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Eduweb

Combating Digital Exclusion

CHILDREN

EDUCATE

DIGITALLY ILLITERATE

ADULTS

IN SAFE & CREATIVE WEB

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Regional Directorate of Primary and Secondary Education in Western Greece

Deliverable O2A1
Eduweb Requirements Specification

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Abstract:	This output aims to define the requirements of the specialized educational tools in order to define and analyze what is required n order to set up the e-learning environment and the educational material for adults' education on Internet use. This report will provide the framework for O3 and O4.

Keyword List:	Functional and non-functional requirements

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1 Introduction

1.1 *Project Overview*

This project aims to enhance the cooperation between schools and educational institutions across Europe in order to combat the digital exclusion of adults in terms of Internet use by making students, the educators of the digitally illiterate adult members of their families, in safe and creative web.

The development of this document was a result of a collaborative effort of the Eduweb partners and more particularly by BU, CPI and CTI.

1.2 *Purpose and Scope of this Specification*

This document reports on the requirements of the specialized educational tools. More specifically, this report specifies the requirements of the specialized educational tools in order to set up an elearning environment and the corresponding educational material for adults' education on Internet use. The functional and non functional specifications introduced and outlined in this document are further elaborated and used in deliverable O2A2 "Definition and analysis of the specialized educational tools".

2 Service Description

In this section the general factors that affect the software and its requirements are described.

2.1 *Product Context*

The EduWeb e-learning tool is a web based VLE where the participating users can train and assess their knowledge on ICT topics falling in one of the 7 themes (as defined in deliverable O1), or contribute with training material on these themes.

2.2 *User classification*

Eduweb's business users fall into the categories summarized in Table 1.

Table 1. User classes and categories

User	*Description*	*Category*	*Level of Expertise*
User manager	Responsible for managing all other user roles (adding, removing, assigning roles, etc)	n/a	Expert in website content management
Trainer	Facilitate the learning process using Eduweb functionality	Children or adults	Intermediate in one or more of the eduweb training topics

Trainee	Main beneficiary of eduweb	Children or adults	Beginner in eduweb topics
Content buddy	Publish training material (learning bundle) on Eduweb	Ranked user depending on seniority, history of content, "reputation" etc.	Intermediate to Expert in pedagogical aspects in IT education
Content provider	Create and publish l-mites		Intermediate to expert, maintains ability to critically select and construct all components of an l-mite
Eduweb guru	Create, publish and approve l-mites	An experienced ranked user with significant contribution	expert
Content consumer	Anonymous trainee		

2.3 *Constraints and operational requirements*

The VLE product that will be developed for Eduweb is expected to operate under the following minimum requirements:

- Server:
  - Hardware (virtual hosting environment)
    - Operating system: CentOS 7
    - RAM: 4Gb
    - Hard drive capacity: 17Gb (initial)
    - CPU: Intel Xeon x86 64
  - Software
    - Web server: Apache 2.4.6
    - PHP 7.1
    - MySQL Ver 15.1 Distrib 5.5.52-MariaDB
    - Joomla 3.6.5
      - Greek language package 3.6.3
      - Italian language package 3.6.5
      - Bulgarian language package 3.6.5
      - JCE editor 2.6.9
      - Allvideos 4.7.0
      - Baccessibility master
      - Joomdle 1.0.8
        - module abc v1.0.0
        - module calendar v1.0.0

        - module coursecategories v1.0.0
        - module coursemates v1.1.0
        - module course navigation v1.1.0
        - module mentees v1.0.0
        - module my badges v1.0.0
        - module my certificates v1.0.1
        - module my grades v1.0.0
        - module randomquestion v1.1.1
        - module teachers v1.0.0
        - module latest 3.2
        - plugin oomdleusercheck v1.0.4
    - Moodle 3.2.2+
- Clients:
    - Desktop
        - Windows Vista (Firefox 50.x-61.x, Chrome 41.x-59.x)
        - Windows 7 (Firefox 50.x-61.x, Chrome 41.x-59.x)
        - Windows 8 (Firefox 50.x-61.x, Chrome 41.x-59.x)
        - Windows 8.1 (Firefox 50.x-61.x, Chrome 41.x-59.x)
        - Windows 10 (Firefox 50.x-61.x, Chrome 41.x-59.x)
        - Linux - all current distributions (2016-2017), (Firefox 50.x-61.x, Chrome 41.x-59.x)
    - Mobile
        - Android Marshmallow 6.0-6.0.1 (latest browser version)
        - Android Nougat 7.0-7.1.2 (latest browser version)
        - iOS 9.3.5 (latest browser version)
        - Windows mobile 6.5 (latest browser version)

3 Requirements

Priority Definitions

The following definitions are intended as a guideline to prioritize requirements.

- Priority 1 – The requirement is a “must have” as outlined by policy/law
- Priority 2 – The requirement is needed for improved processing, and the fulfillment of the requirement will create immediate benefits
- Priority 3 – The requirement is a “nice to have” which may include new functionality

3.1 *Functional Requirements*

Table 2 summarizes Eduweb’s functional requirements. The numbering convention used is: F.X where X is the respective number of the requirement.

Table 2. Functional requirements.

Req#	*Requirement*	*Description*	*Method of verification*	*Priority*
F.1	Confirmation screen	The system shall include dialogues to allow the users to confirm any changes they make	UAT	2
F.2	User Registration Form	a. The system shall allow anonymous users to register b. The system shall allow the User Manager to register users	UAT	1
F.3	Search bar	The system shall provide the facilities for the user to perform searches based on l-mite title, topic, activity, theme, creator and level of difficulty	UAT	1
F.4	Content selection and display	a. The system shall provide the user with a one page view of all content based on the filtering performed by the provided search criteria b. The system shall automatically recommend suitable content based on the user's historical activity and profile	UAT	1 3
F.5	l-mite content interface	The system shall allow the trainer to link external content to an l-mite object	UAT	1
F.6	l-bundle creation form	The system shall allow the trainer to select the l-mites to be included in an l-bundle	UAT	1
F.7	Assessment creation	The system shall allow the trainer to provide an l-bundle with questions	UAT	1
F.8	Multiple choice interface	The system shall allow the trainer to enter a number of multiple choice tests and link them to an l-mite or an l-bundle	UAT	1
F.9	Topic metadata	The system shall allow the trainer to attach metadata to the l-bundles and l-mites:	Unit testing/UAT	1

		a. from a drop down list of existing tags (themes, activities) b. selecting a difficulty level		
F.10	L-mite approval	The system shall allow the EduWeb Guru to review and approve or reject newly created l-mites	UAT	2
F.11	Content reporting	The system shall allow any user to report for any outdated or irrelevant content	UAT	3
F.12	Feedback	The system shall allow any registered user to provide feedback.	UAT	2
F.13	Content selection interface	The system shall allow the creator of some content to select for deletion (make it not visible).	UAT	2
F.14	Account deactivation	The system shall allow any user to unregister from the EduWeb VLE	UAT	2
F.15	Role allocation	The system shall allow the User Manager to perform an initial allocation of registered users to specific Eduweb roles	UAT	1
F.16	Follow trainer	Any authenticated actor shall have the option to follow the creator of an l-mite or l-bundle	UAT	3

3.2 *Non Functional Requirements*

The non-functional requirements elicited are summarized in Table 3. The numbering convention used is NF.X where X represents the requirement number.

Table 3. Non-functional requirements

Req#	*Requirement*	*Description*
NF.1	User data processing and storing	The system shall include a database and processes for storing and manipulating user data and profiles
NF.2	Provide content	The system shall have the capacity to serve audio visual material in a format suitable for streaming in web browsers
NF.3	Content translation	The system shall have the functionality to allow multiple languages. In terms of the video material, the system should allow the superposition of subtitles for the different languages

NF.4	l-mite management (storing and approval)	The system should store newly created l-mites in the database and include a Boolean attribute “approved”
NF.5	Suggest difficulty level for l-bundle	The system should calculate an overall difficulty level of an l-bundle based on the levels of its components (l-mites)
NF.6	Publish l-bundle	The system should have the ability to make approved l-bundles searchable
NF.7	Publish l-mite	The system should enable and make searchable all l-mites that have been approved by an Eduweb Guru
NF.8	Return for editing	The system should have the capability to send email to the creator of an l-mite, following a rejected l-mite
NF.9	Delist l-mite	The system should protect the integrity of the l-bundles by prohibiting the deletion of l-mites that are included in at least one live l-bundle
NF.10	Delete l-bundle	The system should allow the deletion of l-bundles
NF.11	Report count	The system should record the interaction activity with the l-mites and l-bundles
NF.12	Store and display feedback	The feedback will be stored in the database and can be retried and displayed publicly
NF.13	Reputation and ranking	The system will calculate the reputation and rank of all registered users in order to allow promotion of status through gamification

NF. 14 Delete Account

3.3 *Usability*

As Eduweb’s beneficiaries are users with low digital literacy, usability is of paramount importance. The VLE should have clutter-free pages and conform to W3C accessibility standards. Moreover, the interface should be intuitive, promoting high understandability; when possible confirmation of the user actions should be included and the interface actions and elements should be consistent.

3.4 *Performance*

This software should perform the same way irrespective of its Operating System environments.

3.4.1 Capacity

The EduWeb Software should support 500 Eduweb’s business users and 1000 requests/min simultaneously.

3.4.2 Availability

The EduWeb Software should target high availability. More specifically, a cloud implementation should allow a high SLA so that the system is available for use 24 hours per day, 365 days per year.

3.4.3 Latency

- The EduWeb Software should be hosted on a server that can provide adequate response time. Normally school students tend to have short attentions spans, so a slow server would not be satisfactory for this application. It is recommended to have a cloud hosting for the EduWeb Software.
- Any interface between a user and the EduWeb Software should have a maximum response time of 5 seconds.
- The response should be fast enough to avoid users' response collisions.

3.5 System Interface/Integration

- The EduWeb Software should work and be tested against different browsers (e.g. IE 8.0 or later and Firefox3.6 or later, etc.).
- The EduWeb user interfaces will be the same for all EduWeb business users based on the web browser application. Differences will depend on users' functions. EduWeb Gurus, for instance, will have the EduWeb user interface with add, remove and modify possibilities.

3.6 Security

- Access to the EduWeb Software is permitted to all EduWeb's business users.
- The EduWeb Software should provide databases' modification only for EduWeb's Trainers and System Administrator after authorization procedures.
- Personal information should be protected.
- The EduWeb Software should comply with quality assurance and web security standards.

3.7 Maintainability and Portability

- Changes (new Trainees and Trainers addition, password changes, database changes, etc.) must be verified once per day at least.
- The EduWeb Software should provide automatically notification to Trainers by e-mail about new contents (i.e. l-mites, l-bundles, etc.), feedback, etc.
- As this software is to work on multiple platforms portability is an essential attribute and we ensure this by developing the EduWeb software to be accessible from a web browser.

Eduweb

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ΛΥΚΕΙΟ ΑΡΑΔΙΠΠΟΥ 2007 ΤΑΞΗΣ ΜΗΤΣΟΠΟΥΛΟΣ

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