ADL in Exercises

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Aims:

The success of a training event depends, in part, upon its return on investment, that is, how well it prepares the participants, given the time and available resources. In many exercises, the planning team must allocate significant time to get the training audience up to speed – time that could otherwise be spent on activities that would enhance the learning experience and development of the exercise. This is particularly true in multinational events, given the assortment of participants, their wide ranges of background knowledge and prior experiences.

Automated e-learning courses offer a natural solution for enhancing both the efficiency and effectiveness of an exercise. Clearly, e-learning can support the pre-training phase, helping to orient the training audience more quickly. However, it is also useful during and after the exercise, as just-in-time learning and after-action refresher materials (Fautua, Schatz et al., 2014).

There are three main objectives to operational integration of ADL into exercises:

- Provide e-Learning resources for pre-training, just-in-time learning and for after action purposes.
- Connect e-Learning data with performance data from the execution phase
- Collect lessons identified for further development of the basic concept

Current Context:

While military training frequently involves online learning, most exercises – particularly large, international ones – do not integrate it as a core element. The exception is the U.S. Joint Staff J7's Blended Learning–Training Program, which serves as an exemplar for the blended ADL capabilities in Viking. (see Fautua, Schatz et al., 2014)

Stakeholders:

There are many actors in an exercise – both CAX and LiveEx - including planners, operators, participants, monitors/evaluators, senior management, J6 and content & technology partners.

Any exercise will have a Core Planning Team (CPT), which will probably begin its efforts one to two years in advance of the exercise. The CPT should create an eLearning Working Group, comprised of key stakeholders, representing the ADL Center of the exercise host country, representatives of ADL content and technology partners, and representatives from the exercise core planning team.

The Partnership for Peace Consortium (PfPC) ADL Working Group can serve as a resource for informed user testing of content and platforms. The Regional ADL Initiative (RADLI) and the Nordic Defense Cooperation (NORDEFCO) are also useful regional efforts that can contribute to ADL in exercises.

In the exercise itself, there are OTTMs (Observer, Tracker, Trainer and Monitoring Teams) in the exercise organization that have a direct pedagogical influence on the training exercise and offers important support for the training audience. The role of the observers is to sit with the sections and observe their work, giving feedback and advice. The observers are the main pedagogical instrument for helping the training audience during the exercise. They are experts on all elements of staff work and most of them are experienced officers and civilians from the participating nations.

There may also be a designated ADL evaluator within the EXEVAL-team with a special task to observe how the ADL-effort influences the exercise performance and outcome.

Approach:

The eLearning WG's primary task is to match objectives of eLearning content with the exercise objectives, and to build – if appropriate – tiered menu of learning content. The concept of dividing learning content into Mandatory (L1), Recommended (L2) and a Content Repository (L3) can be used as a basic model, but should be tailored to suit the needs of each exercise.

The universally mandatory course should include an overview of the exercise organization, the basic scenario and a description of the road to crises. The main aim of this L1 course is to familiarize the participants with the exercise organization and the basic scenario allowing them to be better prepared when entering the exercise. The objective is to shorten and make more efficient the on-site WUST [Work-Up Start and Training], which can take several days without ADL pre-training, so is a clear target for efficiency gains and cost savings.

A stand-alone exercise specific instance of the LMS allows for a tailored experience in the exercise, as well as a buffer to support improved cyber security and information assurance.

Micro-learning using mobile devices for easier access promotes just-in-time learning during the exercise. Micro-learning and mobile capability would also support anywhere/anytime delivery at home, travelling to the exercise, in the hotel room or barracks and within the exercise execution area.

A physical ADL-lab at the main exercise site can support participants, primarily targeting the training audience but also others involved in the exercise. This support can take both pedagogical and technical form, as well as offering a number of workstations with the possibility to take courses, primarily the mandatory course(s).

Risks:

- Formalization of ADL's role in the exercise management team
Mitigation: ADL must be an integrated into all exercise phases (pre-training, WUST, execution, evaluation, postex. Ideally, ADL is a part of the core planning team. An e-Learning working sub-group of the CPT should be formed early in the planning process. ADL should work closely with the Exercise Evaluation (EXEVAL) team.

- Communication on availability and value of eLearning for the exercise
Mitigation: Leaders, trainers and trainees must all be targets of strategic ADL communication. It is necessary to assure that the Exercise Guidance, calling messages and the exercise plan clearly state that participants are required to complete mandatory e-Learning before the exercise.

- Learning resource alignment with exercise objectives
Mitigation: eLearning content should be tailored for the exercise and aligned with training objectives and exercise themes. Targeted content for different elements in the exercise can be recommended – manually or via AI tools. Quality trumps quantity when it comes to content. Make the courses modular and as short as possible

- Access to learning content on-demand
Mitigation: Access to the internet should be provided as close to the participants' workstations as possible. Consider micro-learning and mobile access as a core part of the concept and ensure a positive ADL-system user experience.

- Integration of learning analytics with overall exercise evaluation
Mitigation: Make sure ADL is a part of the exercise evaluation effort. The evaluation team should have full and immediate access to the exercise learning analytics dashboard.

Resources Required:

- Secure cloud-based hosting
- LMS – or other player – for hosting eLearning content and managing user profiles
- LRS - for gathering xAPI statements
- Analytics Dashboard solution – to display intuitive visualizations of performance metrics
- xAPI compliant screen responsive (ideally mobile first) eLearning course content

Timeframe:

Planning for operational integration of ADL into an exercise should commence in line with the start of planning for the exercises itself. This should be no less than four months prior to the date of exercise execution, but would ordinarily fall at least a year in advance.

Measurement of learning analytics:

The Experience Application Programming Interface (xAPI) is a technical specification that lets learning technologies better record, aggregate, and analyze learning performance data, particularly across different learning experiences.

Integrating xAPI into older e-learning courses can present a challenge. While premade courses usually already conform to the SCORM specification, they follow different versions of SCORM, are built from assorted authoring tools, and are often deployed on non-xAPI compliant legacy platforms.

The readymade "SCORM to xAPI wrapper" (a JavaScript library developed to automatically convert SCORM basic run-time data into xAPI statements) is an excellent tool for SCORM courses built with contemporary authoring tools. For older courses, implementing the wrapper's functionality requires creative effort, but is entirely achievable. This enables SCORM data, such as learners' test scores and completions, to be collected from varying sources and aggregated into a single Learning Record Store.

To better express meaning in the accumulated data, a visualization dashboard can offer analysis of the aggregated xAPI-conformant data as well as non-xAPI data from the exercise's management system. As such, exercise organizers, and other stakeholders, can trace trainees' performance across different times and technologies – specifically correlating e-learning activities with performance on exercise objectives.

Exercise objectives in the sections and teams generally focus on the completion of tasks. The teams are given certain tasks that have to be completed within a specific time-frame and to a sufficient standard of quality. Each task has to pass several working or coordination groups, as well as decision points, which function as quality controls that can reject or approve the section's plan or order.

In most exercises, at the end of each day, all sections have a debriefing session, which is an orga-nized learning behavior activity for discussion and reflection aimed at improving the section's staff work. These debriefing sessions are usually led by the section commander and one or two observers, who give oral feedback on the section's work. performance in the exercise scenario – and unlocking the potential for deeper insights into the exercise training outcomes. Learning analytics on a readily accessible dashboard, and delivered in a timely manner, can significantly aid these daily debriefs.

Importantly, learning analytics should be driven by stakeholder demand and timely results should be easily accessible to these stakeholders. These include learners, operators, planners and strategic actors.