

# Developing, implementing, and disseminating an adaptive clinical reasoning curriculum for healthcare students and educators

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## D7.2 Website and learning management platform (Summary of work done)

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<b>Setup of Website</b>	<b>2</b>
<b>Definition of requirements for the DID-ACT learning system</b>	<b>3</b>
<b>Potentially suitable systems</b>	<b>4</b>
Overview of potentially suitable systems	4
Summary description of systems	4
<b>Decision made by the DID-ACT consortium</b>	<b>6</b>

In the following document we will summarize the steps we have undertaken to set up the project website and select a suitable learning system for DID-ACT. Especially for the implementation of the train-the-trainer course and the student curriculum a learning system will be required.

## Setup of Website

The DID-ACT website has been set-up using Wordpress as a content management system and updated continuously. The website is accessible at <http://www.did-act.eu> and several subdomains are available:

survey.did-act.eu for the survey tool implemented as part of workpackage 5 and lms.did-act.eu forwarding to the learning management system used. Several email lists have been set-up to send out project updates and meeting announcements to our internal steering committee, partners and associate partners. The current website provides the following information:

- Summary of the DID-ACT project
- Information about the team
- Results of the project with links to all reports and outcomes
- Upcoming events and meetings
- Project-related publications
- Contact details via email and social media channels

## Definition of requirements for the DID-ACT learning system

**The DID-ACT consortium collected a list of requirements for each workpackage and technical requirements:**

### **Requirements for the train-the-trainer course and the student curriculum:**

- We intend to use the same platform for implementing both courses, so the system should be suitable for both and allow educators to have learner and teacher roles.
- The system should support the longitudinal aspect of the curriculum (e.g. in form of a learning diary, e-portfolio), which is also relevant in terms of integration aspects (possibility of hierarchical or vertical integration)
- The system should enable adaptive & interactive learning / teaching, for example in the form of individualized course content and learning pathways.
- The system should support learner-learner and teacher-learner collaboration & asynchronous and synchronous communication, e.g. chat, email etc.
- The system should support content created & shared by learners (e.g. integrated wiki as knowledge platform)

### **Requirements regarding evaluation activities**

- API to usage data (see technical requirements)
- API to the DID-ACT survey tool, so that questionnaires can be integrated into courses.

### **Technical requirements (APIs, programming languages, usability, roles...)**

- LTI implementation to connect other learning systems
- Shibboleth support to enable worldwide access
- APIs for learning analytics (e.g. X-API)
- Multiple language support
- Adaptable for multiple customers? (e.g. user interface)
- Regular updates and a "sufficient" user community to enable a sustainable use of the LMS
- Technical documentation (installation process, administration) and user support documents (e.g. help pages, tutorials)
- Hosting by DID-ACT possible
  - Multi client installation, no extra instance per client
- Course content should be editable without any programming skills

### **Other requirements**

- Open source

## Potentially suitable systems

### Overview of potentially suitable systems

Based on partners' experiences with various systems and an internet search we identified the following open source systems. If possible the systems were downloaded, installed, and tested. This process was guided by Instruct, who has substantial experience with learning systems.

System	Type	URL
Alosilabs	Adaptive addition for LMS (learning management system)	<a href="https://github.com/harvard-vpal/bridge-adaptivity">https://github.com/harvard-vpal/bridge-adaptivity</a> <a href="https://github.com/harvard-vpal/adaptive-engine">https://github.com/harvard-vpal/adaptive-engine</a>
Ilias	LMS	<a href="https://www.ilias.de/en/">https://www.ilias.de/en/</a>
OpenEdX	MOOC platform	<a href="https://open.edx.org/">https://open.edx.org/</a>
Mahara	E-Portfolio	<a href="https://mahara.org/">https://mahara.org/</a>
moodle	LMS	<a href="http://www.moodle.org">http://www.moodle.org</a>
Sagefy	Adaptive platform	<a href="https://github.com/sagefy/sagefy">https://github.com/sagefy/sagefy</a>
Sakai	LMS	<a href="https://www.sakailms.org/">https://www.sakailms.org/</a>
SCALE	adaptive platform that works with an LMS	<a href="http://www.viseyes.org/scale/">http://www.viseyes.org/scale/</a>
studIP	LMS	<a href="https://www.studip.de/">https://www.studip.de/</a>

Table 1: Overview of potentially suitable systems

### Summary description of systems

**Alosilabs** was founded in cooperation with the University of Harvard and Microsoft. The system is designed to support Learning Management Systems in integrating adaptive learning elements. Alosilabs has two main components, that can be used as an addon in different LMS and offers a clearly defined API. However, the system seems in an experimental stage and the current progress remains unclear.

**Ilias** had been developed originally at the University of Cologne and has grown to a well-known product in Germany. Ilias can be connected with other systems via LTI and Shibboleth. The local installation was without any problems. Ilias can be expanded by using

plugins- even so there are not as many available as in Moodle. The user community in Germany is remarkable.

**Mahara** is an ePortfolio system that can be integrated in other systems such as moodle. However, it is not a suitable stand-alone learning management system for DID-ACT.

**Moodle** offers a wide set of functionalities and is expandable by installing plugins and a limited approach of adaptive learning has been implemented. Moodle is connectable with other systems in using LTI and Shibboleth. The system had been installed without problems. However, unlike Ilias an installation of Moodle cannot be adapted for different clients. A detailed documentation is available and moodle has a wide international user community.

**OPENedx** is an OpenSource version of edX which mainly is used for the implementation of MOOCs (Massive open online courses). OPENedX includes all features of an LMS and additional features. OPENedX is a software solution with high complexity, not necessarily suitable to be hosted by a project consortium without any prior experiences with the system. Several commercial service providers offer the hosting.

**Sagefy**'s approach is to offer adaptive learning. However, the timeline of the system development is unclear and the installation from GitHub failed. There is no visible active user community.

**Sakai** originated in the USA and is used extensively with a wide user community. The local installation of the system was without problems, but the documentation was neither complete, nor up to date. Sakai can be connected with other systems by using LTI or Shibboleth. The functionality can be extended by additional tools.

**SCALE** was originated by an initiative of the University of Virginia's SHANTI and it supports adaptive learning. The system allows defining different next learning activities depending on the answers of a learner. The whole system is based on HTML5 and seems to be open source. However, we could not find any download option.

**Stud.IP** offers tools for administration, process and project management which can be used by universities and other educational institutions. The system does not include a sophisticated interactive e-learning component. Other systems can be connected via LTI and Shibboleth.

A detailed description of these systems can be obtained from the project consortium ([info@did-act.eu](mailto:info@did-act.eu))

## Decision made by the DID-ACT consortium

After the systems have been presented by Instruct with advantages and disadvantages the project consortium decided to use moodle as a base-system for the implementation of the train-the-trainer course and the student curriculum. Moodle partners are familiar with moodle and some even use it in their school. Moreover, moodle has a wide international user community, a detailed technical documentation, and user tutorials. However, we are also aware of some drawbacks of moodle: For example, it cannot be adapted to the needs of different customers and due to its extensive functionalities the user interface and usability is sometimes suboptimal.

The adaptive learning implementation is compared to dedicated adaptive systems limited but we can imagine integrating for example Alosilabs during a later stage of the project. Also, we envision integrating Mahara into moodle to provide a highly-sophisticated ePortfolio solution if needed.

The DID-ACT learning system is hosted by Instruct and available at <https://lms.did-act.eu>