How to Conduct a Needs Assessment Study on Training and Documentation

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ABSTRACT
This paper will offer a summary of the tools and techniques that were used for a Training and Documentation Needs Assessment Study recently completed by the Information Technology Services (ITS) division at Ithaca College, located in Ithaca, New York. The structure, design, and tools of this study provide a model for user support professionals and others within information technology service organizations at higher education institutions to adopt to carry out a needs assessment study with users on their own campuses.

Ithaca College provides centralized user support services, such as training and documentation, through ITS. The goal of the ITS Training and Documentation Needs Assessment Study was to obtain feedback from faculty, staff, and students on current training and documentation services delivered by ITS (Information Technology Services), as well as to gather ideas for adding to, modifying, and improving these services in the future. Three standard communications research tools were employed to complete this study: focus groups, interviews, and a survey. Results from these data collection instruments were analyzed into a report on responses across and within the three target populations (faculty, staff, and students). Moreover, these results were synthesized into a set of recommendations, which are being used to shape the delivery of training and documentation services to the campus community.

Categories and Subject Descriptors
H.5.2 [Information Interfaces and Presentation]: User Interfaces – training, help, documentation
H.5.3 [Information Interfaces and Presentation]: Group and Organization Interfaces – evaluation/methodology

H.3.5 [Information Storage and Retrieval]: On-line Information Services – web-based services
K.6.1 [Management of Computing and Information Systems]: Project and People Management – training, strategic information systems planning
K.3.2 [Computers and Education]: Computer and Information Science Education – information systems education

General Terms

Keywords

1. INTRODUCTION
Ithaca College is a private, residential undergraduate college in the Carnegie category (comprehensive, masters one) with more than 100 degree programs, 440 faculty, 927 staff, 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 paper details the methodologies used in this study to provide a set of guidelines for others who may wish to conduct similar studies at their own institutions.

2. PURPOSE
ITS provides a full complement of training and documentation services on two main platforms (Windows and Macintosh OS) 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 users 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

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 both broad and deep.

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 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

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.

The data collection instrument (see Figure 1: Sample of Focus Group Questions) used in the focus group sessions was a set of 14 open-ended questions about software applications used, learning strategies, support tools, and negative/positive training and documentation service experiences.

| 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 of Focus Group Questions

5. INTERVIEWS

One-on-one interviews were conducted by another team in the Information Technology Services division.

In preparation, interviewers 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 11 open-ended questions about software applications used, learning strategies, support tools, and negative/positive training and documentation service experiences. 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.

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 of Interview Questions

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

6. 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.

7. SURVEY

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.

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 of 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.

8. 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.

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.

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. The overall response rate for all populations for the survey was 20%. Participation by population was 41% of faculty, 44% of staff, and 14% of students. The survey tool provided a comprehensive set of quantitative data on training and documentation services, as well as additional qualitative data through some open-ended questions. Survey participants were assured that the results of responses to the survey would be reported only in aggregate.

9. CONCLUSION
The most significant challenge in undertaking a project of this scope is the amount of time and effort it requires, as well as the number of resources needed. 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.

Overall, the combination of focus group (qualitative), interview (qualitative), and survey (quantitative) techniques for gathering information has provided a rich set of data on 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, perhaps more subtle, but no less significant, benefit 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.

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11. REFERENCES