



LEARN



DISTRIBUTE



ADVANCE

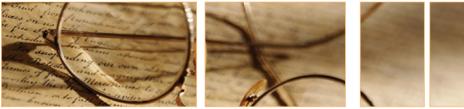


ADVANCED DISTRIBUTED LEARNING

The vision of the ADL Initiative is to provide access to the highest-quality learning and performance aiding that can be tailored to individual needs.

ABOUT ADL

Advanced Distributed Learning (ADL) is a collaborative effort to harness the power of information technologies to modernize structured learning. ADL employs a structured, adaptive, collaborative effort between the public and private sectors to develop the standards, tools and content for the learning environment of the future.



HISTORY

The increased rate of deployments in recent years of the Department of Defense's (DoD) forces, which often involve rapid, unplanned movements to locations around the world, highlighted the need to provide training on demand for individuals and units deployed worldwide. Accordingly, because of more demanding deployment criteria and other time-sensitive constraints, the DoD recognized that the traditional training framework of "right time, right place" learning, with its use of set times and places, was not effectively addressing training requirements.

In response to the 1997 Quadrennial Defense Review (QDR), the DoD developed a department-wide strategy to use learning and information technologies to modernize education and training. The initial effort in that development was ADL. Its intent was to set forth a new framework to provide DoD personnel access to high quality education and training, tailored to individual needs and delivered cost effectively, whenever and wherever required.

In April 1999, the DoD created a Strategic Plan to guide and expand distributed learning initiatives. Executive Order 13111 tasked the DoD in providing guidance to Defense agencies and advising civilian agencies in developing and implementing collaborative distance learning standards. DoD's strategic plan defined ADL as a way to leverage the power of computer, information and communication technologies through the use of common standards.

The Office of the Secretary of Defense's (OSD) Training Transformation (T2) effort, initiated in March 2002, further emphasized the use of ADL programs as critical to achieving the DoD's training and transformation goals, assuring that training is readily available to both active and reserve military personnel, regardless of time and place. The T2 strategy and T2 implementation plan were intended to reengineer training; enhance service members' skills; and provide capabilities-based training to support service, joint, interagency, intergovernmental and multinational operations.



ADL STRATEGY

The adoption of ADL is evolving rapidly throughout the e-learning community and is changing the way we create, deliver and manage learning content. The National Guard has developed a communications backbone with distributive training classrooms in all 50 states and territories to reach National Guard personnel where they live. The U.S. Military Services have already converted thousands of courses to ADL and are undergoing a training revolution to provide the requisite knowledge and skills to personnel in their homes, classrooms, on Personal Digital Assistants (PDAs) and in operational environments around the world.

The ADL strategy is designed to:

- Work closely with industry, government and academia to promote common, open, international specifications and standards that enable reuse and interoperability of learning content
- Promote widespread collaboration that satisfies common needs
- Enhance performance with emerging learning technologies
- Promote a coordinated implementation process with incentives for organizational and cultural change.

This revolution is made possible by the leadership across industry and academia in developing tools that enable the design, development, delivery and management of high-quality and adaptable education and training, anytime and anywhere it is needed.

The ADL Initiative provides leadership for the learning community in the following ways:

- Offering implementation guidance for the design and development of efficient, cost-effective and global distributed learning
- Encouraging collaboration regarding the practical application of learning technologies
- Advancing the state-of-the-art in the science and technology associated with individual and collective education, training, performance and assessment
- Providing global online forums that enable large-scale exchange of information, tools and resources through ADLNet.org.



TECHNOLOGIES

ADL Technologies help the ADL Initiative create new markets for training materials, reduce the cost of development and increase potential return on

investment. Platform neutrality and software reusability are considered essential for the sustained investments necessary to create and grow the dynamic ADL environment.

The following are several technologies the ADL Initiative is currently pursuing:



SCORM®

ADL is evolving the development and implementation of e-learning specifications and guidelines including the Sharable Content Object Reference Model (SCORM), a software model that defines the interrelationship of course components, data models and protocols so that learning content “objects” are sharable across systems that conform with the same model. Through SCORM, ADL targets Web technologies as the primary medium for delivering structured learning. It does so under the assumption that anything that can be delivered by Web technologies can easily be used in other instructional settings that make fewer demands on accessibility and network communications. This approach eliminates much of the development work once needed to adapt to the latest technology platform because Web technologies are becoming the universal media for delivery. By building upon existing Web standards and infrastructures, SCORM developers are free to focus on effective learning strategies.



CORDRA™

Content Object Repository Discovery and Registration/Resolution Architecture (CORDRA) is an open, standards-based model for how to design and implement software systems for the purposes of discovery, sharing and reuse of learning content through interoperable federations of learning content repositories. Designed to be an

enabling model to bridge the worlds of learning content management and delivery, and content repositories and digital libraries, CORDRA aims to identify and specify (not develop) technologies and existing interoperability standards that can be combined into a reference model used to enable a learning content infrastructure.



PERFORMANCE AIDING

High levels of performance will be demanded in the future workforce, and today's organizations and agencies must continuously develop talent through a variety of learning methods and opportunities to meet these demands. Since many employers may be unable to afford the costs and employees may be unable to dedicate the time required to attend traditional, offsite training programs, online instruction becomes an attractive and efficient solution. On-demand instruction and performance aiding are two strategies for workplace learning that can address the demands of a high-performance workplace.



REPOSITORIES

Realizing their importance to distributed learning, the ADL Initiative has sponsored a number of efforts to facilitate better understanding of repositories and repository systems. The Academic ADL Co-Lab has an active research and development initiative focused on understanding and influencing repository systems and products for academic purposes. The Joint ADL Co-Lab hosted the DoD Repositories Working Group, focused on defining requirements for repositories and systems. The Group then developed and documented a set of learning repositories use cases, or user scenarios.



INTELLIGENT TUTORING SYSTEMS

Intelligent tutoring systems (ITSs) are computer software systems that seek to mimic the methods and dialog of natural human tutors, to generate instructional interactions in real time and on demand—as required by individual students. Implementations of ITSs incorporate computational mechanisms and knowledge representations in the fields of artificial intelligence, computational linguistics, and cognitive science. The primary developmental goals of the ITSs community are aligned with ADL's long-term vision: To generate, assemble and sequence content that dynamically adapts to the learner to optimize learning.



GAMES

Games for distributed learning are complex systems with three major components:

- Activities with formal rules in which players engage in artificial conflict with variable and quantifiable outcomes and both game play and learning objectives
- A narrative which provides cues, context and relevance for the activities and
- A simulation which represents the learning space necessary to support the activities and narrative.



SIMULATIONS

A simulation is a representation of a system presented over time. Simulations have advantages over real operational systems in training, including: elimination of catastrophic consequences of error; reduction of physical danger; cost containment; elimination of non-salient attributes; “re-play” possibilities; compression or expansion of time; and iterative manipulation of variables for evolving design and data collection.



IMPLEMENTING ADL

Implementing the ADL Initiative requires collaboration within the Department of Defense (DoD) and the federal government at large as well as collaboration with industry,

academia, state and local entities. The DoD is taking steps to establish a cost-effective distributed learning environment that is consistent across the military services and all other DoD organizations. Many university and business training organizations have similar interests. ADL partnerships between the federal government, private-sector technology suppliers, and the broader education and training community will be the means for formulating voluntary guidelines that will address common needs. Brief summaries of the Co-Lab Network members follow. Additional information can be accessed through ADLNet.org.

ADL CO-LABS

In addition to the collaboration with government, education and technology sectors, ADL has also developed a network of Co-Labs to further promote the creation of the optimal learning environment for the future. The ADL Co-Laboratory Network is comprised of the central ADL Co-Lab plus three other Co-labs. While each uniquely contributes to the evolution of ADL in specialized areas, all share research, subject matter expertise, common tools and learning content. Each ADL Co-Lab facilitates an open collaborative environment for sharing learning technology research, development and assessments. In addition to the Co-Lab Network, ADL Partnership Labs established outside of the United States extend ADL's reach.



The [Alexandria ADL Co-Lab](#) is ADL's central organization for guiding, coordinating and integrating the operations of the ADL Co-Lab Network and operates under the direction of the Office of the Under Secretary of Defense (OSD). Located just outside Washington, DC, the Alexandria ADL Co-Lab serves as a clearinghouse across organizational boundaries to coordinate and lead the systematic development and refinement of the future learning environment.



The [Academic ADL Co-Lab](#) serves as the focal point for academia in promoting high quality, reusable content for distributed learning. It also serves as the academic link to test, evaluate and demonstrate ADL-compliant tools and next generation technologies to enhance teaching and learning.



The [Joint ADL Co-Lab](#) integrates instruction and technology to meet the military's training requirements. The implementation of ADL is promoted through research, development and consulting services for the DoD. The Joint ADL Co-Lab also develops guidelines, tools, sample methodologies and strategies for implementing ADL in a military environment.



The [Workforce ADL Co-Lab](#) is the hub of ADL implementation in industry. It serves as the facilitator of the development and integration of ADL technologies in industry to enhance the learning and training of the workforce of the future. The Workforce ADL Co-Lab is the mechanism that promotes adoption of ADL technologies in industry through education, technical training and accessibility to solutions.

ADDITIONAL SUPPORTING FACILITIES

The ADL Job Performance Technology Center's (JPTC) mission is to advance research and development in, and the implementation of, job performance technologies across the Federal Government, guided by the work of the ADL Initiative and in support of the T2 Initiative. The JPTC promotes research into the return on investment of job performance technologies, serves as an "honest broker" for federal government and DoD requirements gathering, and acts as a collaborative point and working lab in researching and creating demonstrations of job performance tools.

Serving as the technical and outreach arm of the ADL Initiative, the [ADL Technology Center](#) is home of the SCORM and the ADL Technical, Web and Outreach Teams. With ADL Leadership support, the ADL Technical, Web and Outreach Teams strive to enable ADL's Vision of providing access to the highest quality education and training, tailored to individual needs, delivered cost-effectively anywhere and anytime. The ADL Technical Team is responsible for the ongoing development and maintenance of ADL Technologies including the SCORM and CORDRA.

The ADL Initiative also has an established working relationship with the North Atlantic Treaty Organization (NATO) Training Group Working Group on Individual Training and Education Developments (IT/ED). The NATO Training Group Working Group is a Forum for bilateral and multinational coordination on individual training, technology and education developments within the NATO Training Group. It is supported by functional experts from NATO and Partnership for Peace (PfP) memberships.



For more detailed information on the ADL Initiative and to keep abreast of new technology developments, partnership opportunities and implementations, please visit the ADL Web site at www.ADLNet.org.