LEVERAGING THE TECHNOLOGIES OF LEARNING TO IMPROVE PERFORMANCE
THE NEW WORLD OF INTERPERSONAL SKILLS TRAINING

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Even in today's technology-infused training world, few can deny that the classroom (or some type of face-to-face group learning) has an important role to play in the mastery of interpersonal skills. How else to develop those highly nuanced customer service, leadership and sales skills organizations rely on to operate effectively and reach their strategic goals?

Equally undeniable is the power of the Internet and other learning technologies to make training more broadly available, more just-in-time and just-for-me, and potentially less expensive.

When it comes to interpersonal skills training, the challenge virtually every organization faces today is how to navigate among the new as well as the existing training options and select the combination that will improve employee performance and, ultimately, deliver business results.

For some organizations, that challenge is couched in well-defined performance objectives. For many others, however, it's more a matter of "Let's try something and hope it works."

- Janet, HR manager for a global pharmaceutical firm, has been handed a very specific assignment. With offices worldwide, her company is putting all supervisors through a classroom training program designed to support the organization's new and successful "physician-friendly" strategy. It is very important for all new hires to receive this training as soon as they come on board, yet there won't ever be enough of them in one place at one time to justify traditional classroom sessions. There is pressure on Janet to base the training on the company's recently acquired web meeting capabilities.

- Anne-Marie is the vice president of sales for a large technology products company that represents a merger of five smaller firms—each with different but overlapping markets, and a former competitor of the other four. One of the biggest anticipated payoffs of the merger was the creation of a single sales force that could sell all products to all markets. Alas, this synergy has not occurred, so the CEO has told Anne-Marie to use technology to put the geographically scattered sales force through cross-training in all product lines.

- Davis, customer service manager for a large insurance company with several regional call centers, is facing demands to control costs and

increase the on-call productivity of his service reps. With this pressure—plus the rapid turnover in customer service positions—he can no longer afford to take people off the floor for classroom training. At the same time, if they are to spend less time with each customer, the reps need training more than ever. It seems to Davis that technology needs to play a big part in any training effort. He also believes the reps need a better understanding of the organization's customer service strategy and more leeway to handle customer concerns on their own.

- Lurleen is director of training at a large financial organization with branches across the country. To manage effectively, the organization operates a sophisticated communications system among the sites, which is run by the well-funded information technology division. Lurleen has been charged with using this technology to minimize the costs of training. She's set up a cross-functional team of training and IT staff, but turf issues have so far impeded progress. The trainers see this as their project, while the IT people believe their expertise should put them in the driver's seat.

THE BASICS STILL APPLY

Each of these organizations not only has different goals, but also its own unique mix of existing technology, techno-savvy, financial resources and receptiveness to change. With all these differences, the question is where—and how—to start.

Given its high profile and the keen interest it generates among many decision-makers, technology is a tempting starting point. However, at AchieveGlobal we have found that successful organizations take a more balanced approach organized around three basic questions[1]:

- How will the training support the outcomes the organization wants to achieve?

- What is the most intelligent way to use the technologies of learning to produce the desired performance outcomes?

- What implementation issues need to be addressed?

1. How will the training support the outcomes the organization wants to achieve? It's one thing for an organization to have a strategy. It's another for the strategy to be clearly articulated, broadly accepted and well implemented. These efforts require *people*. People are the link between the strategy and the hoped-for results. People need to see and understand the strategy clearly, take ownership of it, and develop the competencies and skills to do the work required to carry it out.

Fortunately for Janet, the pharmaceutical firm's physician-friendly strategy was already understood and supported throughout the organization. She was therefore able to focus on the best mix of old and new technology and related implementation issues.

However, if a strategy is not understood and accepted, starting with technology can be premature or otherwise off the mark. For Anne-Marie, no amount of web-based cross-training will produce the desired synergy among the five once-separate sales forces until the integration strategy itself is accepted.

First, the issues blocking support need to be identified; management must commit to removing them; and people throughout the organization must develop the skills to support change and work collaboratively in new ways. In the near term, a more intelligent use of technology might be to support the development of these skills. Without them, Anne-Marie may end up going down in flames along with a lot of very expensive hardware and software.

2. What is the most intelligent way to use the technologies of learning to produce the desired performance outcomes? When interpersonal skills training took place only in the classroom, the list of instructional choices was fairly limited—pre-reading, large- and small-group discussion, video, role

plays and so forth—at least compared with what's available now, thanks to technology.

Today, the number of instructional choices has expanded to include a whole range of new options in addition to the classroom. These include information delivered online via the web or over corporate intranets; performance support systems that deliver information at the precise point and moment of need; interactive multimedia training delivered on CD-ROMs or on the web; interactive teleconferencing involving networked computers, telephone lines or satellites; and enterprise-wide learning-management systems that manage both the development and the delivery of all types of training. *(See the Glossary of Terms for a more complete listing.)*

To make the best use of such technologies, it's necessary to first "deconstruct" the traditional learning experience—to break it down into its component parts, and then decide which technologies fit best with which part. Many people question how anyone could successfully master an interpersonal skill by sitting alone in front of a computer screen. The answer lies in taking a hybrid, mix-and-match approach to technology—including "low-tech" and "no-tech" personal interactions—in which each component of learning dictates the technology used to provide it.

AchieveGlobal has identified five universal and separate components involved in learning an interpersonal skill—five learning experiences learners go through to master a skill and successfully apply it over time on the job. To create sufficient and sustainable performance improvement, organizations need to create opportunities for learners to:

- *Commit to learning new behaviors.* If the organization gives short shrift to developing commitment among its employees, they may never understand or care how the new behavior fits into the organization's big picture, or why it is important enough for them to put effort into

mastering it. Unless employees line up behind the need to learn, they won't have the motivation to start or complete the training, let alone support the strategy.

- *Assess and measure performance gaps and improvement efforts.* Without this opportunity, learners won't know which parts of their performance they need to improve, nor will they benefit from the motivation that comes from knowing how well they are progressing through the training. For their part, organizations that don't build assessment and measurement into their training are unable to measure results, identify success or build a case for future training investments.

- *Acquire knowledge about the new behavior and how it supports the strategic goals.* If organizations don't provide this experience, learners will lack a context for the new behavior, as well as a common terminology and a sense of the skill steps and pitfalls. Nor will they learn in any systematic way the concepts underlying a more advanced application of a given skill. Furthermore, if an organization fails to create a shared knowledge of the how, what, when and why of a strategic initiative, it will always lack focus.

- *Develop competence in the new behavior.* This experience is central to learning any new interpersonal skill. Moreover, it breeds confidence that, in turn, helps employees adopt an attitude of doing whatever needs doing, rather than just doing their job. If an organization doesn't provide the opportunity to practice in a safe but realistic environment with live, expert feedback, there can be no guarantee of skill development. This translates into little or no improvement in individual performance or the achievement of organizational goals.

- *Apply and sustain the new behavior on the job.* Unless learners have the appropriate support to apply their new learning on the job, the new

behavior will die out. Without the all-important reinforcement, coaching and modeling from managers, learners may believe the new performance expectations don't really matter. On the other hand, when employees are encouraged to apply their new learning to their work, they can have a measurable impact on the bottom line. It's critical for the organization to channel and reward this process, and to make sure that growth at the organizational level keeps pace with individual development.

The following table lists a range of technologies that could support each of these five learning experiences.

The table includes:

- what needs to happen for the experience to be successful

- the ideal outcome of the experience

- whatever support and additional resources might be required

The table gives a range of possible technologies for each learning experience. The final choice will depend on each organization's specific situation.

Technologies that Support the Five Learning Experiences

1. Commit to learning the new behavior.			
What needs to happen?	*What's the ideal outcome?*	*What helps achieve the outcome?*	*Which technologies should be considered?*
Learners: • Acknowledge the importance of the skill • Recognize their personal need to learn	Learners: • Take charge of their own learning • Make extra effort to master the skill • Move quickly to apply the skill	Learners need to see: • Relevance to the organization's goals • WIIFM (What's In It For Me?) • Management support	• Coaching • Instructor-led training • 2-way video conferencing • Audio conferencing with support materials • Interactive web-based conferencing

2. Assess and measure performance gaps and improvement efforts.			
What needs to happen?	*What's the ideal outcome?*	*What helps achieve the outcome?*	*Which technologies should be considered?*
Learners: • Evaluate their existing knowledge of the skill • Determine the type and level of training required to reach the desired performance improvement • Check progress • Evaluate the degree of change	Learners: • Receive training that is geared to their specific performance needs • Know how well they are doing and where they need to concentrate their efforts to improve	Learners need to see: • Reinforcing and non-punitive • Linked to an organization's competency or performance management systems	• Paper-based assessment • Web-based assessment • Supervisory behavioral evaluation • CD-ROM assessment

3. Acquire knowledge about the new behavior and how it supports the strategic goals.

What needs to happen?	What's the ideal outcome?	What helps achieve the outcome?	Which technologies should be considered?

Learners:
• Are provided information about the skill: the specific steps, when the steps should be used, relevant terminology, examples, tips and pitfalls
• Are provided opportunities to practice cognitive components of the skills through examples, simulations and interactions
	Learners:
	• Have a clear understanding of what, when and how to use a skill
	• Have a common set of terms and concepts that can help those who take the training work together more effectively
	• Can access critical "knowledge bits" precisely when they need them
		Learners need:
		• To be in control of as much of the experience as possible:
		  - the pace of the learning
		  - the scheduling
		  - the format
		  - the order of content
		  - the type of feedback received
		• Information presented in small, appropriate chunks
		• A conceptual framework within which to store his or her new knowledge
			• Instructor-led training
			• Web-based training
			• Interactive web-based conferencing
			• Coaching/mentoring
			• Online tutoring
			• Online "office hours" with experts
			• Web bulletin boards
			• Books
			• Audiotapes
			• Videotapes
			• Workbooks
			• CD-ROM

4. Develop competence in the new behavior.

What needs to happen?	What's the ideal outcome?	What helps achieve the outcome?	Which technologies should be considered?
Learners: • Develop basic mastery by practicing both cognitive and conversational components of the skills in a controlled, safe environment • Receive feedback on their performance from the reactions of the person they are practicing with, and from an observer or coach	Learners: • Can demonstrate performing the skill in a variety of situations • Can demonstrate the skill by responding to a variety of cues, both routine and unpredictable • Can identify their strengths and the areas needing further practice • Can refine their skills through continued, iterative practice with additional feedback	Learners need: • A variety of contexts in which to practice the skill • Availability of practice opportunities over time (e.g., as part of the formal training; as needed for specific upcoming tasks or assignments; and later on for reinforcement and review) • Provision for a variety of feedback-givers: trained facilitator, mentor, coach/manager, peer • A low-risk environment	• Coaching/mentoring • Instructor-led training • 2-way video conferencing • Interactive web-based conferencing

5. Apply and sustain the new behavior on the job.			
What needs to happen?	*What's the ideal outcome?*	*What helps achieve the outcome?*	*Which technologies should be considered?*
• Learners make the skills their own, and adapt and refine them to meet the specific needs of their work	Learners: • Translate training into new behavior • Gain initial confidence and are more committed to using the skills on the job • Integrate new skills into their work, so the training investment pays off over time	Learners need: • Opportunities for coaching and mentoring over time • A variety of sources of reinforcement from peers and managers • Quick access to tips, skills, things to say and do in specific situations	• Coaching/mentoring • Instructor-led follow-up sessions • Management-facilitated follow-up sessions • Video conferencing follow-up sessions • Web reinforcement tools • Interactive web-based conferencing • Chat rooms • Web bulletin boards • Electronic performance support tools • Paper-based job aids • Online tutoring

When you take the hybrid approach to technology suggested by this chart, what should a technology-enabled solution look like?

Hybrid solution #1: merging five sales forces
We believe Anne-Marie's two challenges are to build a unified corporate culture, and to create a company-wide structure to support sales and develop selling skills. Her choices of technology should be determined by the needs of her geographically dispersed and busy training audience.

This is the approach we suggest Anne-Marie use to respond to her challenges:

• The CEO makes a video highlighting the organization's reasons for merging the five companies, frankly acknowledging issues specific to the sales function, and laying out the eventual benefits of integration that each salesperson can expect. Discussion guides are prepared for sales managers to use when debriefing the video with their sales teams. Subsequent reinforcing messages as well as discussions of concerns are handled via voice mail and e-mail.

• The entire sales force is equipped to participate in interactive web conferencing, a combination of Internet and telephone conference call technology. Web conferencing is initially used to bring key sales personnel together to create a single sales process for the entire sales force.

• New regional sales teams are created. Sometimes in small meetings, and sometimes via web conferences, the sales managers run sessions to reinforce company values, review key account challenges and build cohesive teams.

• To provide product knowledge across all lines, product profiles, account success stories and other support materials are made available on the company's intranet. Salespeople receive a CD-ROM with product demos and testimonials they can show to clients on their laptops. Audiotapes analyzing early cross-selling successes are prepared for other salespeople to play in their cars.

- After all salespeople have independently completed a CD-ROM of basic selling skills, they are then brought together in regional groups for one day of advanced practice, including role plays of challenging situations. Application on the job is encouraged through subsequent discussions with managers and a chat room for participants to discuss their customer experiences.

- A computerized sales feedback system is created to incorporate feedback from customers and measures of sales revenues and profits. To help improve performance, salespeople and their managers can access results.

Hybrid solution #2: reducing training time and boosting productivity of call centers

We see Davis' challenge as how to use technology to create "learning chunks" that can fit into a service representative's hectic schedule. Here are our recommendations for what he could do to make this happen:

- He first conducts a competency analysis to determine which customer service skills his reps need. With this analysis in hand, he can determine just what's critical to include in the training. He then develops a skill assessment survey for individual service reps to determine exactly what each rep needs to learn.

- He develops or buys a series of web-based customer service training modules. He selects modules with a variety of engaging, short, stand-alone learning activities.

- Related to the web-based modules are a limited number of classroom practice sessions led by a trained facilitator. Service reps try the skills they have learned about on the web and get expert feedback on their performance.

- To help the training "take" on the job, service reps are able to access a number of "just-in-time" performance support tools on the web.

In addition, a system is put in place that lets call-monitoring supervisors know which skills reps are working on, so the supervisors will know what to listen for and how best to direct their coaching feedback.

- Finally, supervisors have access to a series of reinforcement tools to use with service providers. These offer skills review and provide a structured opportunity to raise problems and offer suggestions.

3. What implementation issues need to be addressed? Because learning technologies often have high initial costs and aren't as flexible or fixable on the fly as, say, instructor-led training designs, thorough upfront implementation analysis and planning are even more critical (in addition to thinking through content and design issues, which have to be nailed down very specifically and very early in the process). There are big decisions to be made about financing, technology platforms, partnerships with internal and external vendors, technical support and so forth.

In other words, the standard implementation issues—figuring out what's *realistic* once you figure out what's *necessary*—can be much more problematic when technology choices are involved. As a training professional, you may find yourself orchestrating groups inside your organization—Finance and Information Services, for example—who are new to training. You also may be working with outside vendors whose expertise far exceeds yours, and who use terms you only partially understand. The bigger the initiative, and the more of a departure from the norm it represents, the larger these issues can loom.

A useful way to maintain focus is to concentrate on how well the technology is delivering the key learning experiences. You'll be better able to get through all the stumbling blocks and compromises, and to choose your battles carefully. For example, you may have ideas about the types of technology that would work best for your particular training

purposes, but if your organization's IT department is running the show, you might be well advised to let them take the lead. On the other hand, even though you may be getting pressure from management to invest in the latest technology, you may get better results at less cost by deciding to fight for something more basic that people will actually use.

Here are some questions to ask when identifying implementation issues:

What's already in place? Having telecommunications technology already in place can save resources, but by itself may not produce the results you want. For example, a two-way videoconferencing system might be a good vehicle for helping employees in several locations gain commitment to a new strategy. However, you also will need to make sure your managers have the interpersonal skills to inspire and motivate people in front of the camera.

What technology is worth fighting for? Going for all the bells and whistles can be a waste of money. Still, when it comes to interpersonal skills training, audio, video and—minimally—still images are required to demonstrate the nuances of tone and body language, as well as the subtle cues learners need to look out for. This can translate into network connections of at least 56K, a sound card in every computer, and software or browser plug-ins.

How technologically savvy are employees? For example, when choosing among Internet-based or CD-ROM interpersonal skills training programs, what features will your learners need? Employees who are used to getting technical information and training via their computers might be satisfied with a less-than-intuitive navigation system. Other less computer-savvy learners might need an easier-to-use, more polished interface in order to get and stay involved in the learning experience.

What level of effort does the strategy justify? A high-tech choice is by no means always the best choice. To enable learners to acquire knowledge about a new behavior, for example, an organization without a lot of technological know-how might opt for printed materials augmented by videotapes and/or audiotapes employees could play in their cars or on tape recorders. If, however, the strategy is important enough, the context for the new behavior is complex enough, and the employees are busy or geographically dispersed enough, it might be wise for the same organization to make an investment in its computer and network capabilities so it could offer web-based training, online tutoring, threaded chat rooms and/or interactive web-based conferencing.

How should you handle learner resistance? Unlike the classroom setting, where the facilitator can deal with participant resistance as it arises, the designers of technology-based learning need to anticipate it ahead of time and build in ways for learners to overcome resistance and develop commitment. Among the possibilities: a series of web-based interactive "what's in it for me?" segments for each major skill; a chat room moderated by facilitators; and structured one-on-one coaching opportunities with supervisors.

What about learners who don't like or don't do well with technology-based learning? Although there are technology-based "synchronous" experiences such as chat rooms and web discussions in which people communicate with each other in the moment, most are "asynchronous," i. e., people participate individually whenever they choose to. Asynchronous learning is, basically, independent study, and years of research indicate that a fairly small percentage of people stick with programs of independent study.[2] What this means is that to stay actively involved, most learners need the support of live feedback, group activities, individual coaching or other motivators.

How challenging is the content of the training? If the skills must be performed under difficult circumstances, technology opens up the possibility of solidifying learning by creating a broad range

of performance support options and practice opportunities. These allow sales and customer service people to practice first in private, instead of with their customers. Someone developing customer service training, for example, might want to build in a variety of computer-based practice sessions to help the service reps become so comfortable with the service skills that they can stick to them even when their customers give them a hard time. Salespeople might benefit from an electronic performance support system to get just-in-time help right before a face-to-face sales call.

What is your organization's track record for supporting skill development? There may be lots of support in your organization for the new and exciting technologies of training. But this type of bells-and-whistles support will have little impact if the organization isn't committed to sincerely and systematically supporting the resulting behavior change.

What type of preparation and support do managers and supervisors need? As more of the training experiences are transferred out of the traditional classroom, the burden falls more heavily on managers and supervisors to provide practice opportunities, coach, provide feedback and recognize progress. Are your managers thoroughly aware of this? Do the managers and supervisors in your organization have these skills? Do they have the support tools they need? Do they have the time? Are their performance goals tied to this activity?

How should your technology choices feed into other systems? Many organizations are moving to computerized learning management, which can incorporate competency assessment efforts and performance management systems as well as the scheduling and tracking of employees through all their training programs. If your employees are required to prove their mastery of a skill either by passing an exam or attending classroom training, you may want to ensure your computer-enabled training is linked to such a system.

What about measuring the effectiveness of your initiative? Thanks to learning and performance management systems, you probably will end up with more raw data than you could possibly use. One way to maintain a useful focus is to develop criteria that indicates when each of the five learning experiences is successfully completed. Ask yourself what is *really* important to measure? What indicators will let you know that the learning has taken and is paying off in improved performance on the job?

What should you do when the novelty wears off? As with any other innovation, it almost certainly will, so don't depend on it to carry you very far. Assume there will be stops and starts, that the new systems won't work for everyone, that subsequent generations of technology will render what you have obsolete. Given all this, you will be better able to manage everyone's expectations over time if you are able to place greater emphasis on the actual content of the training rather than on the technology medium.

RECONSTRUCTING A HIGH-IMPACT LEARNING EXPERIENCE

Predicting the future can be dangerous, especially where technology is concerned. Still, as the dust begins to settle it seems likely that the most successful use of technology for interpersonal skills training will turn out to be a hybrid approach, organized around the five learning experiences.

For example, an organization might use video conferencing or videocassettes to begin the process of gaining employee commitment, followed by manager-led group discussions. A computerized assessment program would determine skill levels. A combination of reading, CD-ROMs, web-based components and chat rooms would help employees acquire knowledge. To develop competence, learners would come to the classroom already knowledgeable, ready to maximize their time together for high-impact skills practice and expert feedback. A series of structured manager-led coaching, web-based exercises and other reinforcement

activities would help learners apply and sustain the new behavior on the job.

Given the likelihood of this scenario, it seems highly unlikely that the classroom will ever disappear as an important part of interpersonal skills training. It is more likely that, as we sort out the learning experiences that technology can best deliver, the classroom will evolve into what it's best suited for: practicing complex skills and receiving live feedback from other human beings.

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We work with organizations in a wide range of industries—in both U.S. and global implementations—and serve more than 400 of the Fortune 500 companies and more than 400 of the European Financial Times 500.

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Alternative learning technologies – using one or more technologies to deliver training. The term "alternative" is used in contrast to the traditional classroom training method.

Asynchronous discussion group – a web-based bulletin board where people can post questions and comments organized by theme.

Asynchronous Learning – where students learn in self-paced, typically online pedagogy. This is in contrast to **synchronized learning,** where the leader and participants are interacting with each other at the same time (e.g., live training in traditional classrooms or via satellite).

Audio conferencing with support materials – learners are connected via a conference call with previously supplied reference materials (often a PowerPoint presentation).

Authoring tools – these allow users to create and adapt content to the web for use in an online course. They assist in creating e-learning courses and provide a "do-it-yourself" option for placing content and materials online.

Bandwidth – the actual speed at which information is provided to users of web-based training. A larger bandwidth means that audio or video flow faster to the individual (e.g., audio or video appears more normal).

CBT (Computer-based training) – an all-encompassing term used to describe any computer-delivered training, including CD-ROM, the Internet and Intranets. Some people use the term CBT to refer only to old-time text-only training. Sometimes referred to as Computer-assisted instruction (CAI), CBT is asynchronous learning.

CD-ROM assessment – an assessment or survey that can be accessed and completed by using a CD-ROM launched through a company's intranet. CD-ROM based assessments also can be used on a desktop stand-alone computer if the assessment is a self-assessment for the benefit of the trainee only. Alternatively, a CD-ROM-based survey can be printed (if the CD-ROM has a print capability) and used as a paper-based survey.

Chat room – a real-time text-based conversation with other learners over the Internet. Whatever a user types is displayed on the other users' screens as it is being typed.

C-Learning (sometimes referred to as Instruction-Lead Training [ILT]) – classroom learning; the traditional form of learning, where learners attend class at a specific location, at a set time and with an instructor.

Desktop training – any training delivered by computer at one's desk.

Desktop video conferencing – a real-time conference using live pictures among two or more people on a network that communicate via computer.

Distance learning – traditionally refers to a broadcast of a lecture to distant locations, usually through video presentations. (Also see IDL).

E-learning – the learning byproducts from the marriage of the Internet and education. The Internet has transformed the way education occurs and creates new ways of learning.

EPSS (electronic program support system) – an electronic system that provides integrated, on-demand access to information, advice, learning experiences and tools. In essence, the computer is providing coaching support.

Extranet – networks on the Internet dedicated to business communications between a vendor and its suppliers, customers or dealers. An example would be having clients log onto a section of the AchieveGlobal web site to access training online.

File server – a computer running a network operating system that enables other computers to access its files (e.g., a training department has a file server that stores the actual CBT materials participants access).

Firewall – a security barrier between a company Intranet and the larger Internet to protect systems from viruses and other unwanted digital intrusions.

Floor control – a feature in a synchronous learning environment that allows one person to know what is going on with all the participants. The person with floor control can look at other learners' screens, control the whiteboard and run the class. The learning advisor is typically the one with floor control, but it can be transferred to other learners.

Handraising – a function in a synchronous learning environment that allows learners to notify the instructor that they have a question by pressing a hand-like icon on the screen.

HTML (HyperText Markup Language) – the main programming language used for creating the pages you see on the World Wide Web every day.

Hybrid solution – a combination of various media and methods used to provide the best training solution for a given population. AchieveGlobal's PSS MULTIMEDIA*Plus* can be considered a hybrid solution of the traditional classroom version because it combines CBT with classroom.

Hypertext – links embedded in the text of what is presented. The user can simply "click" on a word or concept, and additional information is provided. Hypermedia is hypertext with added features for audio and video.

IDL (Interactive Distance Learning) – a real-time learning event where people in different locations can communicate with each other. Videoconferencing, audio conferencing or any live computer conferencing (e.g., chat rooms) are all examples of IDL.

Instructor Led Training (ILT) – any training where an instructor is leading the training in real time with participants. Both classroom training and interactive distance learning are examples of ILT. ILT is synchronous learning, in that everyone involved is interacting at the same time.

Interactive training – an umbrella term that can include classroom or computer-based training where participants can interact with others or with the computer (e.g., the computer provides some options, the participant makes a response, the computer responds accordingly, etc.).

Interactive video teleconferencing – a two-way video and audio or one-way video multi-site meeting usually transmitted over digital LAN lines or over a satellite line. Response keypads and two-way audio are often used to provide the interactive link back to the originating site.

Interactive web-based conferencing – learners are connected through collaborative online software that allows them to participate in synchronous meetings from their desktops or laptops.

Interface design – the overall look and feel of the CBT program.

Intranet – the use of the Internet and Internet-type software for subsystems of computing for private organizations and individuals.

Java – a programming language that allows the developer to create small applications (called applets) that control specific aspects of a web-based training program, such as creating interactive animations.

JITT (just-in-time training) – training available when the learner wants or needs it, such as training that is readily available on the person's computer (e.g., CD-ROM, web-based training) or other self-study material.

LAN (local area network) – the network is generally located in one immediate area, like a building

or a company campus. **WAN** stands for wide area network, which means the network is spread out over two or more distant locations. WAN requires long distance data lines.

Learning Management System (LMS) – a tool for both learners and instructors that assists in managing the entire learning process. An LMS takes over time-consuming preparatory and administrative tasks such as generating assignments, marking tests, tracking learner progress, producing reports and even taking attendance. An LMS also allows instructors to customize programs. In addition, an LMS can be used to incorporate any type of educational material into a multi-media resource library that can be referenced by learners.

Learning outcomes – a variety of outcomes expected from the training, such as awareness, knowledge and attitude or behavior change.

Message boards and discussion threads – asynchronous communication tools that allow learners to post comments and questions to a common location on the Internet. Learner and learning advisors can read the messages and post responses.

Modem – a device or program that allows a computer to transmit data over telephone lines. The terms "56K pbs" and "28.8K pbs" refer to the speed at which information is transmitted. Web-based training that has audio, video and complex graphics usually requires modem speed at 56K pbs or higher.

Multimedia training – computer-based training that uses two or more media, including text, graphics, animation, audio (sound/music) and video.

Online "office hours" with experts and online tutoring – instructors set up specific times when they are available online to answer questions, provide feedback on assignments, etc.

Plug-in – software typically downloaded from the web to enable the user to read, hear or view something. Examples of plug-ins include the Acrobat Adobe Reader to view documents and RealPlayer audio to listen to sound or music.

Portal – a location on the web that serves as a central source for information and content targeted to a specific group. Serves as a gateway to information and e-learning from a variety of different sources.

Protocol – a standardized way of transmitting information (e.g., for humans, one protocol, or means of communication, is the voice). Files on the Internet are transferred via FTP (File Transfer Protocol).

Self-paced training – training taken at a time and pace determined by the user. Typically used to refer to computer-based training, audio/video self-study courses or instructional books.

Synchronous learning – see asynchronous learning.

Technology-based training (TBT) – while it can include any alternative learning technology, it typically refers to technology training that does not involve a facilitator (such as most CBT).

Virtual Reality (VR) – simulations (usually involving wearing headgear and electronic gloves) that immerse users in a simulated reality that gives the sensation of being in a three-dimensional world. VR training became popular with technical training, such as flight simulations.

WAN (wide area network) – see LAN.

Web streaming – such as audio streaming or video streaming, is the live playback of media files on the web. Usually involves a plug-in or applications program to execute the media file. Seeing a video from one of our programs on a computer is an example of video streaming.

Web-based assessment – an assessment instrument

or tool hosted on a specific web site that people can access and complete on the Internet. Such assessments simplify distribution, data collection and data entry, since printing, mailing and data entry costs are eliminated.

Web-based training (WBT) – a form of computer-based training that uses the Internet or an Intranet to deliver the training. It can be accessed by individuals using different platforms, such as Windows, Mac or UNIX.

Webmaster – the person who handles the day-to-day technical support related to delivering content over the network.

Whiteboard – an application that allows documents and content materials to be posted on the screen for all learners to see. The learning advisor can then make changes to the document or post additional information just like on a traditional blackboard. It is used in a synchronous learning situation. The learners see the information being changed on their screens in real time.

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