

# Many Paths To Learning Software

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*Formal, instructor-led training is not the only way to learn.*

*Here are some other approaches to help diverse users master new software.*

**O**RGANIZATIONS SPEND billions of dollars on software training, including materials, classroom time, and time employees spend reading manuals and experimenting with software. Though learning also occurs outside of the classroom, especially between co-workers, many organizations think instructor-led training is the only way to teach employees how to use new software. In fact, there are other useful and inexpensive approaches.

A study at the University of Georgia examined different ways people learn software, based on their learning styles and preferences, type of work, and experience. The findings can help companies create learning support systems for diverse software users.

## **Inexpensive, readily available**

Participants were drawn randomly from a large database of licensed software users. They received a letter in-

roducing the study and took part in structured, 15-minute telephone interviews in which they described the way they learn how to use new software.

Participants were asked to rank 30 activities associated with learning

software, including attending courses, referring to the manual, and using trial-and-error. They rated each activity on a scale of 1 (least useful) to 5 (most useful). The overall response rate was 89 percent. (See Table 1 for a list of the activities in order of respondents' preference.)

Respondents rated experimenting with the software as the single most useful learning activity. Yet, some network administrators don't let people access new software until they've attended formal training. That may minimize the support staff's workload, but it overlooks an effective learning approach.

Another highly rated activity was searching through a software program's menus and reading the screen prompts. Because that approach is available to almost all users, support staff should promote it. For example, telephone support staff can ask users to review onscreen messages while they work through a problem. The support

### **PARTICIPANT PROFILE**

Average age: 42

Gender: 69% male  
31% female

Average education: 2 years of college

Average experience:  
▶ 11.5 years of computer experience  
▶ 11.8 different applications

Type of work:  
▶ 14% clerical workers  
▶ 48% knowledge workers  
▶ 34% managers

person can say, "Choose 'format make it fit expert' from the menu bar. Now, tell me what the message on your screen says." But in the study, many respondents said that support staff solved

problems without explaining how.

An instructor can also encourage participants to read screen messages and menus. For example, suppose trainees ask, "Can the program con-

vert lower-case letters to mixed-cased letters?" The instructor can say, "Yes. Choose 'edit convert case' from the menu bar." To encourage participants further to use the menus, the instructor can say, "Let's search through the menu bar and see if we can locate a feature like that."

Another inexpensive, readily available learning resource is co-workers. It's usually efficient for an inexperienced user to ask a knowledgeable one for help. In some organizations, a lead user from the administrative staff is assigned to each software package, and employees are encouraged to ask the designated lead for help before calling the help desk.

In one company in the study, the professional development department uses an "art gallery" to encourage co-workers to share their learning by posting samples from various software packages near the training room. One caption says, "Created with PowerPoint by importing scanned images of beverage cans and using those images as replacement symbols for charting. The scanned images are available from Jane Doe, ext. 999." The caption also tells who can answer questions about PowerPoint.

The study shows that the least useful learning activities include watching videos, attending user support groups, and referring to training manuals. Yet, many organizations still evaluate prospective suppliers by reviewing their training manuals.

Videos consistently ranked low on the study for usefulness for learning software. Despite that, companies with geographically dispersed employees tend to rely on videos as a primary

**TABLE 1: PREFERRED LEARNING ACTIVITIES**

Learning Activity	Rank	Average Score 1 = low 5 = high
Experimenting with the software (for example, trial-and-error)	1	4.37
Relying on consistent features in the software	2	4.23
Asking co-workers for help	3	3.95
Searching menus	4	3.94
Reading prompts and messages	5	3.90
Thinking about how similar programs work	6	3.87
Asking an instructor a follow-up question	7	3.87
Working one-on-one with a consultant	8	3.83
Referring to the manual	9	3.79
Asking a friend for help	10	3.79
Thinking about how the software worked in an earlier version	11	3.77
Calling supplier support	12	3.72
Reading a third-party book	13	
Using the online help feature	14	3.60
Remembering how someone used the software to accomplish a task	15	3.57
Reading magazines about the software	16	3.47
Looking at online examples and sample files before using the software	17	3.43
Following online tutorials	18	3.40
Attending university courses	19	3.29
Thinking about how dissimilar programs work	20	3.26
Visualizing how someone used the software step-by-step to accomplish a task	21	3.21
Calling the in-house help desk	22	3.18
Attending formal training	23	3.17
Using reference cards and keyboard templates	24	3.15
Taking computer-based training produced by an outside party	25	3.14
Accessing bulletin board services	26	3.12
Attending user support groups	27	3.10
Referring to training materials from class	28	3.06
Watching videotaped lectures or demonstrations	29	2.63
Attending professional trade meetings not in the computer industry	30	2.52

training tool. Training courses also ranked low, 23 out of 30. One reason may be that training is usually evaluated at the end of a class, before participants have tested their new skills. The most common complaint respondents

made about courses was that they already knew the material and resented spending hours in training.

### An important question

Respondents' different opinions about

which activities were useful led to an important question: Do some types of users find some learning activities more useful than others? To answer that question, the study classified participants by experience, work type, and learner type.

**Experience.** The study classified participants according to experience, determined by the number of software packages they had used and what types, including wordprocessing, database, graphics, and spreadsheets. Users equal to or below the group median were classified as "less experienced"; those above the median were classified as "more experienced." Table 2 presents the preferred learning activities of more experienced and less-experienced users.

More-experienced users said that they were often asked for help, but rarely received help from more knowledgeable users. Less-experienced users found it more useful to ask instructors follow-up questions. The study indicates that experienced users often draw from prior experience using similar software, and they refer to the manual. Respondents commented that it wasn't particularly helpful to keep just one copy at a LAN administrator's desk or in a learning center.

**Work type.** When participants were classified according to work type, the ranking of useful learning activities changed. For the purpose of the study, knowledge workers were defined as staff-level professionals (scientists, analysts, writers, and accountants) who were not clerical workers or managers.

Clerical workers rated one-on-one interaction

**TABLE 2: PREFERENCES BASED ON SOFTWARE EXPERIENCE**

Overall		Learning Activity	Less Experienced n = 141		More Experienced n = 122	
Rank	Score		Rank	Score	Rank	Score
1	4.37	Experimenting with the software (for example, trial-and-error)	1	4.29	1	4.47
2	4.23	Relying on consistent features in the software	2	4.19	2	4.28
3	3.95	Asking co-workers for help	3	4.17	7	3.75
4	3.94	Searching menus	8	3.9	4	3.99
5	3.9	Reading prompts and messages	7	3.9	5	3.89
6	3.87	Thinking about how similar programs work	12	3.69	3	4.06
7	3.87	Asking an instructor a follow-up question	4	4.09	11	3.65
8	3.83	Working one-on-one with a consultant	5	4.00	12	3.64
9	3.79	Referring to the manual	11	3.71	6	3.88
10	3.79	Asking a friend for help	6	3.93	13	3.62

**TABLE 3: PREFERENCES BASED ON WORK TYPE**

Overall		Learning Activity	Clerical Workers n = 36		Knowledge Workers and Managers n = 217	
Rank	Score		Rank	Score	Rank	Score
1	4.37	Experimenting with the software (for example, trial-and-error)	1	4.44	1	4.34
2	4.23	Relying on consistent features in the software	6	4.03	2	4.26
3	3.95	Asking co-workers for help	8	4.00	3	3.94
4	3.94	Searching menus	9	3.97	4	3.93
5	3.9	Reading prompts and messages	7	4.03	6	3.87
6	3.87	Thinking about how similar programs work	15	3.64	5	3.90
7	3.87	Asking an instructor a follow-up question	2	4.17	8	3.79
8	3.83	Working one-on-one with a consultant	3	4.17	10	3.76
9	3.79	Referring to the manual	16	3.61	9	3.79
10	3.79	Asking a friend for help	5	4.09	11	3.73

**TABLE 4: PREFERENCES BASED ON LEARNER TYPE**

Overall		Learning Activity	Dependent Learners n = 49		Self-Directed Learners n = 185	
Rank	Score		Rank	Score	Rank	Score
1	4.37	Experimenting with the software (for example, trial-and-error)	9	3.80	1	4.53
2	4.23	Relying on consistent features in the software	3	4.15	2	4.21
3	3.95	Asking co-workers for help	4	4.11	5	3.89
4	3.94	Searching menus	14	3.63	3	4.03
5	3.90	Reading prompts and messages	5	4.02	6	3.85
6	3.87	Thinking about how similar programs work	15	3.61	4	3.99
7	3.87	Asking an instructor a follow-up question	2	4.32	9	3.77
8	3.83	Working one-on-one with a consultant	1	4.40	13	3.61
9	3.79	Referring to the manual	13	3.67	7	3.85
10	3.79	Asking a friend for help	8	3.80	10	3.75

with instructors and consultants more useful than did knowledge workers and managers. Clerical workers also rated courses useful. And they rated supplier support (ranked 40) more useful than did knowledge workers (ranked 13). (See Table 3.)

Knowledge workers and managers pointed to consistent program features as useful for learning new software. They also found co-workers' help more useful than did clerical workers. More than clerical workers, knowledge workers and managers relied on their knowledge of similar programs, and they found it useful to search menus. Several of the clerical workers said that it never occurred to them to search menus.

**Learner type.** When participants were classified according to learning styles, the ranking of activities changed again. Learner-type classification was based on responses to six questions about a user's willingness and ability to learn software autonomously. Of 263 users, 49 (19 percent) were classified as "dependent learners," 185 (70 percent) were classified as "self-directed learners," and 29 (11 percent) were undetermined so they were omitted from the results. (See Table 4.)

The study indicates that dependent

learners generally prefer a directed approach; self-directed learners generally prefer an autonomous approach. Self-directed learners like more control over what, when, and how to learn. Dependent learners prefer one-on-one discussions with trainers and consultants. Self-directed learners find it more useful to experiment with the software and search menus.

Considering that only 19 percent of respondents were classified as dependent learners, it's surprising that many organizations rely almost exclusively on formal training to teach software use.

### Developing a support system

A first step in implementing new software is to recognize that different types of users benefit from different types of learning activities. Here are some effective ways to support software learning.

- ▶ Enable employees to experiment with new software before or instead of formal training.
- ▶ Reward knowledgeable employees who serve as resident experts. If necessary, include their support as a measurable goal on their performance appraisals.

- ▶ Make a variety of learning activities convenient and available to employees, including manuals, "third-party" books (books about the software written by people other than the supplier or internal technology-support staff), supplier support numbers and guidelines, and current training programs redesigned to explain how to use the new software's help feature and menus.

- ▶ Provide a two-hour jump-start session with an overview of the software.

- ▶ Offer full-day classes for people who prefer structured training.

- ▶ Provide half-day, quick-paced classes for self-directed learners and experienced users.

- ▶ Provide half-day or full-day open computer labs where users can work on problems and projects. Advertise in advance and encourage attendance from all levels.

- ▶ Encourage users to drop by a class in progress. They may learn something by just observing.

- ▶ Implement an art gallery in a common area to showcase users' work with the software, with their names and phone numbers. You can black out sensitive data.

The study indicates a need to support diverse learners. We need to rethink and redesign training so that we embed learning support. And we need to transform training departments into learning support centers. ■

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