The Vision of Advanced Distributed Learning technology and Future Capabilities

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ABSTRACT

Advanced distributed learning (ADL) expands new technologies to make learning and performance support available to service members. The main initial aim of the ADL is to supply access to high quality education and training tailored to individual needs, expand and deliver cost-effectively, high accessibility. The standards bodies are collaborating on the new Sharable Courseware Object Reference Model (SCORM) specifications which prepare the foundation for organizations to use learning technologies for making and performing in the future learning environment. In this regard, this paper will discuss ADL technologies management structure, and the acculturation necessary for successful implementation of these technologies and services. The main contribution of this paper is to examine the ADL technology from different views including their future capability , purpose of ADL, global interest in ADL initiatives and advanced distributed learning Management.

Key words : The ADL vision, Advanced Distributed Learning Management, Future capabilities of ADL

1. INTRODUCTION

Throughout the years, Advanced Distributed Learning (ADL) has become an important part of DRESMARA's teaching and education programs[1]. The Advanced Distributed Learning (ADL) Initiative was established by the Office of the Undersecretary of Defense for Personnel and Readiness (OUSD(P&R)) in 1997. Its purpose was to assist the military Services in making "learning" (education, training, and performance/decision aiding) available on-demand, anytime and anywhere[2]. Although a variety of research efforts develop and apply technologies toward improving human performance, it is seldom that resulting demonstrations and deliverables leverage or generalize beyond specific applications, missions, or components[3].

The Department of Defense (DoD) Office of the Under Secretary of Defense for Personnel and Readiness (OUSD P&R) supervise the ADL Initiative. The vision of the ADL is to prepare access to the highest-quality learning and performance contribution that can be tailored to individual requirements and delivered cost-effectively, at the right time and in the right place. The distance education participants applied the Blackboard course management system to access the course manual, assignments and the course discussion board. ADL community and their vision for the future will benefit the further expansions. In this way, this paper has briefly highlighted the needs for the LMS,LON and the ADL vision. Generally, ADL is a herald of future learning processes and has appropriate capabilities.

2. THE ADL VISION

The four basic research topics that were recognized necessary to enable the ADL vision of a readily available instructional environment to support in anytime, anyplace, by anyone, anything learning were:
• Authoring Tools.
• Intelligent Computer-Aided Instruction.
• Distributed Simulations.
• Dynamic Learning Management[3].

The ADL initiative is based on the view of future education, training, and performance aiding explained in Figure 1. As the figure offers, this view, or 'vision', keys on three main components:(1) a global information infrastructure, with registered repositories populated by reusable instructional objects;(2) a server, which discovers, locates and then assembles instructional objects into education, training, and/ or performance aiding materials tailored to user needs; and (3) devices that serve as personal learning associates on which the presented[4].
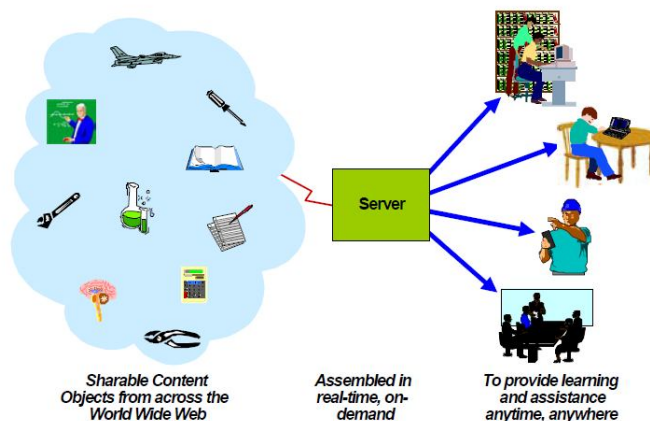

Figure 1: An Advanced Distributed Learning Future[4]

In the near future, we may certainly find students interacting with ITSs (or similar e-learning technologies) in a manner akin to that found today in face-to-face human tutoring[5]. The development of the use of technology in military training has increased tremendously, either for stand-alone delivery or in blend with other forms of instruction[6].

3. PURPOSE OF ADL

The ADL initiative through its training evaluation team, pays close attention to the evaluation literature, tracking and coding available empirical studies on the effectiveness of online instruction[7]. The purpose of ADL is to ensure access to high-quality education and training materials that can be tailored to individual learner requirements and made available whenever and wherever they are required. This initiative is designed to accelerate large-scale improvement of dynamic and cost-effective learning software and to stimulate an efficient market for these products in order to meet the education and training needs of the US military and workforce in the 21st century[8]. Another key ADL aim was to avoid requiring the use of any single, standardized computer configuration, operating system, browser, authoring tool, or programming language. Such a requirement would severely limit developer efforts to expand the state of the art[9].

4. GLOBAL INTEREST IN ADL INITIATIVES

Since its inception in November 1998, the Advanced Distributed Learning Initiative has been instrumental in empowering the computer-based training industry globally in the large-scale development, implementation, and assessment of interoperable and reusable learning systems. Global interest in ADL is evident. Starting with the United Kingdom in 2002, several nations have volunteered to champion the ADL cause. Canada, Korea, Australia, Norway, Romania, and a consortium of 14 Latin American and Caribbean nations stepped forward as international partners of the ADL

Initiative. Some of these efforts translate the ADL documentation into their national languages, others develop internal compliance test centers, and others share content. The most current addition to the network of international partnership labs is the German Workforce ADL Partnership Laboratory, formed in October 2009[10].

5. LEARNING OBJECTS NETWORK, INC.

Learning Objects Network (LON) is an Internet infrastructure company enabling secure commerce in high value digital content. LON is implementing secure networks for defense of agencies and their key suppliers that are fully compatible with the ADL SCORM specifications. This includes a commercial learning object registry service that enables content to be easily searched, located, and retrieved and is based on the standard Digital Object Identifier technology. LON has been working with the ADL initiative of the U.S. Department of Defense through a Cooperative Research and Development Agreement (CRADA) to design and build a distributed network of SCORM compatible with repositories and search capabilities. Through a strategic partnership with the publishing industry's trade association, the Association of American Publishers (AAP), LON is assisting major publishers in the commercial adoption of SCORM-conformant learning objects. Learning Objects Network's educational and consulting services assist companies in assessing the impact of SCORM on their businesses and in achieving SCORM conformance[11].

6. LEARNING MANAGEMENT SYSTEMS (LMSs)

LMSs are used primarily in the business and government training community. This is ingrained into the minds of users to the point where many systems that technically fit into one of the other categories are often termed an LMS by training community users[12].
Also LMSs typically register, track, and deliver content to learners; report on learner progress, assessment results, and skill gaps for instructors; enroll learners; and provide security
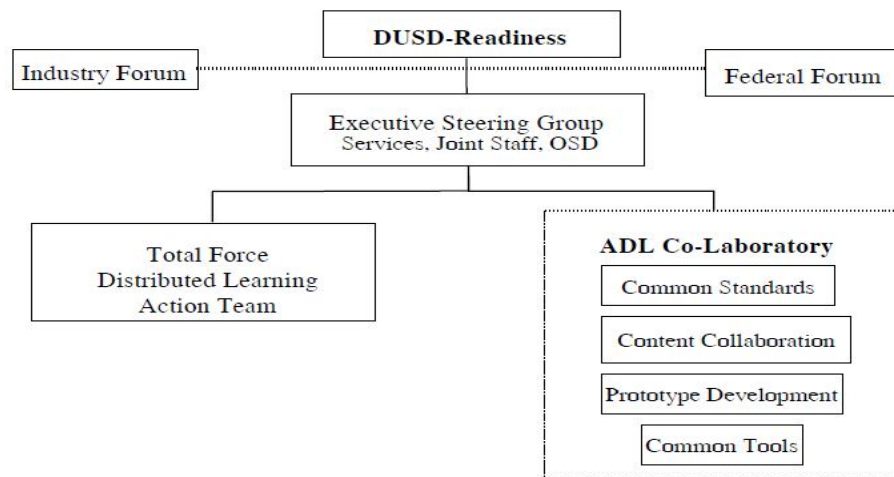

Figure 2. Advanced Distributed Learning Management Structure[14]

and manage user access for administrators. LMSs Normally handle courses by multiple publishers and providers. They are similar to Learning Content Management Systems (LCMS) that are particularly designed to handle content objects in modular form for learner use[13].

7. ADVANCED DISTRIBUTED LEARNING MANAGEMENT STRUCTURE

DUSD(R) is working with the office of the Secretary of defense, services, Joint Staff, and DoD components to establish a management forum for coordination of advanced distributed learning programs within the department. Figure 2 illustrates a three-tier structure to organize and coordinate technical, programmatic, and policy considerations associated with the use of advanced distributed learning technologies in the department. This configuration will guide the improvement and implementation of advanced distributed learning policies and programs[14].

8. CONCLUSION

ADL is expected to improve learning and readiness. ADL is being broadly performed within the DoD. This paper summarizes the ADL Technology and future direction of a research effort on the next generation. ADL employs a structured, adaptive, collaborative attempt between the public and private parts to improve the standards, tools and learning content for the learning environment of the future. The goal of evaluation is to ensure that the ADL solution is useful, efficient and continues to address the business goals.

ADL currently ideas to transition stewardship of SCORM to another organization. The ADL Initiative will continue to preserve SCORM 2004 for the US Department of Defense and will continue to engage in research and development attempts for other advanced learning technologies and standards.

ADL is showing a noticeable impact on training within the U.S. military. Learning objects network and learning management systems and advanced distributed learning management structure and their applications were explained.

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