ratings for being on a team because of one's expertise neither changed over time nor scored better than just on the positive side of the scale. Expertise may not have been highly salient in team formation, and not every member of a team may have had a definable, relevant expertise to offer. Interviews with mentors provided some support for these possibilities.

For cohort two participants, ILEAD U became a higher priority between the spring and the early fall of 2011. The change fell just outside of being statistically significant. It is not as clear, from the available data, whether a favorable shift occurred in cohort one, although it is notable that at approximately the same early fall moment in the program year, cohort one gave ILEAD U the same priority as cohort two did. Though not shown in the table, participants in both cohorts were also asked to indicate how much time they had been giving to ILEAD U, since time might be in indicator of priority, too. Spring 2010 interviews with cohort one suggested that a little more than half of them were giving more than two hours a week, while the spring 2011 survey of cohort two found that less than ten percent were giving that amount of time. The early fall surveys of participants in their respective program years showed that in each cohort those giving more than two hours a week was close to 50 percent. *So, while time allocations for cohort one did not change much between spring and fall, they changed substantially for cohort two.* The time increase was also consistent with the increase in ILEAD U's priority.

[6] Statistical significance here was determined using a method known as the T-Test, which allows individual responses to the same question at different points in time to be compared.

Both cohorts were inclined to agree that ILEAD U conflicted with their other job responsibilities. Though the conflict appeared to be somewhat stronger for cohort one, for cohort two, while the median level of agreement did not change between the spring and the fall of 2011, the numbers of participants (not shown in Table 14) more likely to agree (score of 1 to 3) than disagree (score 5 to 7) increased from 68% to 81%. In other words, *participants' sense of ILEAD U's conflict with their jobs rose simultaneously with an increase in the time they were giving to the program and their perception of its priority to them.*

Role clarity was significantly correlated with cohort two participants' perception of the value of their team when this was measured in the survey administered at the end of the program (. 575 at the .01 level of significance). Put simply, participants who believed their role was clear or became clear during the program were apt think well of their team by the end. Role clarity in cohort one was not measured precisely enough to analyze its relationship with final team value. Interestingly, the time cohort two participants reported giving to ILEAD U early in the program (spring 2011) was also positively associated with their perceptions of team value at the end (. 529 at the .01 level of significance), but time given later (early fall 2011) and closer to the end of the program was not related to team value. Though role clarity and time were correlated with team value, they were not correlated with each other.

Team Direction

Research has shown that having a clear and compelling direction is important to team success. Surveys asked participants in both cohorts several questions about the team's project goal and progress toward achieving it. In addition, surveys of cohort two queried participants on their perceptions of how clear the team was about its goal, about aspects of team functioning that might affect goal achievement, and about the importance of that achievement to them and to the team.

The top part of Table 15 shows participants' levels of agreement with various statements about team direction in the fall of each cohort year and in the spring of cohort two. The spring survey in 2011 was more limited than the fall survey to reflect the more limited development of project teams only a few months into the program year. Also, the gist of some of the items excluded from the 2011 spring survey was picked up in questions about clarity that were given to cohort two in both the spring and the fall; these appear in the second part of the table.

Findings show cohort two participants perceived the team goal as challenging and consequential at both points time, although not extremely so. The team goal was seen as somewhat more challenging by cohort one in the fall of 2010. Possibly, cohort one teams pursued more ambitious projects, but this does not appear to be true as a factual matter and is contradicted by their tendency to agree with the statement (further down the table) that the team goal was well within reach, contrary to the median tendency of cohort two in response to the same question. It seems more plausible that cohort one, as ILEAD U's pioneers, simply invested their efforts with slightly more significance than cohort two did.

Team difficulties with direction revealed both similarities and differences between the two cohorts and within cohort two between the spring and fall of 2011. In the fall of their respective years, both cohorts largely agreed that by then members were clear about the team goal and were fairly confident about accomplishing the goal by the conclusion of the program year. *But the two cohorts differed sharply in their perceptions of continuing uncertainty about teams' goals and whether there were conflicting priorities on teams.* Cohort two strongly disagreed with the statements about uncertainty and conflict, while cohort one tended to agree with each. Likewise, the cohorts differed in the strength of their views of team difficulties in carrying out plans, although not by much.

Table 15: Team Direction (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 Fall 2011	Cohort 2 Spring 2011	Cohort 1 Fall 2010
Team goal is so challenging have to stretch to accomplish it.	3.0	3.0	2.0
Team goal is of great consequence for those we serve.	3.0	3.0	3.0
What our project team is supposed to accomplish remains uncertain.	6.0		2.5
The goals/priorities of team are not clear enough.	6.0	4.0	
Conflicting priorities exist on the team.	6.0	4.0	3.0
Team goal is specified so clearly everyone should know what team is trying to accomplish.	2.0		2.5
Team goal is not especially challenging; well within our reach.	6.0		3.0
Our team has a great deal of difficulty carrying out the plans we make.	4.0		5.0
I am certain our team goal will be accomplished by the completion of the cohort.	3.0		3.0
1 = Very clear 7 = Not clear at all			
How clear is team on each of the tasks that need to be completed to accomplish goal?	2.0	4.0	
How clear is team on how it should divide its time among tasks?	2.0	4.0	
How clear is team on what constitutes "successful performance" for it?	3.0	4.0	
How clear is team on criteria for evaluating its final product?	3.0	4.0	
How clear is team on what its final output will look like?	2.0	4.0	
1 = Very important 2 = Not at all important			
How important is it to you personally that the team accomplish its goal?	1.0	1.0	
How important to your team is accomplishing its goal?	2.0	2.0	

Why did the two cohorts differ so much on uncertainty about team direction and conflicting priorities in the early fall each year, with less than two months to go before the end of the program? It is difficult to say for sure, but cohort one may have been affected more by the relatively uncertain nature of ILEAD U

overall in that first instantiation of the model. As already observed, cohort two teams appeared to start off better organized, because that was something which the State Library staff emphasized and which did not get emphasized as much in cohort one. In a way, each step for cohort one was a new step that no one had taken before, and that, by its very nature, may have induced a greater sense of uncertainty and where there is uncertainty conflict may not be far behind. Consistent with the interpretation that the circumstances for the two cohorts were not identical is evidence in the table showing improvement over time in the second cohort's perceptions of the clarity of goals and priorities and diminution of conflict. Moreover, the second cohort's median level of disagreement with the conflict statement (conflicting priorities exist on team) in the spring of 2011(early in the program) was stronger than the first cohort's level of disagreement with the same statement in the fall of 2010 (late in the program). In other words, cohort two may have gotten off to a better start in terms of team direction, at least as measured by these survey items. As will be discussed later in the report, cohort one participants' sense of uncertainty about team direction relatively late in the program may have not been strictly a function of team behavior but might also have had roots in their own workplaces.

A series of questions in the spring and fall surveys of cohort two were designed to dig more deeply into participants' clarity about the direction of their team. The clarity questions focused not just on the team goal, but also on the tasks to accomplish it, how to measure performance toward it, how to evaluate results, and what the final output of the team will look like. *In all cases, participants' responses moved in the hoped for direction between the spring and the fall toward more clarity, and in all but one case, how to evaluate results, the shifts were statistically significant.* Similar questions were not asked of cohort one, but again, related survey items as discussed above suggest that those participants did not perceive as much improvement over time in the clarity of team direction.

The previous survey questions all solicited participants' perception of team direction as something factual. The final two items in Table 15 asked cohort two, at each point in time, not about the existence or clarity of the team goal but about the importance of accomplishing it. They were asked about the importance to themselves and then their perception of its importance to their team. *In both the summer and the fall, participants rated the importance of goal accomplishment to themselves very highly and a little less so to their team.* The difference between personal importance and importance to the team, while not statistically significant, may in part have been due to one team in particular where the difference was greater than a little, suggesting some team dysfunction.

One of the aims of the evaluations both cohorts completed at the end of ILEAD U was to find out how much participants valued their teams. Several of the items used to test this quality emerged in subsequent analysis as a single team value factor in the second cohort. The results were not as clear for cohort one. Linear regressions showed that the strongest predictors of scores on this team value factor were what teams were perceived to do early on to establish their project goals. There will be more to say about this in section seven of the report, when the results of final evaluations are taken up.

Commitment to the Team

The evaluation of the first cohort of ILEAD U did not directly measure participants' sense of commitment or belonging to their team. To be sure, the questions, asked of both cohorts, about how much of priority ILEAD U was and how much time they gave to it could be a way to gauge commitment. But, interpreting answers to these questions as evidence of commitment could be confounded by the cross pressures on participants created by their employment. A participant might want to give to ILEAD U but could have been prevented by his or her job from doing so. Also, the relevant research literature has generally

supported the view of different kinds of commitment, including behavioral commitment (e.g., time given) and affective commitment (e.g., sense of belonging). To help overcome this limitation, the evaluation of cohort two posed a series of survey questions in the spring and the fall that asked participants about their commitment to the team. Their median responses are presented in Table 16.

Table 16: Team Commitment (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 Fall 2011	Cohort 2 Spring 2011
I really feel as if team's problems are my own.	4.0	4.0
I would feel guilty if I left my team now.	1.0	1.0
I do not feel a strong sense of belonging to this team.	6.0	6.0
I would not leave my team because I have a sense of obligation to it.	1.0	1.0
This team has a great deal of personal meaning for me.	2.0	3.0
1 = Very important 2 = Not at all important		
How important is it to you personally that you have a sense of belonging to your team?	2.0	2.0
How important to your team is it that every member feels a sense of belonging to the team?	3.0	3.0

The overall pattern reflected in the table shows a fairly strong sense of belonging to the team at both points in time, and even a strengthening of this sense from the spring to the fall when belonging is measured as "personal meaning." Just as with team direction, participants perceived this sense of belonging as somewhat stronger for themselves individually than for their team as a whole, and the difference here may partly be due to a couple of teams in which sense of belonging was lower than for other teams. It may also be due more generally to the limited ability of teams to serve as a source of identity for their members. *The neutral median score at both times for participants feeling team problems as their own could be seen as a reluctance to fully invest in something temporary and cross-library.*

Interestingly, but perhaps not surprisingly, participants' reports in the spring and fall of how much time they had been giving to ILEAD U and how much of a priority it was for them were significantly correlated with measures of belonging. Thus, even though there had been concern that time and priority might not do a good enough job representing commitment, the data appear to suggest otherwise.

The strength of participants' commitment to their teams in the spring of 2011 was found by linear regression to be the strongest predictor of participants' assessments, just after the end of the program year, of how much they had valued the ILEAD U experience.[7] So, while, as described in the discussion of

[7] In both time periods, it was possible to reduce items in the upper part of Table 16 to a single factor measuring commitment (not exactly the same items each time) and to reduce the bottom items on importance to a single factor as well.

team direction, early goal setting was associated with final judgments of team value, an early sense of belonging was associated, not with team value, but the overall value of the ILEAD U experience. This will come up for further discussion in section seven.

Communication

In any kind of group or team work, communication is critical in coordinating action across people. Communication was especially important in ILEAD U because team members were mostly unfamiliar with one another beforehand, had to work across the distances separating their employing organizations, mostly had to fit ILEAD U into their already full-time jobs, and had to try to reach a complex project goal in a relatively short amount of time. The evaluation asked participants about how they communicated and also posed questions designed to get at some of the more important effects of communication on the relationships among members.

Communication Methods

For the first cohort, participants were asked about their team communications during the spring 2010 interviews and then the responses to these questions led to the formulation of a standard way to measure the frequency and use of communication methods in subsequent surveys of both cohorts. Here, only the findings from surveys are reported and discussed.

How often participants used various communication methods is shown in Table 17. The first two columns after the list of methods represent cohort two's responses to the communication frequency questions in the spring and fall 2011 surveys. The next column shows how the second cohort responded to a question in the baseline survey (winter 2011), which asked them to indicate how often they used these different methods in their jobs. The last column reports how cohort two responded to these questions in their fall 2010 survey.

Table 17: Frequency of Use of Communication Methods (Medians)

1 = Very often 7 = Not at all	Cohort 2 Fall 2011	Cohort 2 Spring 2011	Cohort 2 Baseline 2011 Personal	Cohort 1 Fall 2010
Email	1.0	1.0	1.0	1.0
Electronic meetings	4.0	3.0	5.0	2.0
Teleconferencing	6.0	7.0	4.0	7.0
Videoconferencing	7.0	7.0	6.0	7.0
Phone calls	4.0	4.0	2.0	5.0
File Sharing	2.0	4.0	3.0	2.0
Voicemail	7.0	7.0	3.0	7.0
Face-to-face meetings	2.0	3.0	1.0	2.0

Before discussing the table, there are some additional findings from the 2011 baseline survey that are relevant here and important to report. Participants were asked at baseline whether their teams had met and how often they were communicating with other members during the startup period. These questions were added to the baseline instrument because of the greater stress in the second cohort on getting organized early. *Thirteen out of 38 participants said their team had already met in-person, 24 said their team had met online, and 9 reported having both met in-person and online. When asked how often they were communicating with team members at this early stage, the median response was every other week.* This is useful information to know in general, but it also figures into how participants perceived the impact of their team projects several months after ILEAD U concluded. Communication during the main period of ILEAD U activity did not appear to affect these perceptions, but communication at the start did, a peculiar finding that will be examined more closely in the final section of the report.

The two cohorts indicated similar communication patterns in the fall of their respective years, with one exception. The first cohort reported relatively frequent use of electronic meetings, while the second cohort did not. Indeed, for the second cohort, electronic meeting use reportedly declined between the spring and fall. A look below the surface shows that such use actually increased for a couple of the teams, but declined for all of the others. While it declined, face to face meetings and file sharing increased, which also seemed to occur in cohort one as teams got down to the wire in completing their projects. *For both cohorts, email was the dominant method of communication, followed by file sharing and face to face meetings.*

A score was computed for each participant based on how much she or he said the team communicated when all methods were considered together. This score showed no differences across teams in cohort one, nor in the second cohort at the time of the spring survey in 2011. However, crosstabulations showed that there were perceived differences among second cohort teams in overall communication frequency by the fall 2011 survey. What this meant to team functioning, if anything, is not clear.

The job-related communication practices of the second cohort at baseline were what one might expect. While they reported using email a lot, just as they did later during ILEAD U, they reported just as much reliance on face to face meetings, which makes sense for people working inside an organization. Phone calls, voicemail, and teleconferencing were also more widely used than during ILEAD U. All in all, cohort two participants indicated fairly frequent utilization of a more varied set of communication methods in their jobs than they resorted to while participating in ILEAD U.

Table 18 shows how participants rated the helpfulness of the different communication methods during ILEAD U. *By and large, the ratings were consistently high between cohorts and within cohort two across time.* The only notable disparities between cohorts were teleconferencing and videoconferencing, which the first cohort rated more highly. Within the second cohort, there were no notable shifts, except for file sharing, which became more important between the spring and fall.

Table 18: Helpfulness of Communication Methods (Medians)

1 = Very helpful 7 = Not at all helpful	Cohort 2 Fall 2011	Cohort 2 Spring 2011	Cohort 1 Fall 2010
Email	1.0	1.0	1.0
Electronic meetings	2.0	2.0	1.0

Teleconferencing	4.0	3.5	1.0
Videoconferencing	3.0	3.5	1.5
Phone calls	1.0	1.0	2.0
File Sharing	1.0	2.0	2.0
Voicemail	3.0	3.0	4.0
Face-to-face meetings	1.0	1.0	1.0

Effects of Communication

Survey questions on the effects of team communication were designed to get at the role of communication in helping the team accomplish its task and how members related to one another, which could both affect and be affected by communication. The responses to these questions are shown in Table 19.

Table 19: Communication & Cohesion (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 Fall 2011	Cohort 2 Spring 2011	Cohort 1 Fall 2010
Members of team have to depend heavily on one another to get work done.	2.0		2.0
Information and knowledge available to team has been more than adequate.	3.0		3.0
Team members are too dissimilar to work together well.	7.0		6.0
How seriously team members' ideas are taken often depends on who the person is than on how much they know.	6.0		4.0
Team tends to handle differences of opinion privately or offline, rather than addressing them directly as a group.	4.0		4.0
1 = Very effective 2 = Not effective			
How effective has communication been among the members of the team?	2.5	3.0	2.0

Except for the question on the effectiveness of communication, these items were not included in the spring 2011 survey of the second cohort, since at the early point participants might not have had enough experience to form clear opinions about cohesion among team members. *The first two items focused on how communication was helping them to accomplish the team task, and here the median responses of the two cohorts showed the same fairly high level of agreement.* Responses diverged some, however, when attention shifted to relationships among team members. While both cohorts took a neutral position on team differences being handled privately or offline, *cohort two disagreed more strongly with the statements about members being too dissimilar and the seriousness of their ideas depending on who they are.* Cohort one was inclined to neither agree nor disagree with the later statement.

A factor analysis of responses to the team function items in the fall 2010 survey of the first cohort resulted in the "seriousness of their ideas" statement aligning with other items reflecting possible conflict and discord on the team. A similar factor, with this statement included, did not emerge when analyzing the same items for cohort two. *While disharmony was far from being pronounced in cohort one, these findings and others in this report and the previous report suggest that teams in the initial cohort may have been somewhat more prone to relationship challenges.*

Team Ability

Logically speaking, more able teams should have been able to move toward accomplishment of their project goal more effectively or have served as better contexts for Web 2.0 learning than less able teams. Team ability was measured in both cohorts by asking participants direct questions about what they perceived to be the abilities of their team. Also, in the second cohort, the spring and fall surveys included additional questions on participants' perceptions of team members' awareness of one another's abilities. Awareness of who knows what or who is good at what in a group has been shown in research to affect group performance. The results of the team ability questions appear in Table 20.

Table 20: Team Awareness & Ability (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 Fall 2011	Cohort 2 Spring 2011	Cohort 1 Fall 2010
Team members do not know what skills and knowledge they each possess.	6.0	6.0	
Team members are assigned to tasks commensurate with their knowledge and skill.	2.0	4.0	
There is a clear team leader.	4.0	4.0	
The team has a "good map" of each other's talents and skills.	2.0	3.0	
Team does not have a broad enough range of experiences and perspectives to accomplish its goal.	6.0		6.0
Team members have more than enough talent and experience for the goal we are trying to accomplish.	2.0		1.0
Team has nearly an ideal mix of members.	2.0		2.0
Some team members lack the knowledge and skill that they need to do their parts.	6.0		6.0
Everyone on the team has the special skills needed for what we are trying to accomplish.	3.0		2.0
Team often comes up with innovative ways of proceeding.	3.0		2.0

Generally, the pattern of responses was consistent across cohorts and within cohort one: median scores indicated relatively high levels of confidence in team ability and in team members' awareness of the skills, experiences, and talents present on the team. However, there were some differences worth noting. First, cohort one overall expressed slightly more confidence in the ability of their teams than cohort two did. It's quite possible that this was not a true reflection of differences in team ability between cohorts. In fact, as already reported, initial Web 2.0 confidence was higher for cohort two. Rather, it may have reflected a greater tendency by cohort one, as the pioneering group, to offer socially desirable responses to the survey questions.

Second, cohort two reported improvement in awareness of team abilities between the spring and the fall. Agreement with the statement on members being assigned to tasks commensurate with their abilities actually increased in a statistically significant way. Perceiving the team to have a clear leader did not change, implying that this may have been a decision settled early in the life of most teams. The pattern was similar in cohort one.

Factor analysis revealed that the team ability items for cohort two did not measure a single underlying factor but two different factors. One represented items measuring awareness of the different abilities on the team and the other perceptions of overall team ability. The exact composition of the factors differed between the spring and fall surveys, but their basic structures remained consistent. Further analysis showed that the factor measuring overall team ability in the fall of 2011 was positively predictive of two different ILEAD U outcomes for cohort two: participants Web 2.0 confidence at the conclusion of the program and participants' ratings in the followup survey after the end of ILEAD U of how supportive their employer was of their involvement in ILEAD U. The direction of influence in both these cases, however, is not known. It is plausible that all three – team ability, final Web 2.0 confidence, and employer support – were mutually reinforcing. As for the factor measuring awareness of different abilities on the team, the version derived from the data from the fall 2011 survey was not predictive of any outcomes.

One aspect of awareness, though, was related to the baseline measure of the strength of participants' orientation toward learning at the beginning, but not in the way that might be expected. Level of agreement in the fall with the statement on tasks being assigned commensurate with knowledge and skill was clearly negatively correlated with baseline learning orientation (-.584 at the .01 level of significance). One explanation of this apparently anomalous finding is that some participants with stronger motivations to learn may have found their "talents" underutilized by their team. Maybe, as the clock ticked down on project completion, teams started taking short cuts to get work done, including limiting who did the work.

Team Structure

The first part of this report section on the evaluation of team functioning focused on participants' perceptions of their team roles and responsibilities. Here the report turns to their perceptions of the structure of the team in general. Clear structures have been associated in research with enabling group members to focus on their task because uncertainty about who has is supposed to do what when has been reduced.

Median responses to questions on structure are reported in Table 21. As can be seen, there was only one question on this dimension of team functioning in the fall 2010 survey of cohort one. All other questions were asked exclusively of cohort two. The evaluation of cohort one had indicated that giving

more attention to an examination of structure in cohort two might be in order, owing to some of the challenges teams in the first cohort had getting organized.

Table 21: Team Structure (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 Fall 2011	Cohort 2 Spring 2011	Cohort 1 Fall 2010
Every member of team has a clear understanding of her or his role.			2.5
Our individual roles on the team are very clear and we don't stray from them.	4.0	4.0	
The team follows a very structured work schedule	5.0	5.0	
1 = Very clear 7 = Not clear at all			
How clear is the team on when each of its tasks will be completed?	2.0	4.0	
1 = Very important 2 = Not at all important			
How important is it to you personally that roles and responsibilities on your team care clearly defined?	2.0	2.0	
How important to your team is it that roles and responsibilities of its members are clearly defined?	3.0	3.0	

The top two questions in the table – one for the first cohort, the other for the second – are similar but different enough to be regarded as not measuring exactly the same thing. Cohort one tended to agree that team members understood their roles, while cohort two neither agreed nor disagreed that members had clear roles they didn't stray from. In other words, for cohort two, participants perceived, essentially throughout ILEAD U, that their role boundaries were somewhat fluid. A similar intimation of flexibility is evident in the second cohort's negative evaluation of the stringency of the team work schedule. Though the "median" cohort two participant tended to view team structure as not especially tight, those who perceived their team to be better structured in the spring of 2011 were also more likely to indicate a higher level of Web 2.0 confidence at the end of the program.

For cohort two, participants reported that their team became significantly clearer between the spring and the fall about the task completion schedule. This finding is consistent with several others discussed above showing that in most respects teams gained clarity about what they were doing with the passage of time. If ILEAD U had not been working well, there is good reason to assume that improvement to this degree would not have occurred. The final section of the table indicates that at each time point for cohort two, participants said that role clarity was important to them and only slightly less so for their teams.

VII. Participant Assessment of ILEAD U

During November of each cohort year, within a month after the conclusion of the program, participants were sent a survey that asked them to evaluate the experience. The survey covered what people got from ILEAD U, what they thought of their teams, their judgments of the value offered by the different sources of support and guidance that had been provided, and their sense of how supportive their employing library was of their involvement. Some of the questions were similar to ones asked in earlier surveys, while others introduced new topics more appropriate for consideration after it was all over.

Value of the Experience

As can be seen in Table 22, each cohort gave ILEAD U relatively high marks for the benefits they derived from the overall experience. Median scores for items in this category were identical between the two cohorts, with some interesting, although not dramatic exceptions.

Table 22: Value of the Experience (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 End	Cohort 1 End
ILEAD U has been one of the most enjoyable experiences of my career.	2.0	2.0
ILEAD U has been one of the most useful experiences of my career.	2.0	3.0
The most important benefit of my participation in ILEAD U is the increased ability I have to help my library adapt to technological change.	3.0	2.0
Compared to other learning experiences I have had, ILEAD U ranks among the best.	2.0	2.0
The most important benefit of my participation in ILEAD U are the relationships I've developed with other librarians on my team.	3.0	3.0
I LEAD U has been more challenging for me than I expected.	3.0	2.0
I did not get as much out of ILEAD U as I thought I would at the beginning.	6.0	5.5

Cohort two rated ILEAD U moderately better on the usefulness of the experience and tractability of the challenge the program represented. Cohort one was somewhat more likely to say that the most important benefit of the experience was increasing their ability to help their library adapt to technological change. What, if anything, might account for these differences?

In a factor analysis, this last item on adapting to change dropped out, but all of the other items in the above table loaded on a single factor representing the value of the experience. When this factor was tested in correlation and regression analyses, some possible explanations emerged for why cohort two

appeared to get a bit more from the experience than cohort one. *For both cohorts, the perceived contribution of the ILEAD U instructor corps to team performance was predictive of higher scores on the value of the overall experience.* But, then *for the second cohort, two other variables appeared to influence their ratings of the value of the experience as well: participants' sense of belonging or commitment to the team when measured in the spring of 2011 (.348 at the .05 level of significance) and support for their participation from the library where they worked (.356 at the .05 level).*

Recall that sense of belonging or commitment was not directly measured in cohort one. Time given to ILEAD U was measured, however, and the amount of time participants reported having given in the fall of 2010 was positively associated with the first cohort's assessments of the value of the experience (.396 at the .05 level of significance). The spring 2010 measure of time given for cohort one was not related to experience value, but it was not as precise as the fall measure. Possibly if it had been measured more precisely and objectively, it would have shown a significant relationship as well. On the other hand, cohort two's reports of time given, as already discussed, differed from those of cohort one. Time for cohort two started low and built up significantly. A deeper sense of early commitment to the team may have been a factor in this change, and could have later accounted, at least in part, for deriving somewhat more value from the experience.

As for employer support, while not strongly predictive of ratings of experience value for cohort two, it did not figure in at all in the analyses used to identify potential influences on cohort one's ratings, even though the cohorts' scores for employer support were similar. Employer support will be examined further below.

Lastly, judgments of the value of the ILEAD U experience did vary some across teams for cohort two but not for cohort one. The difference between the cohorts appeared to be a function mainly of more teams in cohort two giving the experience high marks. *The median experience value score for cohort two was 1.875 and for cohort one 2.375.*

Value of Team

A series of items in the end-of-program survey asked participants in both cohorts to say what they thought about their team. This called for a different set of judgments than the items used to measure the overall value of the ILEAD U experience. Each cohort's responses are provided in Table 23. It should be pointed out here that in factor analyses, most of the items in the table loaded onto a single team value factor for cohort two. For cohort one, a single factor was also produced, but with many fewer items and generally less coverage of the dimensions of team value the surveys sought to address.

Table 23: Value of Team (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 End	Cohort 1 End
This was one of the most effective teams on which I have ever served.	2.5	3.0
Our individual roles on the team were very clear.	3.0	3.0
Members of the team worked very hard to keep one another up to date.	2.0	2.0

Team did not maintain a high standard of work at all times.	6.0	6.0
It was easy to ask other members for help.	1.5	1.5
Team was united in trying to reach its goal.	2.0	2.0
Everyone on the team put in the same effort.	3.0	4.0
I liked working together with this team.	1.0	2.0
Team goals and priorities were clearly understood from early on.	2.0	3.0
Team followed a very structured work schedule.	5.0	3.5
Team did not give me enough opportunities to contribute.	6.0	6.0
I would have chosen a different team goal.	6.0	6.0

Teams were, in a way, the central element of ILEAD U. The table helps clarify how the teams were alike and different between the two cohorts. *In most respects, the two groups of participants gave the same or very similar ratings indicating a positive regard for the value of the teams*. But, there were three areas in which the cohorts diverged, in all cases indicating a moderately more positive assessment of team value for cohort two.

Cohort two was more likely to agree that team members made the same effort. Cohort one took a more neutral position on this measure. *Cohort two was more likely to perceive that team direction was clear early on.* This may make sense in light of evidence, reported earlier, that cohort two seemed to be better prepared at the start of the program and that cohort one, as the pioneers, had to devote more energy to figuring out what they were supposed to do. The largest discrepancy was the item measuring how structured the team work schedule was. As discussed previously, *the second cohort tended to perceive team structure as more fluid.* In other words, they may not have felt as much pressure as cohort one to generate value from the projects by the conclusion of the program. From the beginning of cohort two, State Library staff and instructors stressed with teams that the journey mattered more than the product at the end. This was not as clear at the outset for cohort one, and even though staff and instructors made an effort to clarify, the message may not have been fully absorbed, given the limited opportunities staff and instructors had to interact with teams.

Regression analysis showed that the team value factor for cohort two was affected by three other variables, all from early in the program. Team value scores were higher for participants who said in the baseline survey that the team had already selected a goal, who rated the importance of that goal in the spring survey as relatively higher, and who were giving more time to ILEAD U in the spring. Evidently, cohort two participants tended to make judgments about their teams early and these judgments persisted. For cohort one, its more narrowly defined team value factor was also predicted mainly by two early variables, although not the same ones as in cohort two. These two were measures derived from the spring 2010 interviews: how much teams were meeting face to face and confidence in the team having the skills to reach its goal. The emphasis in cohort two on getting prepared early, before the first in-person program, may have established in the minds of participants that achieving a clear and compelling direction was the main task of the team. Early preparation was not emphasized with cohort one, and in its place participants may have seen team value more in terms of relationships and wherewithal.

In both cohorts, team value perceptions differed among teams. In each cohort, five teams leaned toward higher value scores and three toward lower scores.

Psychological Safety

Psychological safety measures how free people feel in a group to express themselves and test out new ideas. Research has shown that it affects behavior in groups and organizations and can affect learning. Two items were included in the end-of-program survey to test for psychological safety. The median response to each of these items appears in Table 24.

Table 24: Psychological Safety (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 End	Cohort 1 End
I felt like other members of the team would judge me on the things that I said.	6.0	6.0
I felt like other members of the team would think more positively of me when I agreed with them.	5.0	5.0

Although the two cohorts showed the same relatively high levels of agreement about the presence of psychological safety on teams, it was a more relevant dimension of team functioning for cohort one than two. Analysis showed that psychological safety was a distinct factor in cohort one, but its structure did not hold up when analyzed for cohort two.

In cohort one, psychological safety appeared to be lower on teams in which participants perceived a higher level of early conflict over priorities. The frequency of use of electronic meetings early on was also adversely related to psychological safety at the end. All in all, psychological safety may have loomed slightly larger for cohort one because of the uncertainties entailed in being the first group to tryout ILEAD U. Put simply, teams were trying to build the bicycle while riding it, and that may have nudged up the anxiety level for some participants.

Assessment of Supports

In neither cohort were ILEAD U project teams left to their own devices. They were given access to several sources of support, including the in-person training programs provided by expert instructors, mentors who were available to provide guidance and help troubleshoot problems, UIS' COLRS which offered training in specific Web 2.0 technologies, and each team's own user or community representatives to serve as a sounding board. The end-of-the-program survey asked participants to rate each of these sources of support along various dimensions. The questions were the same for each cohort, except for one additional question added to the survey of cohort two based on what had learned from the evaluation of cohort one. Below, findings are presented and discussed separately for each support source.

Instructors

Instructors warrant first consideration because they were, by design, the educational linchpin of ILEAD U. All other activity was organized around or in relation to the in-person training programs. Table 25 compares the two cohorts' assessments of their respective instructor corps. These corps contained mostly the same set of instructors, but some instructors were added for the second cohort in order to address new training needs.

Table 25: Participants' Ratings of Instructors (Medians)

1 = Strongly Agree 7 = Strongly Disagree	Cohort 2 End	Cohort 1 End
Instructors as a group were outstanding	2.0	1.0
Some instructors were better than others	1.0	2.0
Quality of instruction could have been much better	5.0	5.0
Team could not have made as much progress without the things learned from instructors	1.0	1.0
Instructors' topics exactly what team needed	2.0	3.0
Instructors provided training well aligned with team goal	3.0	2.0
Overall Median Rating	2.0	2.0

Factor analysis indicated that the instructor rating scale actually appeared to measure two distinct dimensions. *The top three items captured judgments of the generic value of the instructors, and the bottom three their more specific value to the teams. In both cases and for both cohorts, evaluations were mostly positive. T*wo exceptions pertained to the value to team factor: cohort one gave a marginally less favorable assessment of instructors teaching what teams needed and cohort two gave a marginally less favorable assessment of instructors providing training aligned with the team goal. Since these are similar measures, they suggest that the one weakness in the ILEAD U training strategy may have been insufficient coordination or alignment between the aims and needs of team projects and instructors' decisions about what to teach.

Participants' ratings of instructors were the only measurement of a support source statistically related to an outcome area. For each cohort, better ratings on both instructor dimensions – general and specific – were positively associated with how participants judged the value of their ILEAD U experience.

COLRS

UIS' COLRS used its expertise in online learning to provide access to specialized Web 2.0 training that a team might need to advance its project. Assessments of COLRS' value appear in Table 26.

Table 26: Participants' Ratings of COLRS (Medians)

1 = Strongly Agree 7 = Strongly Disagree	Cohort 2 End	Cohort 1 End
COLRS not always available when needed	4.0	5.0
COLRS people really knew what they were talking about	4.0	2.5
Team took full advantage of COLRS' help	5.0	4.0
With COLRS' help, team could not have made as much progress as it did.	6.0	4.5
Presentations given by COLRS were useful to team	4.0	N/A
Overall Median Rating	4.0	4.5

With one exception, neither cohort gave COLRS a positive assessment. The exception was cohort one agreeing relatively strongly with the statement that COLRS people knew what they were talking about. Mostly, the ratings were neutral or close to neutral, although cohort two clearly disagreed that team progress depended on help from COLRS and cohort one indicated difficulty in accessing COLRS when needed. *Also, to the extent use of COLRS did not work out as well as might have been expected, the assessment shows that teams themselves may have been partly at fault.*

The combination of teams not taking advantage of COLRS' help and COLRS being perceived as not especially helpful indicate a potential flaw or weakness in the ILEAD U design. Open-ended comments from participants in both end-of-program surveys point to a lack of understanding of COLRS' relevance and difficulties in trying to figure out how to integrate what COLRS had to offer into what teams were trying to do. Ambiguity about just how COLRS should fit into the ILEAD U scheme surfaced early in cohort one and, evidently, was not sufficiently overcome by the conclusion of the second cohort.

Mentors

Mentors served as the backstop for teams. If a team had difficulty organizing, accessing information, determining how best to progress toward its project goal, its mentor was there to help. Mentors often listened in on team meetings and fielded calls from team members looking for assistance. Mentors in cohort one had said their role was not clear enough, and so, for cohort two, State Library staff made more of an effort to give the role definition and direction. Nevertheless, in both cohorts, each mentor had a good deal of latitude in how he or she constructed that role. Participants' assessment of mentors is shown in Table 27.

Table 27: Participants' Ratings of Mentors (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 End	Cohort 1 End
Our team could not have gotten as far as it did without the help of our mentor.	3.0	3.0

Our mentor was always available when needed.	2.0	1.5
The quality of advice from our mentor was uneven.	5.5	6.0
Our mentor always knew what to do when our team had problems.	2.5	2.0
Overall Median Rating	2.8	2.5

Participants' overall rating of the value of team mentors was comparable to their favorable evaluation of instructors. The scores were only slightly less positive. And there were no notable differences between cohorts. The one area where participants did not agree as strongly was the extent to which team progress depended on help from the mentor. Note that this was a pronounced weakness of COLR's involvement, especially with cohort two, but also the area in which instructors most excelled.

User Representatives

Just as in cohort one the mentor role surfaced as in need of clarification, the same thing happened with the role of team user reps. Steps were taken to try to give the user rep purpose and role more clarity, and as Table 28 indicates, these efforts appeared to have a modest pay off in cohort two.

Table 28: Participants' Ratings of User Reps (Medians)

1 = Strongly agree 7 = Strongly disagree	Cohort 2 End	Cohort 1 End
Our team's community representative/s were involved from the start.	3.0	3.0
We did not always make good use of our team's community representative/s.	4.0	2.0
Our community representative/s were the best possible people given our team's goal.	3.0	4.0
Our team's community representative/s got along very well with us.	2.0	3.0
Overall Median Rating	3.0	3.0

Overall, for each cohort, participants rated the involvement of user reps positively. Except for the first item in the table, assessments improved from cohort one to cohort two. *Improvement was strongest in making good use of community representatives, but there were also gains in selecting the right people as reps and getting along with them.* A session on user reps was included in the second in-person training program for cohort two and there were a number of sessions in that program as well as the first in-person program which fell under the heading of community engagement. While reported learning and use from these specific sessions were uncorrelated with ratings of user reps, cohort two participants' confidence in their abilities with community needs assessment, a variable measured in the follow-up

survey several months after the end of the program, was positively correlated with each user rep measure.

Web 2.0 Confidence

Web 2.0 confidence was measured in each end-of-program survey. As with the testing of confidence at the start of each cohort, participants were asked to rate their ability to teach others various Web 2.0 technologies and related content. For the end-of-program surveys, the technologies and related content were derived from what participants were actually exposed to during the first and second in-person programs, and because this differed some between cohorts, there were only some topics that occurred in common. Participants' self-ratings of their confidence are provided in Table 29.

Table 29: Final Confidence in Teaching Web 2.0 Technologies (median scores)

1 = Very Certain 7 = Not Certain at All	Participants Cohort 2	Participants Cohort 1
Video editing	3.0	2.0
Community needs assessment	3.5	3.0
Creating digital images	3.0	3.0
Copyright rules	3.0	
Team building	2.0	
Working with online conversations	2.0	
LAMP	7.0	6.0
eBooks	2.0	
Webinars	2.0	
Creating Android apps	5.5	
Creating iPad and iPhone apps	6.0	
Drupal	7.0	7.0
WordPress	3.0	3.0
Using Adobe Connect	2.0	2.0
Podcasting	4.0	
Screencasting	3.0	2.0
Using Facebook	1.0	
Using Twitter	1.0	
Overall Median	3.0	3.0

For the technologies taught to both cohorts, the scores are almost identical, and generally within the positive range on the "certainty" scale. Cohort two received notably more exposure to specific social media technologies (Facebook, Twitter), and, perhaps unsurprisingly, these earned the highest levels of confidence. On the other end, the more complex content management systems (LAMP, Drupal) drew the lowest levels of confidence. *Even though participants in both cohorts had opportunities for fairly in depth looks at LAMP and Drupal, it is not clear that the ILEAD U format, with variegated topics like a*

conference and sessions generally limited to two hours or less, provided the appropriate context for complex learning.

Web 2.0 confidence (overall median score across all topics) at the end of the program was an important outcome measure for ILEAD U. While it was not statistically feasible to compare confidence at the beginning and end because of the different measures used, analyses were performed to see what might have happened during ILEAD U to affect participants' sense of confidence as they exited the program. These analyses produced quite different results for the two cohorts, which could be a function of the fact that they experienced materially different programs or of the difficulties of getting valid and reliable results from data on small samples or a combination of the two.

As reported in the previous evaluation of cohort one, its participants' Web 2.0 confidence at the end was associated mostly with the strength of their orientation toward learning as measured in the baseline survey taken 10-11 months before. Other variables that had weaker associations with final confidence measured behavioral commitment: reports of time given to ILEAD U in both the spring and the fall and how much of a priority ILEAD U was for them in the spring. *In other words, team factors, at least those that were measured, seemed to play no or little role in cohort one participants' confidence in their abilities to apply what they had learned through ILEAD U.*

This was not true for cohort two. *In this case, three out of the four variables positively and significantly related to final confidence captured dimensions of the team experience: tightness of the team structure and certainty about team direction as measured in the spring of 2011, team ability as measured in the fall of 2011, and, interestingly, participants' average score for how much they said they had personally used content taught at the March 2011 in-person program.* Unlike cohort one, the baseline measure of cohort two participants' learning orientation was not correlated with their confidence at the end. The team variables paint a picture in which early efforts to get well organized and establish a clear and compelling direction may have put teams on the path toward developing the abilities they needed to make healthy progress in their projects. In turn, to be on such a team may have been confidence-boosting. Personal use of the March 2011 in-person training content was not correlated with any of these team variables, and may reflect the independent influence of, arguably, the best one of the in-person training programs across both cohorts.

Why did team experiences appear to affect Web 2.0 confidence levels in cohort two but not one. Only speculations are possible here, but one possibility may have something to do with early deficiencies in the execution of the program for cohort one. Cohort one teams mostly did not get organized until the first in-person program, and even then teams expressed uncertainties about what they were supposed to be doing and what they would be experiencing in ILEAD U. To the latter point, the first in-person program fell short as a training experience, with instructors generally doing an inadequate job to engage participants and to align training content with team needs. Since those needs were to some extent inchoate at that point because of teams' relative immaturity, instructors surely did not bear the full blame for failing to hit the mark. The problems with training were mostly overcome in the second in-person program. Although there is reason to think that teams had as well become clearer by then about what they should be doing, their development may never have reached the level of cohort two teams.

VIII. Post-Program Effects

The ultimate objective of ILEAD U was and is to help librarians help their libraries take better advantage of the opportunities afforded by Web 2.0. Participant self-ratings of their Web 2.0 confidence at the end of each cohort year was a proximal indicator of what had been learned, but it did not provide any insight into whether and, if so, how, that learning would be used. Moreover, use would depend not just on what participants had learned, but the opportunities they would have for application within their workplaces.

Surveys were conducted of each cohort to find out what participants had done with the knowledge and experiences they gained from ILEAD U. Cohort one was surveyed twice, once in May 2011, about six months after the last in-person program in October 2010, and again six months later, in November 2011. Doing two surveys over time would allow for detecting whether the impact became greater, lesser, or did not change. Because of time limits on the ILMS grant, cohort two was surveyed only once, in April-May 2012, again about six months after its last in-person program.

The questioning of participants about use of what they had learned varied depending on the technology. It seemed likely that some of the technologies and methods covered during ILEAD U might already be in widespread use, and in these cases, the questions focused more on how much ILEAD had changed that use. On the opposite end, there were other technologies – notably content management systems – that few, if any participants, may have used prior to ILEAD U. Here, the question was whether or not the technology had been taken up at all since the end of ILEAD U. In between, there were specific technologies that may or may not have been used before ILEAD U, but the use of which might have improved afterward. Questions were also asked about the impact of team projects and their continuation and the support for ILEAD U in participants' workplaces.

Note that because the technologies and methods for which training was provided only partly overlapped for the two cohorts, the questions in the follow-up surveys differed as well.

Changes in Use of More Common Technologies

Table 30 shows how participants who completed the follow-up surveys evaluated the impact of ILEAD U on their use of more common Web 2.0 technologies and methods. As just alluded to above, there was relatively little overlap between the cohorts in these content areas, because of the evolution of the curriculum.

Table 30: Change in Use of Common Technologies/Methods (Medians)

1= Strongly agree 7=Strongly disagree	Cohort 2 May 2012	Cohort 1 May 2011	Cohort 1 November 2011
You or your library have carried out a project that draws on lessons you learned from ILEAD U about:			
Community needs assessment	4.0		
Working with online conversations	4.0		

Team building	3.5		
Using social media differently	5.0	3.0	4.0
Project management		4.0	4.0
Project assessment/evaluation		5.0	5.0
Metadata		5.0	6.0
Relating differently to user community		3.0	3.0

The perceived effects of ILEAD U in all cases hovered around the middle of the strongly agree/strongly disagree scale for both cohorts and for cohort one at the two different time points measured. In other words, ILEAD U was reported to have moderate effects on subsequent use of these technologies and methods. The impact appeared to be stronger on methods that are more generic and not specific to Web 2.0 – team building and user community. In cohort one, for no technology or method in this "more common" group did survey responses indicate an improvement between May and November of 2011.

Further analyses were carried out to identify possible influences on how participants perceived the effect of ILEAD U on the application of these technologies and methods. While all of the technologies and methods were correlated with some variables, regressions indicated that the relationships were statistically strong and meaningful for only some of the technologies and methods. The analyses produced the following results:

- *Use of lessons from ILEAD U on team building in the second cohort was predicted: 1) positively by how much value participants attached to their teams in the survey completed just after the end of the program and 2) negatively by a factor, derived from data in the same survey, which reflected getting more personal value from ILEAD U than value for one's library.* Having a positive team experience may have led to more interest in ILEAD U's team building content. By contrast, coming from a difficult work environment may have led to perceiving this content as largely inapplicable.

- In both cohorts, doing social media differently because of ILEAD U was predicted by partly overlapping sets of variables. *For cohort one, the predictors were participants' ratings, in the survey after the end of the program, of how psychologically safe they had felt on their team and their judgment in the fall 2010 survey of their team's ability.* For cohort two participants, *perceptions of team ability in the fall 2011 survey was also a predictor for them, as was reported team use of content from the June 2011 in-person program*. The fact that team ability was strongly associated with ILEAD U's perceived effects on social media use may simply reflect the overall importance of social media as a substantive focus of ILEAD U, of which more able teams took better advantage. The other predictor for cohort two, team use of content from the June 2011 in-person program, is interesting, since, as reported previously, use levels of that content were low overall. It could be that teams which got more out of that content were pursuing projects with a strong social media orientation, which then spilled over on the participants once back on the job or in the continued post-ILEAD U implementation of their team project.

- *For cohort one, doing more with metadata based on lessons from ILEAD U was positively predicted by participants' baseline rating of their level of confidence in using social bookmarking and negatively by their end-of-program confidence in teaching ILEAD U's management topics*. Since

metadata is involved in social bookmarking, it makes sense that participants more skilled in social bookmarking might have derived more applicable value from ILEAD U's metadata content. The negative influence of confidence in the management topics suggests that metadata expertise may have been a marker for more technically oriented, less managerially oriented participants in cohort one.

For each of the "more common" technologies, participants who had any agreement with the statement in the survey (see Table 30) were asked either to list the ILEAD U lessons that had influenced them or describe how they were doing things differently in their library. Some respondents listed specific sessions, others did not or could not. Some described specific projects, others reported ILEAD U's influence as more general and ambiguous. Since these were narrative responses, an attempt has been made in Table 31 (next two pages) to categorize answers as either specific or general and to provide typical examples of each. There is reason to believe from research that more specific responses indicate either deeper learning and/or more opportunities to apply what was learned.

There are a few aspects of the table worth noting. One is the fairly low number of responses throughout, making it risky to draw confident generalizations about ILEAD U from these findings. Another is that, for the most part, participants gave more general than specific responses, suggesting that a good part of ILEAD U's impact, at least with respect to these technologies and methods, may have been more impressionistic and motivational than tangible development of skills. There were a few exceptions, however. For cohort two, more respondents reported specific, rather than general, effects on doing community needs assessment and working with online conversations. Cohort one at both points in time indicated more specific impact on use of social media, which was in sharp contrast to cohort two. The lack of specific effects here for cohort two may have been due to the greater specificity of its ILEAD U social media content, which focused on Facebook and Twitter and which some participants' libraries may not use or have access to.

Use of Content Management Systems

Some of the most difficult, and yet useful, training content in ILEAD U involved content management systems. Since these systems or programs provide the means of producing and structuring content for online environments, teaching participants about them was a central component of ILEAD U. In the two follow-up surveys of cohort one, participants were asked only to indicate if they had used a content management system since the end of ILEAD U, and if so, which one. In cohort two, this question was broken down into three of the content management systems for which both cohorts of participants received specific training.

Table 31: Examples of ILEAD U Impact on Use of "More Common" Technologies/Methods

		Cohort 2 May 2012		Cohort 1 May 2011		Cohort 1 November 2011	
		Specific	General	Specific	General	Specific	General
Community needs assessment	#	7	5				
	Example	The software that we learned about was used to create links on the webpage we created.	I can't list specific lessons but I definitely think about community needs when considering a project or policy changes.				
Online conversations	#	5	2				
	Example	Karen McBride's session on responding to negativity online	I use many of the things I learned in ILEAD U in online meetings since then.				
Team building	#	4	5				
	Example	I regularly use Doodle to schedule meetings.	I can't remember specific sessions but the whole experience of working as a team helped me.				
Using social media differently	#	3	13	7	7	6	2
	Example	We have made our Facebook page more engaging.	We are more open to assimilating social media tools.	Going to use short videos to each use of significant library features.	We plan to use social media to interact with our community.	We have added a blog through a local newspaper.	We have become more active and strategic in our use of social media.

Project management	#		4	9	0	8
	Example		Project management and Drupal sessions have been helpful in redesigning our website, building staff intranet, and building new digital media lab.	Have incorporated project management skills into virtually all facets of my job.		I have learned to manage all projects more efficiently.
Project assessment	#		4	5	1	4
	Example		I have written a survey to help decide what new online resources we might subscribe to.	Finding out what clientele want and responding to that need.	Survey session and phrasing questions to get useful information.	Learn how to set projects goals, evaluate results.
Metadata	#		2	7		
	Example		I teach digital photo editing and arching to patrons. I now explain importance of metadata and how to use it.	We will be able to more thoughtfully and effectively use metadata.		
Relating differently to user community	#		6	12	6	5
	Example		Have incorporated some new social networking communication techniques into our web presence.	I am more creative in dealing with our user community.	I am giving a presentation in December at lifelong academy of learning.	ILEAD U made me more aware of patrons' needs.

Table 32 shows how participants who completed the follow-up surveys answered the questions about use of content management systems.

Table 32: Use of Content Management Systems after ILEAD U

	Cohort 2 May 2012	Cohort 1 May 2011	Cohort 1 November 2011
Since ILEAD U, have you used or helped others to use a content management system? (percent yes)		39.3% (11 of 28)	42.9% (9 of 21)
If so, which one?		Drupal = 5 Wordpress = 7	Drupal = 1 Wordpress = 3 Google Sites = 1
Since ILEAD U, have you used or helped others to use Drupal? (percent yes)	6.7% (2 of 30)		
Since ILEAD U, have you used or helped others to use WordPress? (percent yes)	40% (12 of 30)		
Since ILEAD U, have you used or helped others to use LAMP? (percent yes)	0.0%		

The most widely used of the content management systems in both cohorts was WordPress. This is not surprising, since WordPress is easier to learn than the other two systems, Drupal and LAMP. *There was no reported take-up of LAMP*, most likely because it is more complex and difficult than the other systems, and, in consequence, may have required more time to learn than ILEAD U was able to provide.

Further analysis was done to determine whether there were variables that might have affected the post-ILEAD U use of content management systems. Results from the second follow-up survey of cohort one in November 2011 were excluded from the analysis due to too few respondents. For cohort two, analysis was restricted to reported use of WordPress, since it was the only system with substantial uptake.

In cohort one, all of the variables correlated with use of content management systems related directly or indirectly to the in-person training programs, and the relationships were all negative. Participants were more likely to report doing something new with a content management system after ILEAD U: 1) the less they said their project team had made use of the Drupal content form the June 2010 in-person program (-.513 at the .05 level of significance); and 2) the lower their rating of the specific value of the instructors to their team, as measured in the survey right after the conclusion of the cohort (-.603 at the .05 level of significance). It is difficult to know what to make of these findings. Possibly some participants on some teams thought some of the content management system training content was below their level, but that did not stop them from deriving something from ILEAD U that moved them to act subsequently.

In cohort two, potential effects on post-ILEAD U use of WordPress were also limited to in-person training related variables, specifically sessions from the June 2011 program. Participants were more likely to

report doing something new with WordPress after ILEAD U: 1) the more they said they learned from the sessions on Drupal (.784 at the .01 level of significance) and WordPress (.718 at the .05 level of significance); 2) the less they said they learned from the session on Tech Soup (.-912 at the .05 level of significance); and 3) the higher the reported team use of content from the session on using community reps (.759 at the .05 level of significance). The associations with Drupal and WordPress learning are what might be hypothesized. It is less clear what the connections with Tech Soup and community reps might mean, if anything.

Use of Other Specific Technologies

The more common technologies and methods described previously mostly represented broad categories of activity to which a variety of more specific technologies might apply. For example, working with online conversations could involve a content management system and metadata. ILEAD U also provided training in more narrowly defined technologies, in addition to content management systems. Here, the question was whether ILEAD U affected or appeared to affect the use of these technologies, and for what purposes or in what ways. Table 33 reports how respondents to the follow-up surveys answered questions about whether they were now using such technologies or using them differently.

Table 33: Use of Specific Technologies after ILEAD U (percent responding yes)

	Cohort 2 May 2012	Cohort 1 May 2011	Cohort 1 November 2011
Since ILEAD U, have you created or helped to create any new video for your library?	40% (12 of 30)	64.3% (18 of 28)	38.1% (8 of 21)
Since ILEAD U, have you created or helped to create new digital images for your library?	36.7% (11 of 30)		
Since ILEAD U, have you created or helped to create any Android, iPad, or iPhone apps for your library?	6.7% (2 of 30)		
Are you or your library scanning images differently because of ILEADU?	16.7% (5 of 30)	7.1% (2 of 28)	23.8 (5 of 21)%
Have you/your library's use of screencasting changed because of ILEAD U?[8]	30% (9 of 30)	28.6 % (8 of 28)	23.8% (5 of 21)

[8] In cohort one, the follow-up surveys first asked whether they were using screencasting and then if ILEAD U has changed that use. In cohort two, the questioning was modified to find out whether ILEAD U led them to either start using or change their use of screencasting. Thus, the figure in the table for cohort two reflects both change in use as well as initiation of use.

Have you/your library started using podcasting or changed your use of it because of ILEAD U?	3.3% (1 of 30)		
Have you/your library started using Adobe Connect or changed your use of it because of ILEAD U?[9]	16.7% (5 of 30)	32.1% (9 of 28)	28.6% (6 of 21)

The table shows a range of potential effects from ILEAD U. *Across both cohorts, significant percentages of respondents reported creating new videos after the program.* It is not obvious from answers to this yes/no question if lessons from ILEAD U had anything to do with the production of new videos. However, a follow-up question in the survey was designed to address this by asking participants to describe what purposes videos were serving. The assumption was that information in their answers would help to indicate whether ILEAD had been relevant, and this turned out to be the case. Respondents talked, for example, about using FLIP videos, doing virtual tours of their library, and creating video tutorials, all subjects that received specific attention during ILEAD U.

New use or change in use following ILEAD U was also relatively high for creating digital images, screencasting, and Adobe Connect (internet meeting systems). For these technologies, as well, respondents were given the opportunity to indicate for what purposes or in what ways a technology had been used since ILEAD U. Consistently, with limited exceptions, answers were specific rather than general. (To save space, the answers are not reported here but can be obtained from the evaluators.) Even if in these cases the actual impact of ILEAD U cannot be established, the fact that several participants reported concrete uses of the technologies, and often referred to some aspect of their ILEAD U experience, indicates that they had ready opportunities to apply what they learned through the program.

Apps and podcasting had low reported levels of uptake for cohort two. Most likely this had something to do with both the technical demands of these technologies (e.g., having to write the software for a phone app) and their higher level of novelty in the context of libraries.

Additional analyses were performed to identify variables that might have affected the reported use of the specific technologies in table 33. Several correlations were found, although only for some of the technologies:

- For cohort two, there were several variables bearing a significant relation with video production after ILEAD U (all at the .05 level of significance): end-of-program confidence in teaching iPad and iPhone apps (.526), the tightness of team structure in the Spring of 2011 (.469), end-of-program confidence in teaching Drupal (.409), end-of-program perception of team value (.402), and end-of-program confidence in teaching WordPress (.395). The meaning of these correlations is unclear.

- For cohort one, post ILEAD U use of internet-based meeting systems was correlated with: the measure of team conflict in the fall of 2010 (.664 at the .01 level), end-of-program rating of instructors (-.631 at the .01 level), and the value of the ILEAD U experience (-.513 at the .05 level).

[9] For cohort one, the question was not specific to Adobe Connect, but dealt with internet meeting systems in general.

In other words, participants who had perceived more conflict on their teams and got less value from the experience and instructors were more likely to report that ILEAD U had affected their library's use of internet-based meetings systems. Notably, team conflict in cohort one was also correlated positively with participants' reported usage of electronic meetings systems during ILEAD U. *Conceivably, internet-based meetings, in addition to their value in communicating across distances, may be resorted to as a way to mitigate the tensions that can arise in interpersonal relationships in groups.*

- For cohort two, two sets of variables appeared to affect the changed use of screencasting after ILEAD U, one having to do with the June 2011 in-person training program and the other baseline confidence in using particular technologies: average reported personal use of content from the June program (.623 at the .01 level), average reported team use of content from the June program (.559 at the .05 level), and baseline confidence in blogging (.619 at the .01 level), social bookmarking (.524 at the .05 level), and wikis (.501 at the .05 level). *The suggestion here is that participants who were more "into" Web 2.0 at the beginning and who got more out of the June in-person program that most gave low ratings to, were more likely to do something new or different with screencasting afterward.*

Team Project Impact and Continuation

Follow-up surveys asked both cohorts of participants to judge the impact of the team project on their library, whether the project continued after ILEAD U, and if it was still in operation at the time of the survey. Their responses appear in Table 34.

Table 34: Project Impact and Continuation

	Cohort 2 May 2012	Cohort 1 May 2011	Cohort 1 November 2011
How rate impact of team project? (median) (1= large impact 7= no impact)	3.0	4.0	4.0
Did project continue after ILEAD U? (percent yes)	70% (21 of 30)	64.3% (18 of 28)	47.6% (10 of 21)
Is project still in operation? (percent yes)	63.3% (19 of 30)	42.9% (12 of 28)	28.6% (6 of 21)

The results are consistent with the impression produced by the previous follow-up findings, namely, that cohort two benefited more than cohort one did from ILEAD U. Cohort two reported a positive impact from team projects, while cohort one expressed a more neutral position on impact. Project continuation rates were high in both cohorts right after ILEAD U, but they diverged when participants were asked at the time of the follow-up survey whether the project continued. For cohort two, there was very little fall off in continuation between immediately after ILEAD U and 5-6 months later. In contrast, for cohort one there was a drop of more than 20 percentage points in the equivalent time interval, and this fell further still when participants were surveyed another six months later.

Further analyses provided some additional evidence for what might be termed the effects of the "more felicitous" experience of the second cohort. *Regression analysis showed that the rating of project impact by cohort two was predicted by two variables measured in the baseline survey, one from the end-of-program survey, and one from the follow-up survey.*

One of the baseline predictors was how often a participant had communicated with his or her team members prior to the first in-person program. *The more frequent that early communication, the larger the perceived impact of the team project several months after the end of the cohort.* Interestingly, this early communication measured was strongly and positively related to the average length of time team members reported knowing one another before ILEAD U. In other words, greater familiarity was associated with more initial communication. Possibly, participants who were more familiar and communicated more developed a more favorable orientation toward their team and its work, which in turn led to perceiving more impact.

The other significant baseline variable appeared to have the opposite effect. *If a participant reported at baseline that his or her team had already met online (twice as many said they had than said they hadn't), this was associated with perceiving less impact from the team project after ILEAD U was over.* It could be, although there is no direct evidence of this in the data, that meeting online early, perhaps in the absence of face-to-face meetings, indicated less commitment to the team and/or ILEAD U, resulting then in a kind of self-fulfilling prophecy about the value that would ultimately come from team projects.

The relevant end-of-program survey variable was cohort two participants' rating of the value of their ILEAD U experience. The higher the rating, the larger the perceived impact of the team project a half a year after the program ended. It makes sense that participants who came away with a positive evaluation of the experience would see project impact as greater. The variable from the follow-up survey that was related to the measure of project impact from the same survey was participants' level of agreement about the effect of ILEAD U on using social media. *This may simply reflect the view that ILEAD's largest effects were on projects involving social media.*

Regression analysis either did not produce statistically trustworthy results or could not be used because of the small number of respondents to examine potential influences on project impact for cohort one or any of the project continuation measures for either cohort. In these cases, correlation analyses were performed, but they generally produced findings that were not especially meaningful, with two, related, interesting, and yet not easily explained, exceptions, both in connection with cohort two.

Initial project continuation immediately after ILEAD U was negatively associated with agreement, in the fall of 2011 when teams were close to the end, that the team had a clear leader. This seems to suggest that participants who perceived their team to not have a clear leader late in the program were more likely to report that the project did not stop when ILEAD U did. *Conversely, agreement with the statement about clear team leadership in the previous 2010 spring survey was positively related to whether the team project was still in operation at the time of the follow-up survey.* Conceivably, clear team leadership early (spring 2011) was enduring and helped to put projects on a more enduring, favorable trajectory. This is supported by a look at the raw data, which shows that 21 out of the 33 cohort two participants who answered the leadership question both times either expressed some level of agreement with the statement or reported an increase in agreement or lessening of disagreement over time. On the other hand, if leadership never emerged, teams may have run into difficulty completing their work, or if it did emerge late, it may have primarily served the purpose of enabling the team to get done in time for the last in-person program. To this point, higher scores on clear team

leadership late in the program were inversely related to participants' ratings of the value of their team in the end-of-program survey. Scores on team leadership early were positively correlated with team value.

Workplace Support

When employees of an organization go off to be trained and then come back with new knowledge and skill, whether that learning is retained and used will likely depend heavily on whether the organization's work environment is supportive. Because of resource limitations, it was not possible in the evaluation to look carefully at the supportiveness of the places where ILEAD U participants worked. However, through the participants themselves, a few questions could be asked that might provide some insight into the receptivity of these workplaces.

Table 35 shows how participants in each cohort responded to questions on the support of their library organization for application of what they learned through ILEAD U.

Table 35: Workplace Support for Use of ILEAD U Learning (medians)

How much do you agree or disagree with each of the following statements? 1= Strongly Agree 7=Strongly Disagree	Cohort 2 May 2012	Cohort 1 May 2011	Cohort 1 November 2011
When ILEAD U ended, I couldn't wait to get back to work and apply what I learned.	2.0	2.0	2.0
I haven't had time to try to use what I learned through ILEAD U.	3.0	3.5	4.0
The resources I need on the job to use what I learned through ILEAD U are available to me.	3.0	2.0	2.0
My colleagues at the place where I work appreciate my using what I learned through ILEAD U.	3.0	3.0	3.0
At work, my colleagues expect me to use what I learned through ILEAD U.	4.0	4.0	4.0
(if applicable) My supervisor has met with me to discuss ways to apply what I learned through ILEAD U.	5.0	5.0	3.0
At work, budget limitations have prevented me from using what I learned through ILEAD U.	5.0	4.0	4.0
I get feedback from people at work on how well I am applying what I learned through ILEAD U.	5.0	5.0	5.0

Responses were largely consistent across cohorts and between each point in time for cohort one, with one exception. Meeting with one's supervisor to discuss application of what was learned from ILEAD U improved significantly for the first cohort between May and November of 2011, with November marking a year since ILEAD U had ended. Note that participants also tended to agree, somewhat weakly, with the statement that they had not had time to apply their learning. Thus, it may be that delays in meeting with supervisors were at least partly driven by the press of other business. The danger here is that learning can erode rapidly if not applied.

The findings generally paint a picture of work environments that, while not as enthusiastic as the participants themselves, neither were they actively resistant. Resource and budget limitations did not appear to loom large. Colleagues showed some support. The consistently low score for feedback may reflect the nature of professional work more than a quality particular to ILEAD U participants' work environments.

It seemed unlikely that team functioning during ILEAD U would bear much on how participants perceived support from their workplaces once ILEAD U ended. But, there were other variables in the evaluation, and possibly even some more peripheral team-related variables, that could be used to try to gain some insight into why participants perceived their workplaces the way they did. To this end, regression and correlation analyses yielded the following results, which exclude the second follow-up survey of cohort one given the small number of respondents:

- *Cohort two participants' level of agreement with the survey statement on eagerness to apply what was learned through ILEAD U (first item in Table 35) appeared to be predicted by two variables: 1) weakly by participants' overall confidence in their Web 2.0 abilities at the end of the program, and 2) more strongly and negatively if their team had met online prior to the first in-person program.* The apparent influence of Web 2.0 abilities appeals to common sense. The role of early online meetings suggests that this variable may not just have been a marker of initial team functioning, but also may have captured something about participant's level of commitment to ILEAD U or challenges in their workplace making it difficult for them to free up the time to attend face-to-face meetings or fully engage in the program.

- Two measures of learning and use of in-person program content were associated with cohort two participants' level of agreement with the statement on not having had time to apply what they learned. *Participants' reported overall, average amount of learning from the first in-person program seemed to be a positive predictor of not having time back on the job to apply what they learned from ILEAD U.* It may be that there were participants who were individually motivated to get as much as they could out of that first, highly regarded in-person program, but were in jobs that would afford them limited opportunity for application. *The other measure seeming to predict not having time for application back on the job, although in this case inversely, was participants' reported overall, average team use of content from the second in-person program.* That is to say, the higher the reported level of team use of that content, the less likely were participants to say they had not had time to apply what they learned. This could mean that participants on teams which defied the trend of generally low ratings for use of second in-person program content were ones doing projects to which their home libraries were committed and that were expected to last beyond ILEAD U.

- *In cohort one, agreement with the statement on not having had time to apply ILEAD U lessons was positively predicted by participants' end-of-program confidence in their abilities with the easier Web 2.0 content and by having relatively few years of experience as a librarian.* With both variables,

however, the relationship to not having time was not particularly strong. Despite that, the relationships seem plausible. Confidence with easier Web 2.0 skills might have been indicative of either participants and/or workplaces not as fully engaged in or committed to the rapidly evolving world of Web 2.0. Less experienced librarians may either been in jobs that limited their opportunities for application or have lacked the power and insight necessary to create or find such opportunities.

- *Cohort one's scores on the statement about budget limitations correlated with two variables: 1) inversely with a factor derived from the end-of-program survey indicating participants success in having balanced ILEAD U with their job demands (-.522 at the .05 level), and 2) positively with participants reported overall, average team use of content from the second in-person program (.545 at the .05 level).* Success in balancing one's job and ILEAD U could have been partly attributed to a fairly healthy workplace environment without serious budget troubles. The relationship between having budget limitations and team use of second-in person training program content at first glance appears puzzling, since for cohort one, unlike for two, the second in-person program was regarded broadly by participants as the most valuable all the way around. But, perhaps precisely because the benefits of the second in-person were so broadly shared, those reporting more benefits were more likely to include participants from less supportive workplaces as well as those from more supportive ones.

IX. Conclusion and Recommendations

ILEAD U has been an effort led by the Illinois State Library, with funding from the federal Institute for Museum and Library Services, to enable libraries to become more creative and productive users of the opportunities provided by Web 2.0 to connect with citizens. Through trial and error, the effort has produced an interesting and viable model through which libraries can become more adept in their use of Web-based participatory technologies. Instructing librarians in key aspects of Web 2.0 and doing so through project-focused teams appears to be an efficient and effective way to make Web 2.0 real and relevant.

While the ILEAD U model is viable, findings from the evaluation of the program that have been reported here point to some ways in which it might be improved, and thus made more useful to other states that may wish to replicate it.

- *Focus initial training cohorts on librarians who already have some Web 2.0 knowledge and skill.* The program in Illinois was not particular about who participated. As a result, in its first cohort, there was quite a mix of librarians who had some proficiency in Web 2.0 and others who had little. This was less characteristic of the second cohort. Though the evidence is far from clear, there is an indication that the better results, overall, for the second cohort may have been partly due to its higher level of Web 2.0 proficiency. Librarians who come in with more Web 2.0 ability are more likely to learn more readily from the training that is offered, and then be in a position to more effectively apply that learning in their work. That application, in turn, may produce successes which increase believability about the value of formally preparing librarians for the "new world of communication" made possible by Web 2.0.

- *Have participating teams clearly define their projects in advance of the first training.* Teams in the second cohort benefited from the greater emphasis, compared to the first cohort, on getting their

projects defined early. As a result, they spent less time on the social task of organizing themselves once the program began and more time directly working on their projects. It may be productive to put even more emphasis on having projects well-specified in advance of training. If this were done a couple of months prior to the first training, it would provide valuable input to instructors in designing the curriculum for relevance to the projects that teams decide to pursue. Even in the second cohort, there was probably still too much training content that was extraneous – nice to have but not relevant to team tasks. One possibility for early project definition that should be considered is encouraging teams to develop projects that build on something already underway. This might increase the likelihood of projects that can lead to a sustainable product or service. Even though the purpose of ILEAD U is learning, continuing support for it may depend on generating durable, tangible value.

- *Create a strong expectation that teams should meet face-to-face at least once prior to the first training.* Evaluations findings suggest that cohort two teams which met face-to-face before the first in-person program functioned better than those that relied beforehand on electronically mediated meetings. Face-to-face exchanges provide more of the information that people need to reduce their uncertainty in new groups. With uncertainty lowered, group members are more able to concentrate on the work at hand and do not have to spend as much time as they might otherwise trying to "figure out" their colleagues.

- *Expect teams to select a member early who will be responsible for scheduling meetings, planning agendas, and facilitating communication.* In both cohorts, there were teams that begged the question of leadership. Some made a deliberate decision to avoid picking a person to lead the way. Others appeared to make the same choice by default. In cohort two, there was evidence that teams which were ambivalent about leadership created problems for themselves in getting work done. The selection of a team leader does not need to be fraught with questions about giving one member more status and authority than other members. The member who takes responsibility for the organizational work of the team can be regarded as just another necessary role in completing the team's project. Other members should have their own individual roles in which they provide the leadership appropriate to that role.

- *Consider a training curriculum that is narrower and deeper.* ILEAD U generally took a menu approach to its training curriculum. It offered participants a wide variety of topic choices to pick from, with, for the most part, relatively little in-depth engagement in any one topic. In this respect, ILEAD U training was designed more like a conference program than a training curriculum. While this has the benefit of letting participants decide what they want to learn, what they end up learning may not be deep enough to be as useful as the learning possible from a more coherent curriculum.

  The evaluation points to a couple of areas where improvements might be desirable and possible. One is in the teaching of content management systems. Both cohorts received fairly heavy exposure to LAMP, but those lessons did not take, most likely because LAMP is complex and requires more intensive training than ILEAD U had the time to provide. It might be wise to drop LAMP from the curriculum and do a more complete job of training librarians in the use of content management systems, such as WordPress and Drupal, that are easier to learn. Another area that may not need as much attention as it received in the two ILEAD cohorts are topics on team functioning. Most librarians have had plenty of experience being on teams or groups. About all they may need is some guidance, perhaps even before the first in-person training, on how to pursue their project as a team.

This might be done efficiently through a webinar or other electronic means, thereby allowing the in-person training programs to concentrate on content that is more specific to Web 2.0.

- *Provide instructors with guidance on the qualities of effective training.* ILEAD U learned quickly how instruction can go awry when instructors, while knowing their topic, are less attentive to how best to help others learn it. As the program spreads and continues to evolve, there would be a benefit to giving instructors or even potential instructors a set of formal guidelines on how to design instruction that works. A good starting point for such guidelines might be the criteria that evaluators used to observe and rate sessions in the in-person programs.

- *Design a new program component for reaching out to and developing support among the supervisors/superiors of those who participate in ILEAD U.* One of the most consistently significant threats to the effectiveness of training is the lack of workplace support for the application of what has been learned. Even though both ILEAD U cohorts returned to relatively supportive work environments, the extent to which participants reported applying what they had learned was not as high as it might have been. For example, many participants indicated a long delay before they met with their supervisor to discuss the use of their ILEAD U learning. Research shows that such delays can be associated with substantial learning loss. Consequently, it may be worthwhile to add a component or feature to ILEAD U that involves engaging with participants' supervisors or other superiors while the program is underway. A good time for this might be right after the first in-person program, when participants are first coming back to their library with new knowledge. A conference call or webinar could be convened to debrief supervisors/superiors on what happened in the first in-person program, what will happen in the next two in-person programs, and the hope that libraries will be able to readily use what participants are bringing back to them. This would also afford supervisors/superiors the opportunity to ask questions about what they can hope to get out of the ILEAD U experience for the libraries.