ITS Training and Documentation Needs Assessment Project Report

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1 Introduction

Ithaca College is a private, residential undergraduate college in the Carnegie category (comprehensive, masters one) with more than 100 degree programs. The campus community includes approximately 440 faculty members, 930 staff members, and 6,000 students. The Information Technology Services (ITS) division provides training and documentation services to faculty, staff, and students at Ithaca College to support their use of information technologies. To better understand the needs of those who use these services, ITS conducted a needs assessment study during the 2008-2009 academic year. This report details the methodologies used to complete the study, as well as the study findings.

2 Purpose

ITS provides a full complement of training and documentation services on two main platforms (Windows and Macintosh operating systems) to all faculty, staff, and students. A regular schedule of instructor-led training sessions and a collection of online documentation serve to provide users with instruction and guidance on supported application areas and environments. A wide array of software and systems are supported through these venues, such as: course management, network access, database design, electronic mail, calendar management, office productivity, and web design.

Traditionally, ITS training has been delivered in instructor-led, lockstep format with sessions that typically last no longer than one hour and with content that provides an overview or introduction for a particular topic, such as “Introduction to Oracle Calendar.” The needs assessment study provided an opportunity to ask the college’s faculty, staff, and students what new training topics should be offered, what they thought about the effectiveness of different training formats for learning (e.g., instructor-led, tutorials, webinars), what their thoughts were on various approaches to training content structure and design (e.g., task-oriented topics, hands-on exercises), and what the key elements of their most positive learning experiences had been.

ITS technical documentation has traditionally been delivered through the ITS web site as downloadable, printable PDF files. The needs assessment study has provided ITS with an opportunity to find out what additional documentation topics are needed, how easy or difficult it is for users to find documentation, and the main characteristics of the best documentation users have ever run across.

ITS incorporated questions designed to address these issues into the various data collection instruments used for the study. In addition to requesting feedback on the current delivery of training and documentation services, the study sought ideas and strategies for the future delivery of these services.
3 Study Design and Methods

The study employed three common techniques for gathering information and feedback from target populations: focus groups, interviews, and a survey. By employing three different techniques with the same target population, information gathered would be broad and deep as well as qualitative and quantitative.

3.1 Target Population

The first step in defining study participants was to find a sampling frame within which a representative population could be identified (statisticians refer to the target population being studied as the “sampling frame”). The target population for the needs assessment study was faculty, staff, and students at Ithaca College. Ithaca College has approximately 440 faculty members, 930 staff members, and 6,000 students.

Ithaca College is comprised of six schools: Business; Communications; Health Sciences and Human Performance; Humanities and Sciences; Interdisciplinary and International Studies; and Music. The administrative areas of the college are divided into five divisions: Academic Affairs; Finance and Administration; Institutional Advancement; Legal Affairs; and Student Affairs and Campus Life. Academic divisions by school served as the sampling frame for faculty and students, while administrative divisions across the college provided the sampling frame for staff members.

4 Focus Groups

4.1 Focus Group Methods

Focus groups were designed to provide faculty, staff, and students with forums through which they could provide feedback on training and documentation services by answering a standard series of questions as a group. Plans were established to meet with five key campus groups representing a cross-section of faculty, staff, and students. Focus group sizes ranged from relatively small (5) to somewhat large (35). The focus groups selected for this study were well-established, pre-existing groups with broad representation from across the college (e.g., Student Government Association).

The focus groups were conducted by small teams from the Information Technology Services division who had been trained in focus group techniques. Training on conducting focus groups was provided to the focus group team by the needs assessment project lead, and emphasized strategies for facilitating group discussions, such as making sure all topics are covered, reflecting back what was heard, requesting clarification as needed, and ensuring even participation. The focus group team was comprised of the needs assessment project lead (a full-time staff member) and ITS student employees working in the training and documentation area of the organization. Members of the focus group team took turns leading, presenting, and taking notes during focus group sessions.
Focus Group Questions

1. What are the most important computer applications for you to learn how to use and why?

2. What things help you learn how to use computer applications effectively?

3. What things prevent you from learning how to use computer applications effectively?

4. What factors affect how long it takes to learn how to use a computer application?

Figure 1: Sample Focus Group Questions

The data collection instrument (see Figure 1: Sample of Focus Group Questions) used in the focus group sessions was a set of 10 open-ended questions about software applications used, learning strategies, support tools, and negative/positive training and documentation service experiences. An additional eleventh question about instructional tools was used just for interviews with faculty, and a different eleventh question about classroom learning was used just for interviews with students. Please refer to Appendix C: Focus Group and Interview Questions for the full set of focus group questions used in this study.

4.2 Focus Group Data Collection

The team conducting the five focus group sessions used a Microsoft PowerPoint presentation to present each group with a standard set of questions. Members of the team were assigned to take notes, and a recording was made (with the permission of participants) of each focus group session. Using an open-ended question approach with a group presentation format produced a rich set of qualitative data. Focus group participants were assured that the results of responses to the focus group sessions would be reported only in aggregate.

4.3 Focus Group Data Analysis (Content Analysis)

Content analysis was used to evaluate the qualitative data collected through focus groups and interviews. Content analysis is a method for studying the content of communication, and is often used to analyze qualitative data, such as transcripts of what was said during an interview or focus group meeting. In general, content analysis provides a way to make qualitative data quantifiable.
Content analysis requires extracting meaningful categories and units of information to be coded from the transcripts of series of meetings or interviews, then analyzing the coded data. Once the data across several meetings or interviews is coded, trends begin to emerge.

For instance, if general statement is made in during one or more focus group sessions by several participants that task-specific documentation should be delivered, the statement might be coded as “task-specific.” As content analysis takes place, the frequency with which such a general statement was made would be counted across transcripts from all the focus group sessions. If the count proves to be high for this statement, then the data analysis would conclude that there was a strong desire in the target population for task-specific documentation.

4.4 **Focus Group Results**

The data gathered from the five focus groups in this study showed three basic trends for both training and documentation: content, delivery, and learning. According to focus group participants, training and documentation content should be developed with the following priorities in mind for content, delivery, and learning.

**Content**
- Change information is critical
- Information should have more depth
- More specific
- More task-oriented
- Basics needed, basics not needed
- Not too technical, vague, or long
- Step-by-step, not theory

**Delivery**
- Tailor information for newcomer groups
- “Just-in-time” information helpful
- New media formats
- Showcase what others have done
- Don’t know what you don’t know
Learning

- Hands-on practice essential for learning
- More expertise needed across the board
- “Show me how” demos helpful
- Multiple formats address different learning styles
- Need to know how to find information
- Need help imagining what to do with tools
- Producing something helps you learn

5 Interviews

5.1 Interview Methods

One-on-one interviews were conducted with faculty, staff, and students representatives from across the college by member of the interviewer team, which was comprised of full-time user support professionals in the Information Technology Services division.

In preparation, members of the interviewer team were provided with training on interview techniques, which included a summary of recommended question formats and strategies (e.g., open-ended, parallel, probing, etc.), along with explanations and examples of the kinds of questions to avoid (e.g., loaded, leading). In addition, interviewers were coached in active listening skills, such as mirroring, eye contact, paraphrasing, and summarizing. The goal was to provide interviewers with the tools they needed to conduct objective, effective, and productive interviews.

The data collection instrument (see Figure 2: Sample of Interview Questions) used for on-on-one interviews was a set of 10 open-ended questions about software applications used, learning strategies, support tools, and negative/positive training and documentation service experiences. An additional eleventh question about instructional tools was used just for interviews with faculty, and a different eleventh question about classroom learning was used just for interviews with students. Plans were established to interview five representatives from each of the target populations (faculty, staff, and students) within the sampling frame. Representatives were chosen randomly.
**Interview Questions**

1. If you could have any kind of support tools for learning and using computer applications, what would you ask for?

2. Think about the worst computer training you ever had. What made it the worst?

3. Think about the best computer training you ever had. What made it the best?

Figure 2: Sample Interview Questions

An additional set of instruments was created to organize and analyze data gathered from the interviews in preparation for content analysis.

## 5.2 Interview Data Collection

For one-on-one interviews, a standard set of questions was used by a member of the interviewer team. In addition to taking notes during the interview, the interviewer recorded the interview (with permission of the interviewee). Recordings were reviewed and transcribed for further analysis by a small team of student employees who were provided with a template and set of instructions for the transcription process.

The open-ended question format allowed each interviewee to provide qualitative data from an individual user perspective. Interview participants were assured that the results of responses to the interviews would be reported only in aggregate. Please refer to Appendix C: Focus Group and Interview Questions for the full set of interview questions used in this study.

## 5.3 Interview Data Analysis (Content Analysis)

Content analysis was used to evaluate the qualitative data collected through focus groups and interviews. Content analysis is a method for studying the content of communication, and is often used to analyze qualitative data, such as transcripts of what was said during an interview or focus group meeting. In general, content analysis provides a way to make qualitative data quantifiable.

Content analysis requires extracting meaningful categories and units of information to be coded from the transcripts of series of meetings or interviews, then analyzing the coded data. Once the data across several meetings or interviews is coded, trends begin to emerge.
For instance, if general statement is made in several interviews that training should be offered in the evening, the statement might be coded as “evening training desired.” As content analysis takes place, the frequency with which such a general statement was made would be counted across all the transcripts being analyzed. If the count proves to be high for this statement, then the data analysis would conclude that there was a strong desire in the target population for evening training to be offered.

5.4  Interview Data Results

The following section shows interview data results for each segment of the target population for the study. Trends across groups are highlighted in yellow.

1. What are the most important computer applications for you to learn how to use and why?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Mail</td>
<td>Electronic Mail</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>Excel</td>
<td>Excel</td>
<td>Final Cut Pro</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>Word</td>
<td>Photoshop</td>
</tr>
</tbody>
</table>

2. What things help you learn how to use computer applications effectively? Where do you look for and/or expect to find help?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>training</td>
<td>training</td>
<td>training/tutorials</td>
</tr>
<tr>
<td>cheat sheets</td>
<td>documentation</td>
<td>documentation</td>
</tr>
<tr>
<td>teach myself by using</td>
<td>ask a consultant</td>
<td>ask another person</td>
</tr>
</tbody>
</table>

3. What things prevent you from learning how to use computer applications effectively?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>no time</td>
<td>no time</td>
<td>no motivation</td>
</tr>
<tr>
<td>bad documentation</td>
<td>bad documentation</td>
<td>no support</td>
</tr>
<tr>
<td>don’t know how to learn more</td>
<td>applications not intuitive</td>
<td>group project - another person knew the tool</td>
</tr>
</tbody>
</table>
4. What *factors* affect *how long* it takes to learn how to use a computer application?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>time for practice</td>
<td>motivation to learn</td>
<td>learning style</td>
</tr>
<tr>
<td><strong>intuitiveness of application</strong></td>
<td><strong>intuitiveness of application</strong></td>
<td><strong>intuitiveness of application</strong></td>
</tr>
<tr>
<td>availability of support</td>
<td>availability of documentation</td>
<td>quality of support</td>
</tr>
</tbody>
</table>

5. If you could have any kind of support tools for learning and using computer applications, what would you ask for?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>one-on-one consulting help</td>
<td>help desk</td>
<td>consulting available in my dorm room or online (via IM)</td>
</tr>
<tr>
<td>interactive tutorials</td>
<td>instructor-led training</td>
<td>instructor-led training</td>
</tr>
<tr>
<td>reviews of new applications and features</td>
<td>online help</td>
<td>support applications for my major</td>
</tr>
</tbody>
</table>

6. Think about the worst computer training you ever had. What made it the worst?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>no hands-on practice</td>
<td>wrong content</td>
<td>wrong content</td>
</tr>
<tr>
<td>wrong pace</td>
<td>wrong pace</td>
<td>no learning measures</td>
</tr>
<tr>
<td>participants with different levels of expertise</td>
<td>application hard to use</td>
<td>instructor not knowledgeable</td>
</tr>
</tbody>
</table>

7. Think about the best computer training you ever had. What made it the best?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>cover basics, then open for special questions</td>
<td>hearing experiences of others with tool</td>
<td>skills stay after training</td>
</tr>
<tr>
<td>includes hands-on practice</td>
<td>ITS training</td>
<td>instructor knowledgeable</td>
</tr>
<tr>
<td>step-by-step instruction</td>
<td>seeing new features</td>
<td>good training guide</td>
</tr>
</tbody>
</table>

8. Think about the worst computer documentation -- paper or online -- you ever used. What made it the worst?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>online help systems not helpful</td>
<td>too complex</td>
<td>too complex</td>
</tr>
<tr>
<td>not enough information</td>
<td>too much information</td>
<td>too much jargon</td>
</tr>
<tr>
<td>basic concepts not explained</td>
<td>bad keyword use</td>
<td>too much text (prefer graphics and diagrams)</td>
</tr>
</tbody>
</table>
9. Think about the best computer documentation -- paper or online -- you ever used. What made it the best?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear instructions</td>
<td>step-by-step format</td>
<td>step-by-step format</td>
</tr>
<tr>
<td>helpful graphics and screenshots</td>
<td>ITS Quick Guides</td>
<td>plain, clear writing</td>
</tr>
<tr>
<td>good layout</td>
<td>well-written, good explanations</td>
<td>troubleshooting information included</td>
</tr>
</tbody>
</table>

10. What questions about training and/or documentation did we not cover that we should have, and what would the answers to those questions be?

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>standardize and document smart classrooms</td>
<td>basic computer skills training needed</td>
<td>training should be promoted more widely</td>
</tr>
<tr>
<td>user groups and forums on popular applications</td>
<td>need more training on specific topics</td>
<td>training should cover what students need for their majors</td>
</tr>
<tr>
<td>require computer literacy for students</td>
<td>need more information on training offered</td>
<td>training should be longer for better learning</td>
</tr>
</tbody>
</table>

11. As an instructor, what computer support tools help you most?

<table>
<thead>
<tr>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>manuals are better than online help</td>
</tr>
<tr>
<td>instructor-led training</td>
</tr>
<tr>
<td>Blackboard</td>
</tr>
</tbody>
</table>

12. As a student, what computer support tools help you most?

<table>
<thead>
<tr>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet, manuals, online help</td>
</tr>
<tr>
<td>professor’s knowledge of application</td>
</tr>
<tr>
<td>Blackboard</td>
</tr>
</tbody>
</table>
6 Survey

6.1 Survey Methods

The survey was designed and delivered using the online survey design tool, Survey Gizmo. The survey included 22 questions on current and future training and documentation support and service topics and formats. The questions on the survey (see Figure 3: Sample of Survey Questions) were designed to gather feedback on the effectiveness of different training formats for learning, documentation usability, priorities for training and documentation topics, and preferred formats for the delivery of training and documentation content. A variety of question types were employed, such as multiple choice, scaled, yes/no, matrix, and open-ended.

The survey also included questions about preferred computing platform, level of computer expertise, and communication channels (e.g. Intercom).

Survey Questions

1. How effective are each of the following activities for helping you learn how to use computer applications? (Please rate each activity. Rating scale: very effective, moderately effective, somewhat effective, not at all effective, don’t know.)

   - attending instructor-led training in a computer lab
   - completing hands-on exercises as part of training in a computer lab
   - using online training tutorials with video showing step-by-step procedures (optionally with audio)
   - following instructions in computing documentation
   - participating in instructor-led training webinars using my computer and a telephone
   - referring to built-in online help systems

Figure 3: Sample Survey Question (matrix)
The survey population was a random, representative sample of faculty and students from college academic divisions, and a random, representative sample of staff from college administrative divisions. The survey was distributed to half of the members of each of these three populations, specifically to 286 faculty members, 423 staff members, and 2,798 students.

6.2 Survey Data Collection

The survey was designed and delivered using an online tool for survey creation and publication. Surveys were sent by electronic mail to a representative sample of faculty, staff, and students from across the college. The survey was made available to the sample populations for two weeks, and two follow-up e-mail reminders were distributed within that two-week period to those who had not yet completed the survey.

6.3 Survey Data Analysis

The three target populations for this study (faculty, staff, and students) were divided into three survey response groups to collect the data. The survey tool, Survey Gizmo, provided functionality for exporting reports to each of the survey questions broken down by group. Further analysis on data collected was completed with Microsoft Excel.
6.4 **Survey Data Results**

6.4.1 **Survey Response Rate by Status**

The overall response rate for all populations for the survey was 20%. Participation by status was 41% of faculty, 44% of staff, and 14% of students (see Figure 4: Survey Response by Population). The survey results provided a comprehensive set of quantitative data on training and documentation services, as well as additional qualitative data through some open-ended questions.

6.4.2 **General Questions - Faculty, Staff, & Student Data Results Combined**

The first set of questions focused on general issues such as computing platform, level of computing expertise, and preferred learning formats.
Windows was the most common platform used by survey respondents (61%), Macintosh was the second most common platform (36%), and the remaining 3% of respondents answered that they used another platform, such as Unix (see Figure 5: Computing Platform Used).
Figure 6: Level of Expertise with Computing Applications (faculty, staff, student results combined)

About two-thirds of the survey respondents identified themselves as having an intermediate level of computer expertise with computing applications (61%), and most of the remaining third identified themselves as “advanced” users (36%). The remaining 3% identified themselves as beginners.
Figure 7: Learning Effectiveness for Different Activities (faculty, staff, student results combined)
6.4.3 Communication Questions - Faculty, Staff, & Student Data Results Combined

The second set of questions focused on communication channels used to deliver training and documentation services.

Figure 8: Web Site Usage
Figure 9: Training Attendance
Figure 10: Staying Informed of Training
Figure 11: Quick Guide Usage

Figure 12: Best Time of Day for Training
6.4.4 Faculty - Responses to Training Questions

Figure 13: Top 5 Training Topics for Faculty
Figure 14: Top 5 Documentation Topics for Faculty

6.4.5 Faculty - Responses to Documentation Questions
6.4.6 Staff Responses to Training Questions

Figure 15: Top 5 Training Topics for Staff
6.4.7 Staff Responses to Documentation Questions

Figure 16: Top 5 Documentation Topics for Staff
6.4.8 Student Responses to Training Questions

Figure 17: Top 5 Training Topics for Students
6.4.9 Student Responses to Documentation Questions

![Bar Chart: Top 5 Documentation Topics for Students](image)

Figure 18: Top 5 Documentation Topics for Students
7 Conclusion

The most significant challenge in undertaking a project of this scope is the amount of time and effort it requires. Management and team support are critical to the success of such an endeavor, as well as the participation of interviewers, coders, and transcribers, all of whom will need training to ensure consistency in the techniques used to gather, record, and analyze data.

Although a valuable tool for organizing and quantifying data, content analysis in particular is both labor-intensive and time-consuming. Another challenge that was encountered, which may have been unique to this campus, was in gathering data from the student population. Although they were the largest of the three populations studied in this project, students were the most difficult to reach, schedule, and interview one-on-one. In addition, their response rate for the survey was significantly lower than that of the faculty and staff groups (14% compared with 41% and 44%, respectively).

One of the strategies that effectively streamlined this particular project’s progress was using focus groups with pre-defined membership, meeting times, and meeting locations. This provided a significant time savings because the focus group sessions could be incorporated into the regular meeting plans, obviating the usual tasks of communicating with participants and making arrangements for meeting locations.

8 Recommendations

Overall, the combination of focus group (qualitative), interview (qualitative), and survey (quantitative) techniques for gathering information has provided a rich set of data from which to gain insights into the training and documentation needs of the campus community, from which the college is reaping many benefits.

Most prominent of these benefits has been the opportunity the needs assessment project has provided for truly user-driven improvements in the delivery of training and documentation services to faculty, staff, and students at Ithaca College. Another benefit that is perhaps more subtle, but no less significant, has been the chance it has given many full-time and student employees in the Information Technology Services division to directly hear, acknowledge, understand, and respond to what the community it serves needs and wishes for when it comes to training and documentation services.
9 Acknowledgements

Thanks to faculty, staff, and students at Ithaca College who participated in the Training and Documentation Needs Assessment Study. Special thanks to all the Ithaca College professionals who collaborated on this project: Beth Rugg, Mike Taves, Marilyn Dispensa, Mark Hine, Lisa Efing, Karen Sunderland, Adam Lee, Kathy Barbieri, Brian Kaiser, Rachel Pancoe, Ryanne Miller, and Alyssa Chamberlain from Information Technology Services. And thanks to Martha Gray and Claire Borsch from Institutional Research.

10 References

