

# Corporate Learning Primer: An Industry Overview

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## **Corporate Learning Primer: An Industry Overview**

The landscape of corporate learning has been changing over the last several years at an accelerating pace. This whitepaper aims to provide a clear, brief introduction to the concepts and trends emerging in corporate learning. It is targeted at business professionals and workforce competency decision-makers.

The whitepaper includes discussions of the most prevalent corporate learning formats, as well as introductions to the technologies, standards, theories, and emerging trends in corporate learning.

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#### Learning Formats

#### **Instructor Led**

Facilitated Lab
CBT/WBT
Distance Learning
Simulation
Common Features
Technology Areas
Standards Organizations
Learning Theory
Emerging Trends

## **Instructor Led Lecture**

Instructor Led Lecture is one of the oldest forms of instruction. Someone knowledgeable in the content area lectures to a small to mid sized group of students. At the low end, the instructor has little practical skill and regurgitates canned material without involving the audience. At the high end it can include demonstrations, an engaging instructor, and audience participation. The whole class is exposed to the material at the same pace. Lectures are frequently accompanied by problem sets and quizzes.

#### **Content Considerations:**

- Best suited for low complexity content It can foster awareness but not build skill.
- Best suited for volatile content Instructor can incorporate new developments and current events.
- Often used for stable, high-complexity content.

#### **Audience Considerations:**

- Best suited for small-mid size audiences
- Best suited to audience members that are motivated to learn rather than required to learn.
- Audience participation augments effectiveness.

#### Pros:

- Can be the cheapest to develop
- Format most people are already familiar with
- Face-time with instructors and other participants can be beneficial.

#### Cons:

- Widely variable quality based on instructor qualification and mood
- Limited Retention and Cognition
- Limited or no personal mentoring
- Expensive to deliver when travel is required
- Takes an expert off-line to lead course

#### At A Glance

#### Vendors and Links:

Academic Institutions
Many local vendors
Many internal corporate training departments



Learning Formats Instructor Led

#### **Facilitated Lab**

CBT/WBT Distance Learning Simulation Common Features Technology Areas Standards Organizations **Learning Theory Emerging Trends** 

## **Facilitated Lab**

Facilitated Lab is frequently used in academia to teach physical sciences, and more recently, in business to teach computer hardware and software skills. Someone knowledgeable in the field supervises participants as they get hands-on experience. Students usually have to keep pace with the group and perform pre-determined exercises, but opportunities for self-directed learning are often included.

#### **Content Considerations:**

- Best suited for skills-based content Allows hands-on learning.
- Well suited for computer hardware and software, physical sciences

#### Audience Considerations:

- Best for small target audiences
- Verifying prerequisite skill level is important

#### Pros:

- Provides good, hands-on experience
- Learners can self-direct and explore
- Often incorporates team exercises
- Many incidental learning opportunities

#### Cons:

- Expensive to deliver
- Can be expensive to develop
- Lab environment can be dangerous
- Supporting equipment can require maintenance
- Difficult to move and set up lab environment, so participant travel is often required

#### At A Glance

Learner Paced Learner Located Learner Scheduled Learner Directed Verifies Competency Retention & Cognition

70-90% Delivery Cost per Seat Hour per Person \$30 - \$900 Development Cost per Seat Hour (\$000) \$1 - \$50

#### Vendors and Links:

Academic Institutions Learning Tree CompuMaster

www.LearningTree.com www.CompuMaster.com



Learning Formats Instructor Led Lecture Facilitated Lab

**CBT/WBT** Distance Learning

Simulation Common Features **Technology Areas** Standards Organizations Learning Theory **Emerging Trends** 

## Computer Based Training/Web Based Training

Computer Based Training is the most traditional and widespread form of eLearning. It consists of instructional reference materials presented statically, but in an electronic format. At the low end, it is just pages of text, indexed and hyperlinked. At the high end it can include richly presented graphics and video. The learner can browse the material in a linear way or can self-direct. Online quizzes are a common feature. Traditionally delivered on CD-ROM, it is increasingly delivered over the Web.

#### **Content Considerations:**

- Best suited for low complexity content It can foster awareness but not build skill.
- Best suited for stable content Updating graphics and media can be costly.

## Audience Considerations:

- Best suited for mid-large size target audiences
- Computer access and computer skill is required
- Web Access may be required

#### Pros:

- Low to no delivery cost
- Low to no travel cost
- Learner paced and directed
- Many Authoring tools are available
- Enterprise student tracking available

#### Cons:

- Widely variable quality
- Limited Retention and Cognition
- No personal Mentoring
- High drop-out rates

#### At A Glance

Learner Paced Learner Located Learner Scheduled Learner Directed Verifies Competency

Retention & Cognition

\$0 - \$10

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10-30%

Delivery Cost per Seat Hour per Person Development Cost per Seat Hour (\$000) \$1 - \$50

#### **Vendors and Links:**

SmartForce DigitalThink SkillSoft

www.SmartForce.com www.DigitalThink.com www.SkillSoft.com



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## **Distance Learning / Webcast**

Also called Classroom at a Distance, Distance learning essentially leverages technology to create an Instructor Led Lecture spanning multiple locations via the Web. At the low end, it involves simply streaming a lecture to multiple participants, much like closed-circuit television. The better platforms allow synchronized presentation slides and support features like virtual hand-raising. Chat and message boards are also frequently used.

#### **Content Considerations:**

- Same as Instructor Led Lecture
- Webcast security can be an issue for sensitive or proprietary information

#### Audience Considerations:

- Same as Instructor Led Lecture
- Lack of physical presence makes it harder to keep audience engaged
- Global reach means cultural and language differences must be considered

#### Pros:

- Same as Instructor Led Lecture
- Can be recorded for reference by participants or non-interactive reuse
- Can reach very large audiences
- Reduces or eliminates travel expenses

#### Cons:

- Same as Instructor Led Lecture
- Generally requires very high bandwidth
- Travel expense savings may be offset by higher infrastructure expenditures

#### At A Glance

Learner Paced
Learner Located
Learner Scheduled
Learner Directed
Verifies Competency
Retention & Cognition



Delivery Cost per Seat Hour Per Person \$30 - \$200 Development Cost per Seat Hour (\$000) \$5 - \$40

## Vendors and Links:

Caliber Learning Webex Mentergy BlackBoard www.Caliber.com www.Webex.com http://www.learnlinc.com www.BlackBoard.com



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## **Simulation**

Simulation is a relatively new form of learning. The learner is immersed in a simulated environment and challenged to execute the same kind of decisions and business functions that he or she will encounter on the job. Theater-based simulation places the learner in scenarios with human actors and other participants. Technology-based simulation typically presents the environment on a computer screen. At the low end, the learner may make only a few decisions and see the outcomes. High-end simulations can be incredibly sophisticated with hundreds of decision points and simulated characters.

#### **Content Considerations:**

- Best suited to areas where mistakes in real life are very expensive
- Well suited for sophisticated, skills-based content
- Best suited for teaching crisp, well-defined financial and business topics
- Well suited for soft skills like negotiation

#### Audience Considerations:

- Best suited for mid to large audiences
- Computer skills and web access are often a requirement
- Powerful multimedia computer resources are often a requirement

#### Pros:

- Can provide highest retention and cognition
- Can enable strategic change and improve business performance
- Can contain individually tailored mentoring

## At A Glance

Learner Paced
Learner Located
Learner Scheduled
Learner Directed
Verifies Competency
Retention & Cognition

Retention & Cognition 70-90%

Delivery Cost per Seat Hour per Person \$0 - \$10<sup>1</sup>

Development Cost per Seat Hour (\$000) \$40 - \$200

<sup>1</sup> - Assumes computer-based delivery. Full-enclosure flight simulators can be very expensive to deliver.

#### Cons:

- One of the most expensive options to develop
- Many vendors mislabel their products as simulations
- Computer-based simulations can't achieve highest levels of effectiveness in situations where human interaction and body language are required.

## Vendors and Links:

Knowledge Dynamics Strategic Management Group

Accenture Cognitive Arts

www.KnowledgeDynamics.com

www.smgnet.com www.Accenture.com www.CognitiveArts.com



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#### Learning Formats

#### **Common Features**

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## **Common Features**

Several mainstream features are often integrated into eLearning scenarios to improve effectiveness. Many of these common features are aimed at facilitating synchronous and asynchronous collaboration. Many of the features are offered for free, and in some cases as open source.

#### Text / Audio / Video Chat:

Chat allows participants to converse with each other or an instructor in real time, bringing a team dynamic into web based learning scenarios. Chat sessions can be one-on-one or with a group. Some applications support only text chat, such as AOL Instant Messenger. Microsoft NetMeeting supports AV chatting as well as application sharing.

#### Threaded Discussion:

Threaded Discussion allows individual to post a question or a comment. Other participants and experts can reply to the post. Each post is displayed with its replies indented beneath it in a tree structure. This creates a searchable, archivable record of user comments, questions, and answers. Users are supposed to search the archive for answers before posting a question, but frequently this point of etiquette is ignored.

In learning, the threaded discussion is a good forum to identify problem areas and address them through enhancements to the learning application.

#### **Quizzing:**

Quizzing is a simple way to determine whether the learner retained any of the material. Quizzes are usually multiple-choice, True/False, or simple fill in the blank to allow for instantaneous automated grading. They can allow essay questions, but then human grading is required.

#### email:

email is frequently used in eLearning scenarios to distribute course announcements, materials, and syllabi. It is also used for technical and content support.

#### FAQ:

Frequently Asked Question lists are intended to consolidate answers to the most common user questions as a front-line method of user support.

#### Vendors and Links:

eRoom www.eRoom.com

Microsoft NetMeeting http://www.microsoft.com/windows/netmeeting/

Webex www.Webex.com

AOL IM http://www.aol.com/aim/home.html

Open Source <a href="http://opensource.org/">http://opensource.org/</a>



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## **Relevant Technologies**

Many technologies are involved in learning development efforts. Learning applications have the same data integrity, performance, and integration requirements of many production systems, in addition to the media and design issues that are specific to learning. Unlike production systems, the success criteria for learning development efforts are frequently very subjective.

#### <u>Video – Scripting, Shooting, Editing, Digitizing, Streaming:</u>

Video is one of the most engaging mediums for delivering information to a viewer because it involves multiple senses. Video is also a complex and costly medium to develop, requiring many different types of creative and technical expertise in addition to expensive hardware and software. Video produced for Webbased or CDROM- based distribution is even more so because of the added difficulties associated with bandwidth concerns, viewer applications, and accessibility issues.

Scripting, shooting, and editing are common to any video production effort. Video for Web-based or CDROM- based distribution must be Digitized, or converted from analog to digital, so that it can be stored for display on a computer. Video for Web-based distribution must also be Streamed from a server to the end user (ie the video is played as it is being downloaded and then discarded, rather than being downloaded all at once and the played). All of this requires massive storage space. 30 seconds of uncompressed, high-quality video can top 300Mb.

#### **Learning Design:**

Learning design is at the heart of any learning development effort. It involves identifying learning objectives, soliciting knowledge from experts, storyboarding the learning interaction, prototyping, and iterating the design based on user feedback.

Learning design techniques are numerous and varied. Their quality is very subjective and all approaches have their supporters and detractors, making learning design in many cases more of an art than a science.

#### **Animation and Authoring:**

Many tools are available for creating interactive multi-media content. These tools are used in mainstream business and marketing applications and learning applications. The tools are available at price points ranging from free to hundreds of thousands of dollars.



#### Learning Management Systems:

Learning Management Systems facilitate the tracking and management of users, training courses, accounting and approval, and progress and performance data. Typically a user logs into the company LMS to browse the available course catalog and make selections. The selections are routed to the employee's supervisor for approval. Billing information for the selections is tracked and debited from the appropriate accounts. When the student has completed the course the database is updated to show the user's completed course history. If the course is performance-based with simulation components or a quiz, the student's performance data is tracked as well. The LMS market is in a state of consolidation.

#### **Artificial Intelligence:**

Artificial intelligence is frequently used to add sophisticated behaviors and interactions to training applications. Some of the technology areas include rules-based systems, expert systems, neural networks, genetic algorithms, natural language processing, text-to-speech, and fuzzy logic.

Al is often used as the basis for intelligent characters that interact with the learner in sophisticated ways. These characters can play the roles of peers, mentors, reports, or even adversaries, to make the learning a more memorable, engaging experience. Al techniques are also used to simulate things like competitor behavior and changing market conditions.

#### Vendors and Links:

Knowledge Dynamics <u>www.KnowledgeDynamics.com</u>

Macromediawww.Macromedia.comAdobewww.Adobe.comSkillSoftwww.SkillSoft.com

Academic Institutions http://www.atl.ualberta.ca/articles/idesign/activel.cfm

Docent <u>www.Docent.com</u>



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## **Standards Organizations**

Learning Theory Emerging Trends In any technology, standards increase efficiency and interoperability. The pervasive growth of eLearning is giving rise to many, sometimes competing standards. Some address management and administration functions, others address reuse of training content. eLearning standards are in a state of flux and will be for some time. When adopting a standard, flexibility and the ability switch to another standard should be considered.

#### Vendors and Links:

IEEE Learning Technology Standards Committee (LTSC) P1484 http://ltsc.ieee.org/

Advanced Distributed Learning (ADL) Initiative <a href="http://www.adlnet.org/">http://www.adlnet.org/</a>

IMS (Instructional Management System) Global Learning Consortium <a href="http://www.imsproject.org/">http://www.imsproject.org/</a>

AICC: The Aviation Industry CBT (Computer-Based Training) Committee <a href="http://www.aicc.org/">http://www.aicc.org/</a>

PROMETEUS: PROmoting Multimedia Access to Education and Training in EUropean Society <a href="http://www.prometeus.org/">http://www.prometeus.org/</a>

Advanced Distributed Learning (ADL) Initiative - Shareable Courseware Object Reference Model (SCORM) <a href="http://www.adlnet.org/Scorm/scorm">http://www.adlnet.org/Scorm/scorm</a> index.cfm

Microsoft eLearning http://www.microsoft.com/elearn



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## **Learning Theory**

Many years of study and observation into human cognition and learning theory have led up to modern approaches to learning. Two of the most often cited theories are Bloom's Taxonomy and Kirkpatrick's 4 Levels of Evaluation.

#### Bloom's Taxonomy:

Benjamin Bloom led the development of a hierarchy of educational objectives, generally referred to as Bloom's Taxonomy. It attempts to divide cognitive objectives into 6 levels ranging from the simplest to the most advanced.

#### Knowledge (memorization)

- Facts, conventions, definitions, jargon, classifications, criteria
- Recall of methods, procedures, abstractions, principles, theories
- Correlates with memorization skills but not problem-solving skills
- Necessary but not sufficient for solving non-trivial problems

#### Comprehension (understanding)

- Understand and grasp the meaning of knowledge
- Speak or write about knowledge in alternative ways (paraphrase)
- Articulate connections between different items of knowledge
- Interpretation of information, such as extrapolation of trends
- Necessary but not sufficient for solving non-trivial problems

#### Application (using)

- Use of abstract ideas in particular concrete situations
- Remembering and applying technical ideas, principles, theories
- Solving non-trivial problems that have a single solution

#### Analysis (taking apart)

- Breaking down a complex problem into parts
- Solving each part using defined principles, theories, constraints, etc.
- Determining connections and interactions between parts
- Analyzing a system, method, or product

#### Synthesis (putting together)

- Putting many parts together to make a new whole
- A professional activity referred to as design
- An open-ended process with more than one correct answer (many acceptable answers)
- Design of a new product or process

#### Evaluation (judging)

- Making a judgment about a solution, design, report, or material
- May involve internal or external criteria
- Internal criteria: best models, logical, free of errors



- External criteria: environmental, legal, economic, sociological
- Selection from a set of a complex alternatives using subjective or compromised criteria
- Evaluation of legacy systems or processes for upgrade

#### Kirkpatrick's 4 Levels:

One of the leading approaches to evaluating training programs was developed by Donald Kirkpatrick, Consultant and Professor at the University of Wisconsin. It consists of a four-level model to gauge the effectiveness of a training program.

- Level I (Reaction) measures a participant's satisfaction of the course and is usually conducted through surveys.
- Level II (Learning) assess the amount of information the participant learned. It also measures
  satisfaction of learning objectives; i.e., were participants able to perform at the stated levels of the
  objectives. This measurement is usually obtained through some sort of criterion-based evaluation
  such as a test.
- Level III (Behavior) is used to measure long-term effects (6 weeks, 6 months, or longer), by assessing behavioral changes, and specifically performance improvements, of individuals in the workplace. Several evaluation methods are used, such as interviews, observations, or evaluation.
- Level IV (Results) evaluates the organizational results that occurred because the student attended the course, specifically, improved organizational performance, such as cost reductions or increases in profits.

#### Vendors and Links:

Blooms info Kirkpatrick's book http://www.tecweb.org/eddevel/edtech/blooms.html http://www.amazon.com/exec/obidos/ASIN/1576750426



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## **Emerging Trends**

The eLearning market is still young and developing rapidly. Some of the trends and practices that are being adopted are described below.

#### **Library Licensing:**

Many companies, especially those with thousands or more employees, are simplifying their learning needs by licensing entire libraries of eLearning titles for a fixed fee. The typical deal has a company licensing all or a large number of a provider's library for a set number of seats for a fixed period of time. Employees can take as many or as few courses as they desire. Vendors promote these deals by stating that the volume purchase results in fees of only a few dollars per seat hour. In practice however, each employee takes only a fraction of the available courses, so the real cost per seat-hour is much higher.

#### **Learning Service Provider:**

Some companies are now beginning to outsource significant portions, or in some cases all, of their learning functions to Learning Service Providers. This includes tracking course histories, performance, and development requirements of all employees, as well as acquisition of training products, and scheduling, approval, and billing functions.

#### **Educommerce:**

Educommerce is the practice of using product training as a marketing tool, offering it for free to customers in order to boost sales of core products. Companies are recognizing that availability of training can be a significant factor in a customer's decision to purchase one vendor's products over another's. Manufacturers of complex products are adopting this practice in increasing numbers.

#### Hybrid Programs (aka Blended Learning)

Programs incorporating online and offline elements are gaining acceptance. These are especially important where human interaction and networking are important parts of the learning, such as in executive education.

#### **Vendors and Links:**

Desai www.Desai.com
Powered www.Powered.com
DigitalThink www.DigitalThink.com
SkillSoft www.SkillSoft.com
Smartforce www.SmartForce.com
UNext www.UNext.com
PeopleSoft www.PeopleSoft.com

