

# The Manager

MANAGEMENT STRATEGIES FOR IMPROVING HEALTH AND FAMILY PLANNING SERVICES

## In this Issue

Opening an "E-window" for Learning	2
Using E-learning to Develop Management and Leadership Skills	4
Using E-learning Technologies to Help Improve Performance	5
Working Solutions—The World Wide Web	10
Working Solutions—The Americas	11
Planning and Implementing a Pilot E-learning Activity	12
Technologies and Services Needed for E-learning	13
Using E-learning to Meet Management Challenges	16
Working Solutions—Africa	17
Reviewers' Corner	18
Technical Definitions and Concepts	19
Source Note	21
Checklist for a Pilot E-learning Activity	22

## Supplement

Discovering E-learning Resources Available on the World Wide Web and by E-mail

# E-learning for Program Managers through Global Information Resources

## Editors' Note

The impact of the global information revolution is just beginning to be felt in many parts of the world. Many of the world's peoples may know of its development only through reports by television, radio, or the printed word, or feel the surge of change in local and national life.

Regardless of where you, your organization, and your country are today, you can be assured that you will be affected by this electronically driven revolution. Educating yourself about the new developments in electronic communication will help you and your organization to capitalize on the opportunities and advantages that they bring. "E-learning," or learning through electronic means, offers the possibility of training staff in the workplace, supporting those who want to apply newly learned skills, and opening communication channels that enhance ongoing work activities.

This issue of *The Manager* covers this new and rapidly changing field, and includes a glossary of technical terms. It explains how your organization can benefit from e-learning and provides advice for planning and implementing a pilot e-learning activity. The accompanying supplement can help you find and use new electronic resources to meet your e-learning needs.

—The Editors

## The Manager

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## Opening an “E-window” for Learning

*Ms. Tembo, the district health officer in Porto Fino, has been thinking about writing a proposal for funding a project to support the collaboration between her district team and the three local nonprofit organizations that offer services in the district. Six months ago, the ministry provided district headquarters with desktop computers and an Internet connection. Yesterday Ms. Tembo received an e-mail from a friend, who informed her about a workshop to be conducted on the World Wide Web (the Web) which could help her develop a concept paper for her project. Several donors have been scheduled to join the workshop and are prepared to advise the participants about the best ways to obtain project funding.*

*This is the opportunity that Ms. Tembo has been waiting for. Sitting at her computer, she checks the Web site of the workshop, reviews the workshop objectives and requirements, and applies to participate. She hopes she will be accepted. She begins to make notes for the concept paper she plans to write and discuss with her prospective fellow participants.*

This scenario describes how you, as manager of a health program or service, could begin to benefit from the information revolution, by using electronic technology to access global information sources and to develop your professional skills. Learning through the use of computers and other electronic equipment is a form of electronic distance learning, or e-learning. It is rapidly growing as a means of professional education and development.

In workshops and other forums for discussion, e-learning brings together working professionals and students as collaborators from around the world. The isolation experienced by health managers in developing countries can be reduced by participating in such e-learning communities, where working professionals may share research results, opinions, and best practices. Other e-learning resources, such as courses, workshops, and self-teaching tutorials, can open windows to new skills and provide access to previously unavailable information.

This issue of *The Manager* focuses on e-learning using a computer, e-mail, related equipment and services, the Web, and CD-ROM technology. This issue is divided into three main sections:

- The first part explains how e-learning can contribute to leadership and management skills development in health and family planning organizations.
- The second part opens your “e-window” for learning—the computer—as your key means of accessing e-learning technologies. You will learn about the range of different e-learning options, and how each operates, with specific examples that you may access for further information.

- The third part helps you to incorporate e-learning technologies into a pilot training program. This part describes steps for you to follow in planning and implementing e-learning activities, and assessing the value of the outcomes for your organization.

The accompanying supplement, entitled “Discovering E-learning Resources Available on the World Wide Web and by E-mail,” discusses organizations and publications that provide information about many of the topics covered in this issue. Whether you are new to the Web or already an experienced user, this supplement is designed to help you exploit new resources that grow daily in number and diversity.

You may or may not have access to a computer and the related equipment and services that enable you to

take advantage of e-learning opportunities. In either case, this issue will help you determine whether e-learning has a role to play in improving your program.

This issue was written by James Wolff, Gilda Gussin, and Nathalie Likhite, with collaboration from Winthrop Carty. James Wolff is Senior Fellow at Management Sciences for Health (MSH), who specializes in electronic communications and who developed MSH’s Electronic Resource Center (ERC). Gilda Gussin is Senior Program Associate in Distance Learning, and Nathalie Likhite is Program Associate in Distance Learning. Winthrop Carty is Senior Development Officer, New Programs and Technology Initiatives, at LASPAU: Academic and Professional Programs for the Americas, a program affiliated with Harvard University.

### “E” for “Experience” as Well as “Electronic”

E-learning is an increasingly popular term for digital and online training. The term was coined by Elliott Masie, president of The Masie Center, a private research and development center which explores technological solutions for learning needs.

Masie holds that e-learning means more than digital, online transmission of knowledge, or computer-based training through the World Wide Web. The “e” in e-learning, according to Masie, refers to two essential components: the *experience* of learning as well as the *electronic* technology.

The experiential side of e-learning highlights the importance of training methodologies and techniques that:

- Engage the learner in exploring the subject;
- Provide simulated practice of skills and procedures;
- Assist, support, and coach learners;
- Enable the learner to interact with others who are learning in similar programs.

For further information about The Masie Center, you may visit the Web site <http://www.masie.com>.

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## Using E-learning to Develop Management and Leadership Skills

E-learning technologies can become tools for improving management and leadership skills and practices, and can add value to training programs in many different ways. To be successful, however, e-learning depends on the same fundamentals as traditional training:

- High quality of leadership;
- Needs assessment and clear objectives;
- Supportive environment in which management values learning, and encourages risk-taking and sharing of knowledge.

There are many advantages to e-learning:

**You can extend learning to the whole organization.** With e-learning technologies, you can reach managers at all levels with the same training content and educational supports. *For example, when decentralizing their services, organizations need to develop the capacity for program management at district and local levels. With the right physical infrastructure in place, managers at those levels can receive the needed training and management tools.*

**You can reach large numbers of learners.** Management development often requires large numbers of managers to institute new practices and techniques. E-learning technologies can potentially reach and help train, in a short time, that critical mass of managers needed for making progress and achieving results.

**You can tailor e-learning activities to individuals.** Instruction using an e-learning strategy can be organized to allow learners to progress at

their own rates, focusing on topics suited to their individual needs. They can skip parts that they already know or repeat the difficult parts.

**You can facilitate “mentoring” among colleagues.** Many believe that mentoring by effective role models is one of the most important components of management and leadership development. In traditional university degree programs, mentoring by faculty and the life-long relationships that sometimes arise are key supports for developing leadership potential. E-learning and electronic communication provide an increased possibility of longer-term relationships among managers and their teachers.

**You can facilitate institutional and professional linkages.** Professional exchange and sharing of experience are critical to management and leadership development. E-learning provides an opportunity to break through local, regional, and country-wide isolation and to provide and receive information on successful management improvement initiatives.

You can introduce new management tools in your program, and strengthen your staff’s skills in the use of computer and Internet technologies. Using standardized management tools delivered through the e-learning program, organizations can build common skill sets and standardize their management procedures and practices. E-learning technologies offer means for:

- Training and information support for program operations;
- Continuing support (for example, management tools provided over the Internet) for management improvements;
- Improvement in the quality of training programs, by use of standard, field-tested tools instead of reliance on ad hoc local interventions.

## How real are the advantages of “virtual learning?”

Educators are still debating the real efficacy of computer-based e-learning technologies. Much evidence suggests that e-learning methods are as effective or more effective in teaching than are conventional classrooms. (For references to current research on this topic, visit the Web site <http://cuda.teleeducation.nb.ca/nosignificantdifference>.)

Beyond that controversy, e-learning technologies clearly can provide learning opportunities for people who would not otherwise have access to new knowledge. E-learning methods may be more effective than others in teaching certain kinds of content. Combinations of classroom learning and e-learning may yet prove to be the most successful of educational strategies.

## Using E-Learning Technologies to Help Improve Performance

You can engage in e-learning in many ways, using a computer and the World Wide Web. You can obtain information from a vast range of sources. You can exchange views with others in a discussion group. You can join different types of “virtual” or Web-based workshops or classrooms.

You can practice new, complex skills over a period of time in your workplace, when you undertake a practicum, which is a practical exercise designed to help learners apply newly acquired knowledge in a working environment.

With a CD-ROM and a computer, you can also practice new skills at your convenience, using self-instructional tutorials.

This section describes how you can:

- Access information resources for management action;
- Practice self-instructional methods of learning;
- Collaborate in various types of workshops;
- Use electronic coaching and mentoring to enhance real, face-to-face workshops;
- Benefit from following an e-learning “practicum,” a practical exercise in e-learning.

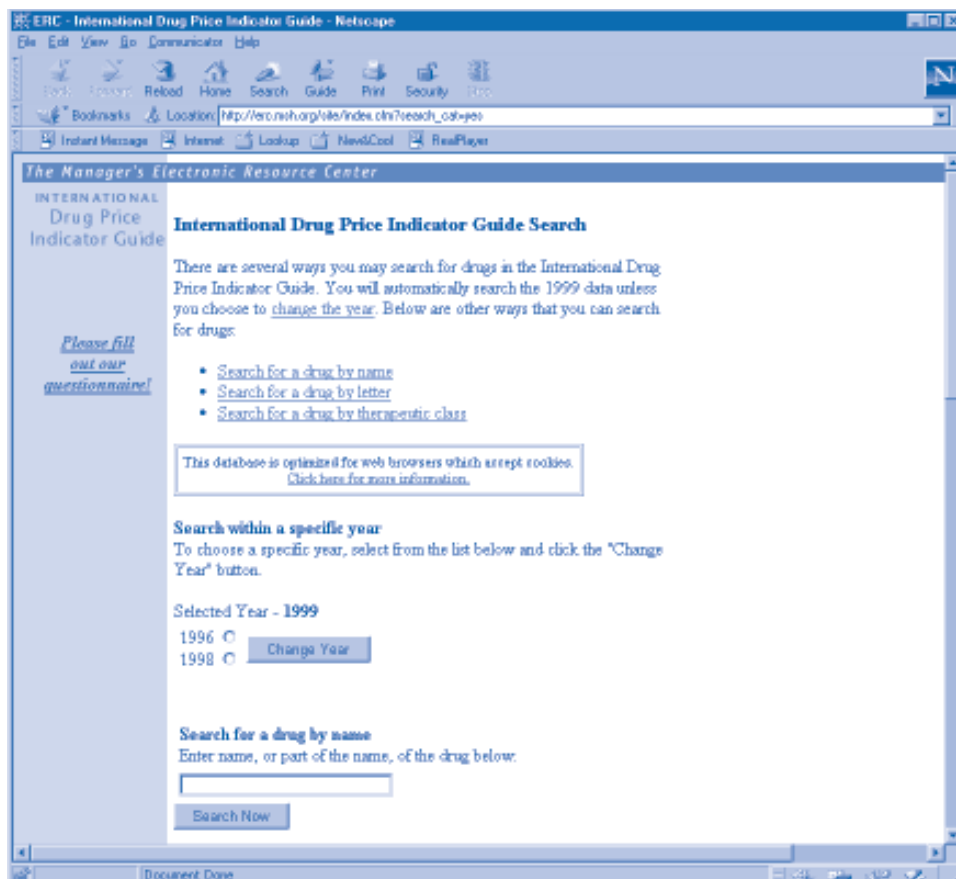
## Accessing Resources for Management Action

One of the greatest benefits of using e-learning technologies is improving your access to information. Timing is often critical for managers, so timely access to information packaged in useful forms has become one of the key advantages of e-learning programs.

Getting information delivery when you need it is called “just-in-time learning.” The Web and e-mail are information tools that can provide just-in-time learning. Consider the following example.

*A recent change in government policy has, for the first time, put a clinic manager in charge of ordering essential drugs for a rural clinic. This manager has contacted the two pharmacies in the provincial capital and received their price list. Because she is purchasing drugs for the first time, the manager is uncertain whether the prices quoted by the pharmacy are reasonable. She needs a “just-in-time learning” tool which can provide current cost information on the essential drugs to be purchased. This manager can check The International Drug Price Indicator Guide, a database available on the Web that provides current prices of pharmaceutical products on the international market. By using this guide, which is located at <http://erc.msh.org/priceguide>, the manager can learn the costs of the drugs to be ordered. She can compare those prices with prices from local and other suppliers, and base her negotiating strategy on accurate knowledge of the price range of the drugs to be purchased.*

## Drug Price Information on the Web



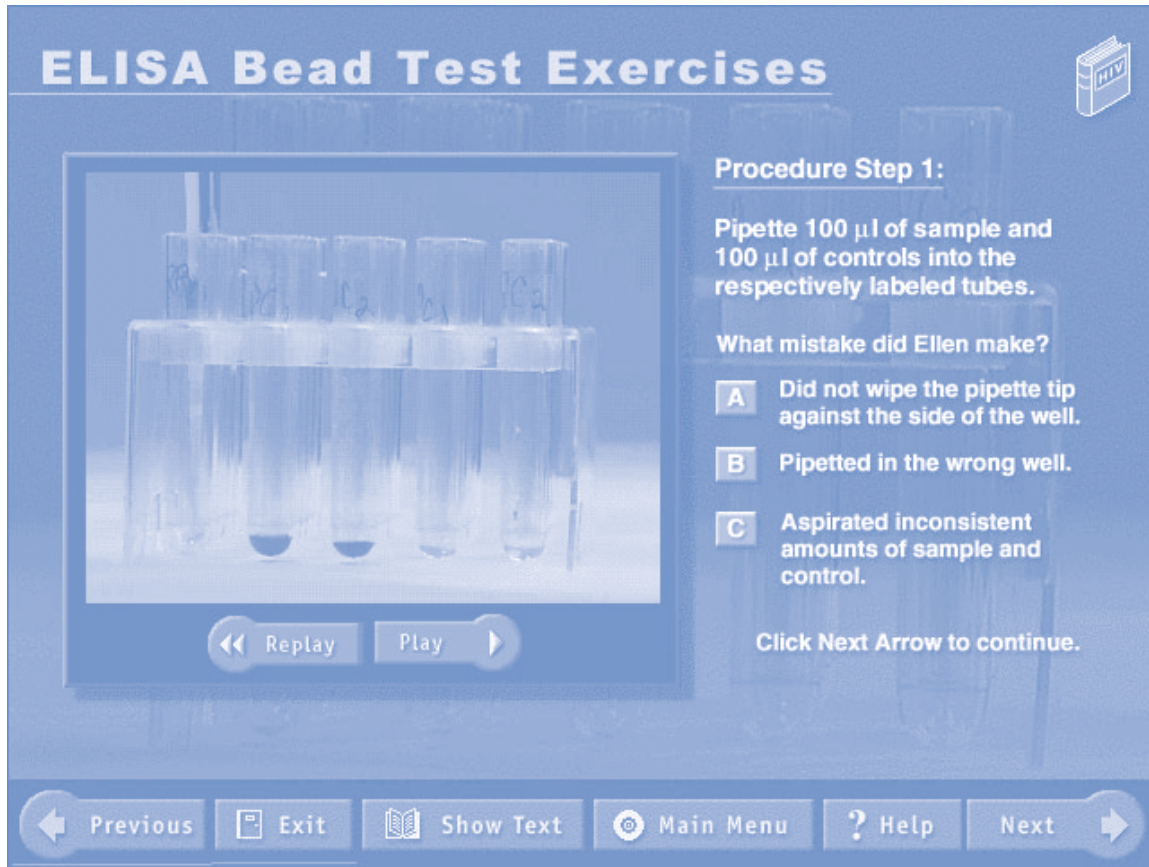
The illustration shows a sample frame of *The International Drug Price Indicator Guide* from MSH's Web site "The Manager's Electronic Resource Center" (located at <http://erc.msh.org/priceguide>).

### Practicing a Self-Instructional Method of Learning

Available on the Web or a CD-ROM, self-instructional tutorials are programs that enable you to increase your knowledge and comprehension at your own pace, and to practice new skills, often in simulated situations. Enhanced with audio and video components, such tutorials provide you with step-by-step instructions on how to complete the training. Most programs also include such assessment tools as quizzes or tests to monitor your progress. Self-instructional tutorials engage learners by making them active participants instead of passive viewers. Learners are continually prompted to answer questions, complete exercises, and form their opinions.

*For example, the CD-ROM tutorial entitled "Protecting Our Blood Supply" was created to train 126 lab technicians in the Philippines in HIV screening procedures. Errors in screening blood for HIV can have disastrous consequences, so laboratory technicians must master every detail of the procedure. The CD-ROM tutorial demonstrates each step in screening, allows learners to practice the lab procedures using a simulation, alerts learners to common errors, and highlights for technicians the importance of their role. Trainees who have completed the computer-based tutorial then go on to perform the procedure in an actual laboratory setting. To qualify for certification, they must master both the computer-based simulation and the practical demonstration in the laboratory.*

## Teaching Lab Procedures: A Frame from a CD-ROM Tutorial



In this tutorial, the learner must watch a video of a technician who performs each step of a lab procedure. The learner is asked to identify whether the particular procedure was done correctly or not. If done incorrectly, the learner is asked to identify what the error was, and how it should be remedied. For purposes of illustration, in the frame shown here, the technician had neglected to add the same amount of solution to each tube, thus invalidating the test results.

This tutorial was developed by the Department of Health in the Philippines and the US-based, nonprofit Education Development Center, with assistance from the University of Maryland and funding from the World Bank. It is the property of the Philippines Department of Health.

### Collaborating in Computer-based Workshops

Collaborative workshops provide another means for e-learning to take place. Sitting in front of their computers in their own offices or homes, participants assemble electronically in virtual workshops to learn and practice new skills. Using e-mail or other Internet-based technologies, these e-learners participate in group discussions and exercises. They follow a schedule and are guided by facilitators who may be located anywhere in the world.

Without face-to-face contact in training, the learner is apt to feel isolated, so new communication and support methods have been invented to enhance learning activities. The online support and guidance of an expert facilitator, and opportunities for discussion among students and with the facilitator, have improved the success rates of virtual classrooms.

There are two main types of electronic workshops:

- Asynchronous (with events that take place at different times);

- Synchronous (with events taking place at the same time).

**Asynchronous e-learning.** The asynchronous type of collaborative workshop brings students and facilitator together on the computer screen, but does not require them to be online at the same time. The asynchronous workshop provides a forum convenient for groups of learners who live in

different time zones around the world, because it permits them to learn on their own schedules.

Asynchronous, Web-based training combines such technologies as e-mail, e-mail discussion groups, Web pages, and self-instruction programs for communicating among learners and instructors. This type of training is well suited to discussions, presentations, Web-based research, assessments, and team projects. It is often more cost-effective than synchronous training.

## A Flexible Timeframe for Learning in This “Classroom”



The frame shown here is an example from “Finding Support for Reproductive Health Visions,” an asynchronous workshop developed by Management Sciences for Health and Partners in Population and Development. The participants sign on to the Web site to review readings and materials, discuss relevant issues with students and facilitators, and evaluate their progress with the workshop self-assessment module. This workshop uses the popular Web site for distance education of Blackboard, Inc. at <http://www.blackboard.com>. Blackboard offers, at no charge, online platforms for e-learning that it calls “CourseSites” and that can be operated without a sophisticated knowledge of computers or Web technology.

By clicking different buttons on the left, participants can view workshop announcements, photos and information about participants, audio and text interviews with donors, course documents and references. All the course documents and assignments are available by clicking on the appropriate buttons. A workshop communications center facilitates group discussion and e-mail exchange among students and facilitators. Student tools include an online “help” manual to assist learners in making best use of the workshop.

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**Synchronous e-learning.** The facilitator and learners interact with each other at the same time in a synchronous workshop. This type of “real-time” workshop usually requires such specialized equipment as microphones, video cameras, and special computer programs. The computer should have a “fast” connection with the Internet, which means that the connection should have a large bandwidth or capacity for transmitting electronic information.

The “live” interaction among participants in a virtual workshop simulates the face-to-face interaction among students in a conventional classroom. The learners must be prepared to interact with their classmates in a timely manner, so the special equipment and large bandwidth are vital in sustaining the momentum of interaction.

Connecting with each other through their computers, the learners participate in such activities as problem solving, brainstorming, debating, demonstrations, lectures, and role playing. They use collaborative technologies to make their points and share information on “whiteboards,” in “chat rooms,” and through application sharing, video-conferencing, and audio-conferencing.

A whiteboard is one type of technology which is built into a synchronous classroom. The electronic equivalent of a blackboard or flipchart in a traditional

classroom, the whiteboard is the screen on which the participants and instructor can take turns writing their messages and presenting information about the subject under discussion. Students can also use a whiteboard for group activities. *For example, a group of students and the instructor can enter data into a spreadsheet from many different locations around the world. Working online at the same time, individuals can fill in cells, correct formulas, or modify column labels, while everyone in the group can see exactly what they are doing.*

Chat rooms offer structured means for learners to have a dialogue by typing their comments in a continuous online discussion via e-mail. This type of Web-based training allows groups to discuss, reflect on, and solve problems together in real-time learning.

Web-based video-conferencing and audio-conferencing are other technologies used in a synchronous classroom and are conceptually similar to communication by sight and sound at traditional conferences. Both allow learners to communicate interactively and to hear and/or see other participants and the facilitators. These technologies permit participants to engage in role-playing exercises, which would not otherwise be possible.

### A Global Platform for Enhancing Health Research

The Program for Collaboration Against AIDS and Related Epidemics, or ProCAARE, hosts a Web-based forum for health practitioners around the world who are engaged in the fight against AIDS. Through ProCAARE, clinical and public health physicians, nurses, researchers, policy makers, program managers, and others discuss biomedical and health care issues, including such topics as prevention, access to drugs, home and institutional care, education, and epidemiology.

ProCAARE allows health professionals around the world to communicate and exchange information on HIV/AIDS. It focuses on communication among colleagues who are facing challenges in each of the world's major regions. Archives of the participants' exchanges may be read online.

To maintain a high-quality and lively interaction, moderators actively monitor the discussion. The moderators also support the network by supplying summaries of current and relevant research findings and other material of interest. A steering committee of representatives from internationally recognized institutions in Africa, Asia, Latin America, Europe, and North America guides the general direction of discussions.

For further information, visit the Web site <http://www.healthnet.org/programs/procaare.html>.

### Coaching and Mentoring to Enhance Face-to-Face Training

E-learning technologies can improve the effectiveness and impact of regular face-to-face training. One of the problems with traditional workshops has always been the difficulty of providing follow-up support to participants for continuing the educational process. E-learning technologies make it possible to deliver educational support to participants after their workshop has ended. *For example, a routine day-long training session in improved contraceptive-prescription practices can*

*be extended and enriched by an e-mail program for participants that enables them to discuss technical problems which they may encounter after they have returned to their work sites. E-mail can provide them with updates on prescribing practices and protocols, drug prices, patient-counseling information, and key review articles.*

E-mail and Web tools can also support technical assistance and training activities by enabling the participants to collaborate in reviewing materials.

### Online Preparation for a Face-to-Face Meeting

Some Latin American universities, research institutions, and nongovernmental groups have developed their understanding of how information technology can best serve their institutions and countries through seminars on “The Strategic Use of Information Technology,” organized by the Harvard-University–affiliated, nonprofit LASPAU: Academic and Professional Programs for the Americas.

The LASPAU seminars combine classroom training with diverse e-learning formats. Each seminar is conducted on the Web over a period of one to two months and, subsequently, at a Harvard University classroom for three days. The online portion is conducted through asynchronous discussions in weekly modules, and involves the use of electronic discussion lists and multimedia training materials, among other items.

During a typical “online week,” students must access materials on the Web; read, watch, or listen to them; discuss the information with fellow students via e-mail; and submit to the instructor and their classmates a brief written analysis of their week’s work. Each week concludes with feedback, in the form of a written summary, from the instructor to the group.

After concluding the online portion of the seminar, students travel to Harvard University for the three-day component. The curriculum there includes case studies of institutional change through technological innovation, and examination of the basic theory of the strategic use of technology. The gathering is greatly enhanced by the learning and group interaction of the students before they meet face-to-face.

For further information, see the LASPAU Web site at <http://www.laspau.harvard.edu>.

### Following an E-learning Practicum

A practicum provides a practical, on-the-job training experience for the learner through use of electronic and face-to-face learning in the workplace. Practicums appear to have a good potential for improving both individual job performance and organizational performance. A workplace practicum may be structured to:

- **Support teams of learners.** Participating organizations identify a team of staff members who, after following the practicum, will become change agents by implementing what they have learned. Within each team, one participant is designated and trained to lead the learning process with other team members.
- **Target the individual learner.** The practicum combines e-learning technologies, print, and face-to-face workshops to support each participant throughout the learning process.
- **Facilitate exchange among senior managers leading the teams.** Team leaders are able to communicate with other team leaders around the world. In this way, they can share methods and experiences, solve problems, and support each other throughout the process, rather than instituting new practices in isolation.

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## Planning and Implementing a Pilot E-learning Activity

Assume that your organization supports your e-learning objectives, and conditions in the workplace are right for an e-learning initiative. So you decide to add an e-learning component to your training program. How do you take action? What should you be thinking about?

This section will help you plan and implement a pilot e-learning activity for your organization, in five steps:

- Step 1: Determine what e-learning could offer your organization.
- Step 2: Prepare your organization for e-learning activities.
- Step 3: Establish an e-learning team.
- Step 4: Pilot the e-learning activity.
- Step 5: Evaluate your e-learning experience.

### Determining What E-learning Could Offer Your Organization

E-learning is first and foremost about learning. Before introducing e-learning into your organization, you will need to determine whether the working environment supports learning in the workplace and how e-learning could support the training and educational objectives of your organization. To begin this process, you will need to answer the following questions:

- Would e-learning strengthen your organization's training program? Why?
- Would e-learning enhance the quality of the learning experience? If so, in what ways?
- Would e-learning simplify the training of large numbers of staff?
- Could e-learning provide instruction that is not otherwise available?
- Would e-learning reduce training costs?

## Preparing Your Organization for E-learning

To introduce e-learning activities effectively and fully into your organization, you will need to prepare both the organization and staff. E-learning is a collaborative and cooperative effort, so the staff will need to understand thoroughly the purpose and intended use of the e-learning activity.

The organization will be responsible for introducing e-learning to the staff, and for explaining how e-learning can help meet their training and professional development needs. For e-learning to be successfully introduced, new policies, different norms, and a new set of rewards will ultimately have to be instituted.

Your organization will also have to address such issues as access to computers, purchase of equipment, training in the use of information technologies, and development of communication and information support services for obtaining and maintaining the information and computer infrastructure and an Internet connection.

Here are some questions to ask yourself when determining whether your organization is ready for e-learning:

- Is your organization willing to give staff the time required for participation in e-learning activities?
- Do staff have access to the technologies and services they need to undertake e-learning activities? (See accompanying box on "Technologies and Services Needed for E-learning.")
- Are technicians available in your organization who can ensure ease of use of the technology?
- Do your staff have adequate computer skills?
- What would motivate your staff to participate in an e-learning activity?
- Are supervisors available to support application of new knowledge and skills?

## Technologies and Services Needed for E-learning

Since different forms of e-learning require different technologies, you should identify which of the following components would be available to your organization before you select a specific e-learning approach.

### E-mail-based learning activities

- Reliable telephone service and electric power supply
- A personal computer equipped with an e-mail program and connecting software
- A modem, to translate electronic signals between the computer and the telephone system
- An Internet service provider (ISP), to transmit and receive e-mail messages via the Internet; together with an e-mail account and addresses for your organization and individual staff members
- A printer, for printing messages and other documents

### CD-ROM-based learning activities

- Reliable telephone service and electric power supply
- A personal computer equipped with a CD-ROM drive, a sound card, a video card, and software to operate them

### Web-based learning activities

- All the components listed under e-mail-based learning activities
- An Internet connection from the ISP with a speed of at least 28.8 kilobytes per second
- A “browser” for exploring the Web, such as Netscape® Navigator or Microsoft® Internet Explorer
- Hardware and software to generate and/or receive audio and video signals, for multimedia learning activities

## Establishing Your E-learning Team

For e-learning to succeed in your program, you need a strong leader who understands and supports e-learning, and an effective team of professionals from a strategic selection of departments. The e-learning team should include representatives from your organization’s training, technology, and finance departments, as well as one or two potential participants in your e-learning activity.

The team will be responsible for leading the effort and should:

- Describe how e-learning will benefit the organization, in tandem with current training activity.
- Establish a clear process for making decisions about e-learning.
- Develop a plan and budget for a pilot e-learning activity.
- Select and direct the pilot e-learning activity.
- Evaluate your experience with e-learning.

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## Piloting Your First E-learning Activity

A good way to introduce e-learning into your organization is to pilot an e-learning activity, with the help of your newly established e-learning team. This way you will be able to experience e-learning from the perspective of a learner as well as a manager.

To develop an e-learning pilot project, you should:

- Review the needs for performance improvement in your organization.
- Identify objectives for staff training that would help meet those needs.
- Determine how e-learning could support and expand those training objectives.
- Select e-learning activities appropriate to the tasks and your working environment.

Once you have selected the activity, you can organize key staff who will participate in the appropriate learning event.

**Selecting e-learning programs.** When working on the Web, it is easy to lose sight of the distinction between communication and learning. Most Web pages are similar to magazines, which are one-way communicators to a passive reader. E-learning products, on the other hand, are two-way communication tools: they actively engage learners by making them participate in the learning process. At its best, e-learning enables learners to practice and apply new skills under the supervision of an experienced mentor.

In selecting an e-learning workshop or course on the Web, you should base your choice on your learning

objectives. You can use the following criteria to help you in selecting e-learning technologies and services. Ideally, e-learning technologies and services should:

- Actively engage the learner and draw on learner experiences.
- Operate smoothly on available infrastructure and technology.
- Provide online help.
- Include examples that are meaningful for the learners.
- Follow learning strategies that match the instructional objectives.
- Operate at varied levels of learning, depending on the needs and interest of the learner.
- Be user-friendly.
- Include means of assessing the learning experience.
- Present concepts in a variety of media to accommodate different learning styles.
- Have already demonstrated effectiveness in settings similar to your organization.

In addition to the above, suitable Web-based courses would usually:

- Allow learners to confer with instructors and other experts on a regular basis.
- Support learner-learner collaboration.
- Provide annotated links to other Web pages with related content.

## Resources for E-learning

The electronic resources described here offer e-learning opportunities to support your organization's training program. For information about other possible e-learning opportunities, see the Supplement to this issue, entitled "Discovering E-learning Resources Available on the World Wide Web and by E-mail."

### Interactive CD-ROM for Training of Service Professionals

Modified Computer-Assisted Learning (ModCal®) for IUD Services, in the form of a CD-ROM, supports training of health-service professionals in how to counsel women on using IUDs for contraception, and to become competent in inserting and removing the Copper T 380A IUD. ModCal® also gives guidelines in managing side effects and other health problems associated with IUD use.

The CD-ROM training module for self-instruction was developed by JHPIEGO, a nonprofit affiliate of Johns Hopkins University that supports international education and training in reproductive health for women and families.

Use of the ModCal® CD-ROM should be combined with skills practice, under the guidance of a clinical facilitator, and used with other learning materials. For more information about ModCal®, visit the JHPIEGO Web site at <http://www.jhpiego.org/global/cal.htm#modcal>.

### A Virtual Classroom for Learning Methods of Health Services Research and Evaluation

The online distance-education course "Introduction to Methods of Health Services Research and Evaluation" presents basic methods of undertaking research and program evaluation within organizations and systems of health services.

In this course, organized by the School of Hygiene and Public Health of Johns Hopkins University, participants learn about the importance of health services research and evaluation through a series of lectures, course readings, and laboratory exercises. The learning experience evolves through small-group interaction over the medium of the Internet. An online office allows learners and teachers to communicate with each other.

For further information about the workshop, visit <http://distance.jhsph.edu>.

## Evaluating Your E-learning Experience

The final step in incorporating e-learning in your organization's training program is to evaluate the pilot project. You should evaluate three aspects of the activity:

- First, were the training results effective, in terms of the objectives and as measured by actual learning *outcomes* and *impact* of the activity on staff performance?
- Second, was the e-learning technology appropriate for the task, and did it function correctly?
- Third, if teachers and facilitators were directly involved, did they provide adequate instruction and support during the course?

Was the training effective? E-learning offers managers new methodologies for evaluating training and performance. These methodologies utilize formal and informal tools for teaching students and evaluating their performance, such as:

- Online quizzes, tests, and short examinations—to evaluate the success of the learning process at the end of each session or lesson;
- Homework—to be corrected by the online facilitator;

- Online student journals—for self-assessment, to report personal goals and objectives in the course, and for use in developing a personal action plan;
- Use of e-mail or online discussions—to monitor learners' attitudes towards the course;
- Online or e-mailed questionnaires—to evaluate the learners' perceptions of the experience, including outcomes of e-learning.

For further information about how to assess the impact of e-learning activity on staff performance, see *The Family Planning Manager*, Volume V, Number 3, "Assessing the Impact of Training on Staff Performance." (This issue is also available online at <http://erc.msh.org/hr/tools/perform.htm>.)

#### **Was the technology appropriate and effective?**

Asking learners and trainers the following questions should provide you with useful insights.

- Did your organization provide adequate access to computers and the Internet? How familiar were the staff with the e-learning technologies utilized in the course? What kind of training did they require in order to be able to follow the course?
- How difficult or easy were the instructions to follow? How difficult or easy was the activity to implement? How difficult or easy was the online retrieval of documents and materials?
- Did electronic activities fit the instructional objectives? How effective were the learning activities in conveying course content? Did technology create any barriers to learning? Did it support learning? How?
- Was there appropriate support for use of the technologies?
- In using those technologies, did the staff meet their own expectations in increasing their skills to the desired levels?

**Were the trainers' support and communications effective?** Just as with face-to-face training, the learner-trainer relationship in e-learning is a key factor for evaluation. Questions should be framed to assess the effectiveness of the relationships among

instructors, facilitators, and learners engaged in e-learning. Some questions for the e-learning evaluation include:

- To what extent did the trainers provide support and guidance for learners?
- Were the trainers' online office hours convenient for learners?
- Did the trainers respond to questions and requests promptly?
- To what extent did learners participate in online class discussions?
- Was the pace of the course appropriate?
- To what extent did the presence of the facilitator enhance the delivery of the course?

If your evaluation has determined that the e-learning activity was a success, you should be in a position to consider plans for incorporating e-learning activities into your organization's training program and regular work program.

## **Using E-learning to Meet Management Challenges**

In today's economic environment for health services, with increasing operating costs and competing demands on budgetary resources, managers must find new solutions to keep up to date with new knowledge and continue meeting clients' evolving needs.

Innovative communications are bringing new resources within reach for continuing education and professional development. These resources offer new opportunities, as they become available to you in the workplace, to improve service delivery and other performance aspects of your organization.

Your organization can benefit from these new resources by creating e-learning initiatives, to help you and your staff develop new skills and make informed decisions. The quality of your services can improve, and your organization will become better able to fulfill its mission. That, after all, is the ultimate objective of the e-learning venture.

## African Virtual University

E-learning is opening new opportunities for a technical education at 25 African universities, all partner institutions of the African Virtual University (AVU). AVU has created a satellite-based network for post-secondary learners and corporate employees in 15 sub-Saharan countries, using interactive satellite-based and computer-based technologies.

With support from the World Bank, AVU offers certificate, noncredit, and remedial instruction in such subjects as engineering, information technologies, business management, and languages. Since it began pilot programs in 1997, AVU has broadcast over 2,000 hours of instruction to more than 9,000 students.

**Broadcasts.** AVU courses are delivered as videotaped classes and live, interactive sessions to classrooms at 16 English-speaking and 9 French-speaking African universities. Typically, 30 to 40 students might sit at their desks in the AVU classroom, watching the broadcast on a television screen. A local facilitator is on hand to help students who have questions.

Professors and instructors from well-known universities in Africa, North America, and Europe, as well as from private corporations and organizations, provide the content. During the live sessions, students can interact with their professors by telephone, asking questions and discussing problems through the classroom facilitator. Students may also send questions to their teacher via e-mail or fax, for a response before the end of the class.

The weak telecommunications infrastructure that exists in many sub-Saharan countries makes Internet connection very slow. AVU is developing a system that will use satellite capacity to transmit data and thus enable AVU sites in Africa to have more rapid Internet access. Once this capability is developed further, it is quite possible that AVU will deliver more of its course content in a Web-based format.

AVU currently offers three types of programs:

- Noncredit courses and seminars—in critical areas such as AIDS education, quality management practices in the workplace, and language instruction.
- Remedial instruction—in mathematics, sciences, languages, and other subject areas, for students who aim for admission to an African university.
- Certification programs—in information technology (IT) training in widely used applications such as Microsoft Windows, Novell, and Lotus. The programs are designed to produce qualified IT professionals, utilizing both instructor-led and Internet-based training modules.

For more information on African Virtual University, visit their Web site at <http://avu.org>.

## Reviewers' Corner

*A forum for discussing additional applications of the concepts and techniques presented in this issue*

**On availability of e-learning technologies...** *One reviewer notes the irony that* “Program managers at district and local levels, who are most in need of training and management tools for decentralizing their operations, might be the least likely to have access to e-learning technology.” Another remarks, “... wireless communications are becoming faster and cheaper, which means that nonwired rural and poorer regions ought to be able to link with the Internet without having to be wired up first...”

**On the functions of the e-learning team of an organization...** *One reviewer suggests,* “In addition to the activities listed, the team should organize advocacy activities directed at their funding organizations, board of directors, and other influential members who can support an e-learning initiative. High-level managers might not support funding to introduce new technologies since they don't readily perceive the benefits of such initiatives. It is important for the organization to show how it will benefit from the use of new communication and learning approaches.”

**On the costs of e-learning program development...** *A reviewer relates,* “One project team found that its e-learning program was much more expensive to develop and implement, in terms of staff time, than the time requirement in sending staff elsewhere to participate in a traditional training program.”

**On the need for more evidence of benefits from e-learning programs...** *One reviewer observes,* “Many of the assertions about the benefits of e-learning are not supported by sufficient research or descriptions, or by results of actual implementation in the field.” The editors reply that “E-learning is an extremely new field. We agree that there is a need for more research and documentation of results.”

**On the suitability of different types of knowledge for e-learning...** *A reviewer affirms,* “Skills in the cognitive domain of knowledge are best suited to e-learning methodologies. Those in the attitudinal and psychomotor domains are not so well suited to e-learning formats.”

**On an organization's predisposition to learning...** *One reviewer believes that* “Organizational learning is a critical element in sustainability of the organization. The competitive advantage of an organization depends on the ability of its human resources to learn, and their attitude toward learning.”

## Technical Definitions and Concepts

Definitions in this section are drawn from standard dictionaries and from the following publications:

- Driscoll, Margaret and Larry Alexander, *Web-based Training: Using Technology to Design Adult Learning Experiences*. Jossey-Bass/Pfeiffer, San Francisco, CA, 1998.
- Hale, Constance, ed., *Wired Style: Principles of English Usage in the Digital Age*. HardWired, San Francisco, CA, 1996.
- “Using Electronic Communications in Family Planning,” *The Family Planning Manager*, Vol. V, No. 2. (Available online at <http://erc.msh.org/readroom/english/usingec.htm>.)

For a Web-based source of definitions, visit <http://www.webopedia.com>, a commercial online dictionary and search engine dedicated to computer and Internet technology.

**Application sharing:** Collaboration at a distance, using a shared piece of software; for example, a group of learners jointly creating a spreadsheet for an assignment.

**Asynchronous:** Taking place independently in time.

**Asynchronous conferencing:** Use of electronic mail and shared electronic documents among participants, independently in time, to hold a meeting over the Internet. Participants may join the discussion at any time, read each other’s comments, and add their own comments.

**Audio-conferencing:** Meeting electronically, whereby distant participants can listen and talk to each other in real time.

**Bandwidth:** The capacity for transmitting electronic information. High bandwidth indicates a capacity to transmit a lot of information very quickly, while low bandwidth indicates slow transmission. The bandwidth determines what kinds of e-learning technologies can be used.

**Browser:** A computer program that allows users to search for and access resources over the Internet. The most common browsers are Netscape Navigator® and Microsoft Internet Explorer®.

**CD-ROM:** Abbreviation of “compact disc–read-only memory.” A type of optical disk capable of storing large amounts of data, a CD-ROM can store large color applications, graphics, sound, and video. A CD-ROM user can participate in learning activities, view graphics, listen to audio, and watch video that would otherwise be inaccessible over a low-bandwidth Internet connection. Most new computers are equipped with a CD-ROM player.

**Chat room:** A virtual room on the Internet where informal discussions take place through typing of e-mail messages. Technically, a chat room is a channel for electronic communication.

**Digital:** Describes the system of storing electronic information as a stream of separate charges, “on” or “off” states, that are represented by, respectively, the values 1 and 0.

**Distance learning:** A learning situation in which instructor and student are not at the same location.

**Download:** To transfer information from a network (such as the Web) to a personal computer.

**E-learning:** Distance learning by electronic means.

**Electronic forum, or E-mail discussion group:** A forum for a group of individuals to exchange information on a specific topic by e-mail. E-mail discussion groups usually use mailing-list technology to share information.

**E-mail:** Electronic mail. The most basic of the electronic communications tools, e-mail allows individuals to send and receive written messages, graphics, and audio communications.

**Hardware:** The physical parts (electronic and mechanical) of a computer.

**Home page:** The first “page” or screen of information presented on a Web site. Home pages often contain links to a suite of related pages or sites.

**Interactive:** Having the capacity to provide control, direct attention, and coordinate communication among students, instructors, and content. Also, having the capacity to engage learners with other participants and the content of the learning experience.

**Internet, or “the Net”:** A nonformal network of computer networks that communicate over telephone lines or microwave links, for exchange of electronic information. Called the “information superhighway,” it is home to the World Wide Web. The Internet has become as much a cultural as it is a physical phenomenon.

**Internet service provider (ISP):** A service that provides the user with a connection to the Internet.

**Just-in-time learning:** Learning programs without long development cycles. Just-in-time learning provides knowledge and teaches skills to those who need the information immediately.

**Kilobyte (KB):** A measure of data carrying capacity equal to 1,000 bytes. (One byte usually equals one character of text.)

**Link:** In the context of the World Wide Web, a connection between one site or URL and another.

**Modem:** A device which translates electronic signals between computers and telephone systems.

**Moderator:** An individual charged with “ownership” of an e-mail forum or workshop. The moderator assists discussion by monitoring messages and taking actions so that the group’s objectives are achieved.

**Multimedia:** Characterizing use of two or more communications media in a computer-based training program: text, visual images, video, animation, and audio.

**Online:** The state of being connected to the Internet.

**Operating system:** The basic software of a computer.

**Platform:** A Web site; also, the totality of the hardware, operating system, and software in operation that provides the experience of electronic communication.

**Real time:** The actual time during which an event takes place.

**Site, or Web site:** A “location” on the Internet, usually referring to a server where information is available.

**Software:** The programs which enable a computer to perform diverse functions and which are stored electronically in it.

**Sound card:** An electronic circuit board that records and plays back sound.

**Synchronous:** Taking place in real time, or “live.”

**URL:** Uniform resource locator; the location or address of any resource on the Internet.

**Video card:** An electronic circuit board that converts the images created in the computer to the electronic signals required for display on the monitor.

**Video-conferencing:** Meeting electronically, whereby the participants can see and interact with each other and the instructor. Desktop video-conferencing combines personal computing with audio, video, and communications technologies to provide real-time interaction.

**Virtual:** Existing in electronic form, as an image or sound.

**Whiteboard:** Software that enables two or more users to share a Web-based “chalkboard” for written communication with each other.

**World Wide Web (WWW), or “the Web”:** The global electronic network of networks. The most advanced tool currently available for sharing information over the Internet, the Web permits navigation on the Internet and access to information in all formats.

### Source Note

In addition to the URLs already identified in the text, the following three Web sites contributed to the information that appears in this issue of *The Manager*:

- Educause at <http://www.educause.edu>
- Open University Worldwide, Ltd. at <http://www.ouw.co.uk>
- University of Idaho (Engineering Outreach) at <http://www.uidaho.edu/evo/distglan.html>



## Checklist for a Pilot E-learning Activity

- Determine how e-learning could enhance your organization's training program.
- Assess your organization's state of technological readiness for an e-learning program. Make sure that you have the required hardware, software, support services, and office environment.
- Assess the preparedness of your colleagues to engage in e-learning activities. Make sure that they have adequate computer skills and the right attitudes and motivation.
- Establish an e-learning team, consisting of staff from your training, information technology, and finance departments, and potential e-learning participants.
- Have the team organize and implement a pilot e-learning program along the following lines:
  - Step 1. Review the needs for performance improvement in your organization.
  - Step 2. Identify objectives for staff training that would help meet those needs.
  - Step 3. Determine how e-learning could support and expand those training objectives.
  - Step 4. Select the e-learning activities appropriate to the tasks and to your working environment.
  - Step 5. Direct the implementation of the pilot activity.
- Evaluate the pilot experience with your team, including the effectiveness of learning and the cost-effectiveness of your organizational efforts.
- Consider making plans to incorporate e-learning activities where they would most benefit your organization's training program and regular work program.

*The Manager* is designed to help managers develop and support the delivery of high-quality family planning services. The editors welcome any comments, queries, or requests for subscriptions. Please send to:



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