

Partners:



Combating Digital Exclusion

CHILDREN  
**EDUCATE**  
DIGITALLY ILLITERATE  
**ADULTS**  
IN SAFE & CREATIVE WEB



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## Deliverable O2A2

### Definition and analysis of the specialized educational tools

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<b>Abstract:</b>	This output aims to define the requirements of the specialized educational tools in order to define and analyze what is required in 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.
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## List of Abbreviations

The following table presents the acronyms used in the deliverable in alphabetical order.

<i>Abbreviation</i>	<i>Description</i>

## Executive Summary

The EduWeb 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 EduWeb e-learning environment aims to act as an **enabler** for a learning ecosystem, where adults can embark into a **learning journey** in order to improve their digital literacy skills, with the help and support of digitally literate members – typically students - using **gamification** approaches and with a view to become trainers themselves by promoting **co-creation**. A key concept in the EduWeb e-learning environment is the “*learning-mite*”, or *l-mite*, defined as follows:

**l-mite**, the (noun).: an atomic, self-contained entity of a learning content, comprised of the teaching material and assessment/exercise on a particular topic.

This deliverable, O2A2 entitled “Definition and analysis of the specialized educational tools” is primarily based on the outcomes of deliverable O1 and specifies the procedures, processes and structures of the specialized educational tools, that is the e-learning environment and the educational material. The methodology adopted by the team involved in producing this deliverable includes the UML standard and more particularly Use Cases.

# 1 Introduction

This document contains definitions of the processes, procedures and structures of the specialised educational tools an e-learning platform will need to support. This section describes the scope of the analysis, intended audience, conventions used and structure of the report.

## 1.1 Scope

The present document is the deliverable “O2A2: Definition and analysis of the specialized educational tools” of the EduWeb project. O2A2 builds on “O1: Report on the best practices for adults education on Internet use in the educational process throughout Europe” by reflecting on the European dimension of adult education and considering the pedagogical aspects on Internet use. Furthermore, O2A2 references deliverable “O2A1: EduWeb Requirements Specification”.

## 1.2 Audience

The intended audience for this document is the EduWeb consortium (including school partners), the NA Agent (IKY), the European Commission, and the public interested in this project.

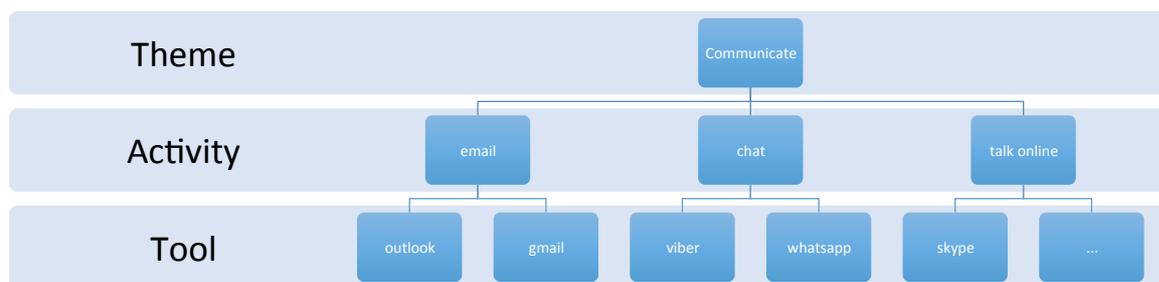
## 1.3 Structure

The structure of the rest of the document is as follows:

- Section 2 presents EduWeb’s content framework. This is used for the initial allocation of the content development effort among the relevant partners of the EduWeb Consortium.
- Section 3 presents a detailed analysis of the EduWeb environment.

# 2 EduWeb content framework

The content framework specified in O1 identifies 7 thematic areas, each of which contains a number of topics in the form of an activity and a tool. Each topic will be implemented as an I-mite (described in Section 3 below). The logical structure of EduWeb’s content framework is shown in the example in Figure 1. The complete initial content of this framework is shown in Appendix ...



**Figure 1** Example structure for “Communicate” thematic area

### 3 Analysis of EduWeb environment

This section provides a detailed analysis of the EduWeb e-learning software.

#### 3.1 User Interface

All EduWeb (business) users will access the system through a web interface. The pages will be clutter-free and will adhere to accessibility guidelines such as Web Content Accessibility Guidelines (WCAG) 2.0.

The educational content will be in the form of a “learning mite” (l-mite) and a “learning bundle” l-bundle. An l-mite is the smallest self-contained learning object, comprised of a snippet of educational content on a topic, and a set of assessment activities. L-mites should normally contain videos of a short length (indicatively 3-7 minutes), or presentation material of no more than a few slides. An l-mite on the EduWeb web page would be similar to the lesson as defined in TED-Ed (<http://ed.ted.com>); an example is shown in Figure 2.



Figure 2 TED-Ed lesson

L-mites will need to be equipped with the necessary tags in order to specify their theme, topic and level of difficulty. The level of difficulty could be presented as an intuitive arrangement of icons, mapping to an ordinal scale variable and selected by the mouse. An example level of difficulty scale is shown in Figure 3. The same encoding can be used in the user registration.

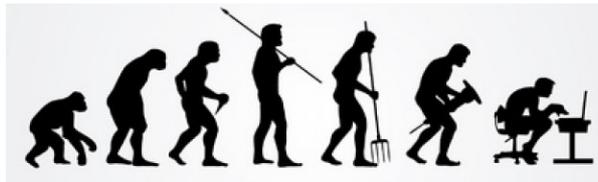


Figure 3. Example Level of difficulty/expertise input

An I-bundle is a collection of I-mites, arranged in a sequential order. Educational content (I-mites and I-bundles) will be in different languages whenever possible. The home page will include a carousel of popular I-mites, based on overall feedback and/or number of visits.

The educational material will be openly available to, and freely accessible by all users, registered or anonymous. A user would need to register in order to participate in the gamification processes. Potentially all registered users would have the opportunity to access the content creation pages and functionality, depending on their status. This would be seen as a confirmation of the skills they have acquired. At a very basic level, a trainee who has successfully completed a study of a number of I-mites would be upgraded to a Content Buddy. A Content Buddy is the lightest form of trainer where they will have the capability to create their own I-bundle by mixing and matching existing I-mites. A Content Buddy can be seen as a student who is aware of an adult's needs and skill gaps (e.g. their parent's) and they will have the capability to create a custom I-bundle for that particular trainee. Transition from Trainee to Content Buddy is relatively easy and not particularly demanding. A student for example with intermediate knowledge would easily "jump" from trainee to Content Buddy. To do this they would need during the registration phase to declare themselves as "intermediate" users and pass a content buddy test. This can be in a form of an I-bundle comprised of seven "beginner" I-mites, one for each theme.

A Content Buddy who reaches the second threshold of points would be upgraded to Content Provider. As suggested by their name, Content Providers have access to I-mite creation functionality and web pages. At the top of the user classification lie the EduWeb Gurus. An EduWeb Guru maintains all the functionality of the subordinate trainers (Content Buddy and Provider) but in addition they can moderate (approve) new I-mites.

The gamification functionality will involve two leaderboards presented in the top right part of the EduWeb page. The top trainees will appear on an achievement ranking, whereas the trainers will appear on a ranking based on their reputation.

The registration page would comprise of a form requiring:

- User's personal details: name, age
- User's login details: alias, email, password
- User's level of expertise: beginner to expert ordinal scale

In addition the registration page would need to contain a link to the "how to create an email account" I-mite as a support to the users who may not have an email account.

### 3.2 System Actors

For the EduWeb e-learning system, the following actors have been identified:

#### 1) User manager

Participating Use case(s):	User creation User removal
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#### 2) Content Consumer

Participating Use case(s):	Study I-mite Follow I-bundle Provide Feedback Report L-mite/L-Bundle Register
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#### 3) Trainee

Participating Use case(s):	Follow I-bundle Study I-mite Follow trainer (Content buddy, Content provider, Eduweb Guru) Provide Feedback Report L-mite/L-Bundle Access to the ranking system Deactivate account
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#### 4) Content buddy

Extends actor:	Trainee
Participating Use case(s):	Manage I-bundle Remove I-bundle

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#### 5) Content Provider

Extends actor:	Content buddy
Participating Use case(s):	Manage I-mite Remove I-mite

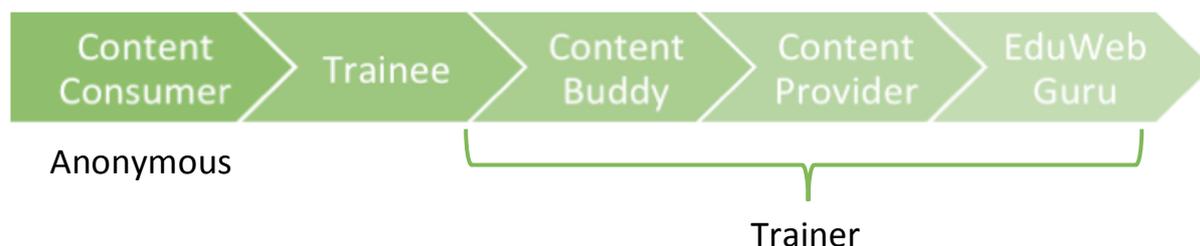
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#### 6) EduWeb Guru

Extends actor:	Content Provider
Participating Use case(s):	Approve I-mite

---

An EduWeb business user is a constantly evolving entity. Through gamification a trainee will be able to evolve into a trainer gaining the ability to use the available I-mites to create lesson bundles at first. Once a sufficient amount of points have been gathered he will be able to provide his own content. The learning journey of the Eduweb user is depicted in **Figure 4**.



**Figure 4.** EduWeb user evolution

### 3.3 Use Cases

#### User creation

The user manager will have the ability to create user for the initial population of the Eduweb platform.

Participating Actors	User manager
Functional Requirements	F.2 User Creation
Non-Functional Requirements	NF.1 User data storing & processing
System Functions	User Creation
Actor Steps	System Steps
<b>1. User manager declares he wants to create a new user</b>	
The user manager decides he wants to create a new user	
	<b>2. System server registration form</b>
	The system serves a registration form
<b>3. User manager populates the form</b>	
The user manager populates the form with the new user’s information. The user manager will be able to decide what type of account will the new user have.	
	<b>4. System creates new user</b>
	The system creates a user account based on the user manager’s input.

## User removal

The user manager will have the ability to remove a user account if the specific user has violated the Eduweb’s platform policy. If the user has already published content, it will be deleted as well.

Participating Actors	User manager
Functional requirements	F.14 Account deactivation button F.1 Confirmation Screen
Non-Functional requirements	NF14. Delete account NF.9 Delete L-bundle NF.10 Delist L-mite
System Functions	User account deletion
Actor Steps	System Steps
<p><b>1. User manager decides a user must be removed</b> If a user has violated Eduweb’s policy (huge number of reports in her content), then the user manager can use the deactivate account in the user’s page button to remove her account.</p>	
<p><b>2. The system removes the specified account</b> The user account is removed, and the account’s content is removed.</p>	

## User registration

The description of the process which an anonymous user can follow to become a trainee.

Participating Actors	Anonymous Trainee
Functional Requirements	F.2 User registration
Non-Functional Requirements	NF.1 User data storing & processing
System Functions	User Creation
Actor Steps	System Steps
<p><b>1. Anonymous user selects the registration button</b> The anonymous user selects the option to create a trainee account</p>	
<p><b>2. System responds with the registration form.</b> The registration page is served in which the user supplies the necessary details for its completion.</p>	
<p><b>3. User has email</b> The user fills the registration form.</p>	
<p><b>3’. User does not have email</b> The anonymous user declares though a button</p>	

that she does not have an email account.

**4. Account creation**

The system creates a trainee account for the content consumer and redirects her to a webpage which suggests a number I-mites and I-bundles based on his level of expertise

**4'. Suggest L-mite**

If the user declares that she has no email, the system provides a link to an existing I-mite for email creation.

**5. Email creation**

The content consumer follows the I-mite's instructions and creates an e-mail.

**6. User has email**

The content consumer fill the registration form providing his newly acquired e-mail.

**7. Account Creation**

The system creates a trainee account for the content consumer and redirects her to a webpage which suggests a number I-mites and I-bundles based on her level of expertise

**Study I-mite**

The process a trainee or an anonymous user must follow to find and study an I-mite.

Participating Actors	Anonymous User Trainee Trainer
Functional requirements	F.3 Search bar F.4 Content selection & display
Non-Functional requirement	NF.2 Provide Content NF13. Reputation and ranking
System Functions	Search Trainee Ranking Calculation Feedback Form
Included Use Cases	Provide Feedback Report I-mite/I-bundle
<b>Actor Steps</b>	<b>System Steps</b>
<b>1. Search I-mite for a specific topic</b> The trainee uses the search function to find the available I-mites on a specific topic.	<b>2. System serves the results</b> The system responds with a webpage containing all relevant results

**3. Select I-mite**

The trainee selects the I-mite she wants to watch.

**4. L-mite is served**

System serves the selected I-mite. Once the trainee has completed an I-mite, the system gives the option for assessment and asks for feedback.

**5. Trainee response**

The trainee takes or skips the assessment test and provides feedback (optional)

**6. Point calculation**

The system calculates the points that should be given to the trainee and stores feedback data if given.

**Study I-bundle**

The process a trainee or an anonymous user must follow to find and study an I-bundle

Participating Actors	Anonymous User Trainee Trainer
Functional requirements	F.3 Search bar F.4 Content selection & display NF13. Reputation and ranking
Non-Functional Requirements	NF.2 Provide content
System Functions	Search Trainee Ranking Calculation Feedback Form
Included Use Cases	Provide Feedback Report I-mite/I-bundle
Actor Steps	System Steps
<b>1. Search I-bundle for a specific topic</b> The trainee uses the search function to find the available I-mites on a specific topic.	<b>2. System serves the results</b> The system responds with a webpage containing all relevant results
<b>3. Select I-bundle</b> The trainee selects the I-bundle she wants to watch.	<b>4. I-bundle is served</b> System serves the selected I-bundle. Once the trainee has completed an I-bundle, the system

gives the option for assessment and asks for feedback.

**5. Trainee response**

The trainee takes or skips the assessment test and provides Feedback(optional).

**6. Point calculation**

The system calculates the points that should be given to the trainee and stores the feedback data if given.

**Follow trainer**

The I-earner has the ability to follow a trainer and be notified of his publications.

Participating Actors	Trainee
Functional requirements	F.16 Follow button
Non-Functional requirements	NF.13 Reputation and ranking
System Functions	Follow trainer
Actor Steps	System Steps
1. Declare Intent The trainee press the follow button (which is present in all	2. System processes intent The system increases the amount of the trainer’s followers and also recalculates her reputation.
	2’. User notification Whenever a trainer publishes new content, the system notifies all the users who have followed her.

**Manage I-mite**

The process with which an I-mite is born and maintained.

Participating Actors	Content Creator Eduweb Guru
Functional requirements	F.5 I-mite content interface F.8 Multiple choice interface F.9 Topic metadata F.1 Confirmation Screen
Non-Functional requirements	NF.4 I-mite management NF.13 Reputation and ranking
System Functions	Create I-mite

Actor Steps	System Steps
<p><b>1. Create content</b> The trainer (content provider/Eduweb guru) must identify the material he will use in the I-mite, as well as create an appropriate assessment</p> <p><b>1'. Edit content</b> The trainer (content provider/Eduweb guru) clicks on the "edit" button of an existing I-mite</p>	<p>Approval Trainer reputation calculation</p>
<p><b>2. L-mite submission</b> Specification of the I-mite's metadata such as difficulty level and topic. Data (learning material, difficulty level, topic) submission to Eduweb's UI</p>	<p><b>3. L-mite creation</b> The submitted data are stored and the I-mite is created.</p>
<p><b>4. L-mite share</b> The trainer decides if he wants to publish the I-bundle now.</p>	<p><b>5. The trainer decides to publish I-mite.</b> The I-bundle is flagged for approval by and Eduweb Guru</p>
	<p><b>5'. The trainer decides not to publish the I-mite</b> The I-bundle is saved for further editing and future publication</p>

## Manage I-bundle

The process with which an I-bundle is born and maintained.

Participating Actors	Content Buddy Content Creator Eduweb Guru
Functional requirements	F.6. I-bundle creation form F.9 Topic metadata F.1 Confirmation Screen
Non-Functional requirements	NF.5 Suggest difficulty level for I-bundle NF.6 Publish I-bundle NF.13 Reputation and ranking
System Functions	Create L-bundle Trainer reputation calculation
Actor Steps	System Steps

**1. L-bundle specification**

The content creator has to identify the I-mites she will use in the I-bundle.

---

**2. L-bundle submission**

Specification of I-bundle's difficulty and topic.

Data (learning material, difficulty level, topic) submission to Eduweb's UI

---

**3. L-bundle creation**

The submitted data are stored and the I-bundle is created

---

**4. L-bundle share**

The trainer decides if he wants to publish the I-bundle now.

---

**5. The trainer decides to publish I-bundle.**

The I-bundle is made publicly available

---

**5'. The trainer decides not to publish the I-bundle**

The I-bundle is saved for further editing and future publication

---

## Approve I-mite

The process an Eduweb Guru must follow to approve or reject a newly created I-mite.

Participating Actors	Eduweb Guru
Functional requirements	List I-mites pending for approval F.10 L-mite approval
Non-Functional requirements	NF.7 Publish I-mite NF.8 Return for editing
System Functions	L-mite Approval
Actor Steps	System Steps
<b>1. L-mite overview</b>	
An Eduweb Guru goes through the L-mite and decides if it should be published or not	
<b>2. L-mite approved</b>	
The Eduweb Guru approves the L-mite	
<b>2'. L-mite rejected</b>	
The Eduweb Guru rejects the L-mite	
<b>3. L-mite published</b>	
If the I-mite is approved, the system notifies its creator and makes it publicly available	
<b>3'. L-mite edit request</b>	
If the I-mite is rejected, the system notifies its creator and prompts for further editing.	

## Remove I-mite

The steps a content creator or an Eduweb Guru must follow to remove (delist) an I-mite.

Participating Actors	Content Creator Eduweb Guru
Functional requirements	F.4 Content selection and display F.1 Confirmation screen
Non-Functional requirements	NF.9 Delist I-mite
System Functions	L-mite removal
Actor Steps	System Steps
<b>1. L-mite identification</b>	
The content provider identifies the I-mite(s) she wants to delete.	
<b>2. Approval request</b>	
The system "asks" the user if she's sure he want to delete the selected I-mite(s).	
<b>3. Content provider confirms</b>	
The trainer confirms the deletion.	
<b>3'. Content provider declines</b>	

---

The trainer declines the deletion.

---

**4. L-mite deletion**

If the trainer confirms the deletion, the selected l-mite(s) is marked as deleted and not visible.

---

**4'. Return to previous screen**

If the trainer declines, she is returned to the previous screen.

---

**Remove l-bundle**

The steps a teacher must follow to remove an l-bundle.

Participating Actors

Content Buddy  
Content Creator  
Eduweb Guru

---

Functional requirements

F.4 Interface for content selection  
F.1 Confirmation screen

---

Non-Functional requirements

NF.10 Delete l-bundle

---

System Functions

L-bundle removal

---

Actor Steps

System Steps

---

**1. L-bundle identification**

The content provider identifies the l-bundle(s) she wants to delete.

---

**2. Approval request**

The system “asks” the user if she’s sure he want to delete the selected l-bundle(s).

---

**3. Content provider confirms**

The trainer confirms the deletion.

---

**3'. Content provider declines**

The trainer declines the deletion.

---

**4. L-bundle deletion**

If the trainer confirms, the selected l-bundle(s) is/are deleted.

---

**4'. Return to previous screen**

If the trainer declines, she is returned to the previous screen.

---

## Account deactivation

User (Trainee or Teacher) deactivates her account.

Participating Actors	Trainee Content Buddy Content Creator Eduweb Guru
Functional requirements	F.14 Account deactivation button F.1 Confirmation Screen
Non-Functional requirements	NF14. Delete account NF.9 Delete L-bundle NF.10 Delist L-mite
System Functions	User account deletion
Actor Steps	System Steps
<b>1. User declares intent</b> The user (trainee, trainer) declares his intent to delete his account by clicking in the appropriate button	
	<b>2. Informative message</b> The system responds with a message briefing the user of the content that will be deleted if she deletes the account and asks for confirmation
<b>3. User confirms</b> The trainer confirms the deletion.	
<b>3'. User declines</b> The trainer declines the deletion.	
	<b>4. Account deletion</b> If the user confirms, her account is deleted.
	<b>4'. Return to previous screen</b> If the trainer declines, she is returned to the previous screen.

## Report L-mite/L-bundle

The steps for reporting an l-mite/l-bundle

Participating Actors	Anonymous User Trainee
Functional requirements	F11. Report Button F11.1 Report feedback form
Non-Functional requirements	NF11. Report count
System Functions	Report
Actor Steps	System Steps
<b>1. Identify l-mite or l-bundle with poor or</b>	

**irrelevant content.**

The user decides if the content of a particular I-mite/I-bundle is poor, irrelevant or outdated and reports it via a report button. The user will be given the option to provide her reasoning via an optional text box.

---

**2. Count report vote**

The system adds the current vote to the sum of negative votes it already has and notifies the creator of the I-mite/I-bundle.

---

**2'. Report threshold reached**

If the report vote sum reaches a certain threshold, the creator of the I-bundle/I-mite is notified and requested to edit or remove.

---

**Provide Feedback**

The user (trainee or anonymous) is presented with a form with which he can provide feedback and suggests improvements for an I-bundle or an I-mite

Participating Actors	Content Creator Eduweb Guru
Functional requirements	F12. Feedback F12.1 Content Feedback form
Non-Functional requirements	NF12 Store and display Feedback NF12.1 Notify Trainer
System Functions	Feedback
Actor Steps	System Steps
<b>1. L-earner decides to provide feedback</b> After successfully completing an I-mite or I-bundle the I-earner has decided to provide feedback.	
	<b>2. Feedback form</b> The system serves the feedback form.
<b>3. L-earner fills the form</b> The I-earner fills the form rating the I-bundle or I-mite based on its usefulness, difficulty etc.	
	<b>4. Store form</b> The system stores the feedback notifies the Teacher.

### 3.4 Functional Requirements

#### F.1 Confirmation Screen

The user is prompted to confirm the changes he has made.

Use Cases	User Registration Manage I-mite Manage I-bundle Approve I-mite Remove I-mite Remove I-bundle Account Deactivation
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#### F2. User Creation from

Once an anonymous user decides he wants to become a trainee and create an Eduweb account, she will be served with a registration form in which he will have to provide her Name, E-mail, age, level of expertise, gender, country, username. The user manager will be able to populate the same form to create a new user.

Use Cases	User creation User registration
-----------	------------------------------------

#### F3. Search bar

The I-earner must have access to a search bar, which she will use to search for the content he is interest in using filters and keywords to specify I-bundle's/I-mite's topic and creator.

Use Cases	Study I-mite Study I-bundle
-----------	--------------------------------

#### F4. Content selection and display

After the I-earner has specified her desired filters, the system serves all relevant results from which the I-earner can choose those that better fits her requirements.

Use Cases	Study I-mite Study I-bundle
-----------	--------------------------------

#### F5.II-mite content interface

The trainer is provided with an interface with which she can link the content she wants to use (image, video etc.).

Use Cases

Manage I-mite

---

**F6. L-bundle creation form**

The content buddy is presented with a page in which he can specify the I-mite's she wishes to use in her I-bundle and in what order.

Use Cases

Manage I-bundle

---

**F7. Assessment creation**

The system shall allow the trainer to provide an I-bundle with questions

Use Cases

Manage I-bundle

---

**F8. Multiple Choice Interface**

The system shall allow the trainer to enter a number of multiple choice tests and link them to an I-mite or an I-bundle

Use Cases

Manage I-mite  
Manage I-bundle

---

**F9. Topic metadata**

The trainer specifies I-bundle's/I-mite's topic (selection menu of existing tags or free text for creating new ones) and difficulty (five-star range).

Use Cases

Manage I-mite  
Manage I-bundle

---

**F10. List I-mites pending for approval**

A list available only to Eduweb Guru's which contains all the newly created I-mites pending for approval.

Use Cases

Approve I-mite

---

**F10.1. L-mite approval**

After reviewing an I-mite, the Eduweb Guru decides if it should be published or returned for further editing.

Refined requirement	F10. List I-mites pending for approval
Use Cases	Approve I-mite

### F11. Content reporting

A button a learner can use to report an I-mite/I-bundle for irrelevant or outdated content.

Use Cases	Report
-----------	--------

#### F11.1 Feedback

A form in which the learner specifies the reasons she has decided to report an I-mite/I-bundle.

Refined requirement	F11. Report Button
Use Cases	Report

### F12. Feedback prompt

A prompt shown to the learner once she completes an I-mite/I-bundle asking him to provide feedback. The feedback will contain questions to assess the suitability of the content and whether it met their expectations (e.g. content was relevant and at the right level of difficulty).

Use Cases	Feedback
-----------	----------

#### F12.1 Content feedback form

A form in which the learner provides feedback about the content she has just completed.

Refined requirement	F11. Feedback prompt
Use Cases	Approve I-mite

### F13. Content selection interface

A screen in which the user can select the I-bundle(s)/I-mite(s) she has created in order to delete them. It should be noted that the content that is marked for deletion should not actually be deleted, but not visible in future selections. This is in order to maintain the consistency and integrity of the system and specifically bundles that could potentially be using the I-mites.

Use Cases	Remove I-mite Remove I-bundle
-----------	----------------------------------

### F14. Account deactivation button

Button in the user's account page, which she will use if she wants to delete her account. The user manager will be able to use this button as well in case the user has violated Eduweb's policy.

Use Cases

User removal  
Account Deactivation

---

### F15. Follow Button

A button the trainee can use in order to follow and get notified of the content a trainer provides.

Use Cases

Account Deactivation

---

### 3.5 Non-Functional Requirements

#### NF.1 User data processing and storing.

The procedure with which the system creates a user account based on the information given from F.2 (registration form) and suggests content with the appropriate difficulty to the trainee.

Restricted Use Cases	User Registration
System Functions	User Creation

#### NF.2 Provide Content

The system serves the results of a user’s search, bases on the criteria she has provided.

Restricted Use Cases	Study I-mite
	Study I-bundle
System functions	Search

#### 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

Restricted Use Cases	*
System functions	*

#### NF.4 Store I-mite and queue it for approval

The system creates the I-mite (provided content and assessment) and marks it as “pending for approval” and display it in F10 (List I-mites pending for approval)

Restricted Use Cases	Manage I-mite
System functions	Create I-mite

#### NF.5 Suggest difficulty level for I-bundle

Suggest the newly created I-bundle’s difficulty based on the difficulty of the I-mites that the I-bundle is comprised of.

Restricted Use Cases	Manage I-bundle
System functions	Create I-bundle

**NF.6 Publish I-bundle**

The new I-bundle is created and published.

Restricted Use Cases  
System functions

Manage I-bundle  
Create I-bundle

---

**NF.7 Publish L-mite**

After an Eduweb Guru has reviewed and approved a newly created I-mite, the system makes it publicly available.

Restricted Use Cases  
System functions

Approve I-mite  
L-mite approval

---

**NF.8 Return for editing**

After an Eduweb Guru has reviewed and rejected a newly created I-mite, the system notifies the creator and prompts him to further edit the I-mite.

Restricted Use Cases  
System functions

Approve I-mite  
L-mite approval

---

**NF.9 Delist I-mite**

The system hides it from search results. L-bundles which contain said I-mite remain unchanged but the I-bundle creator is notified.

Restricted Use Cases  
System functions

Delete I-mite  
L-mite removal

---

**NF.10 Delete I-bundle**

If a trainer has confirmed that she wants an I-bundle of hers to be deleted, then the system deletes the specific I-bundle.

Restricted Use Cases  
System functions

Delete I-bundle  
L-bundle removal

---

**NF.11 Report count**

The system keeps track of the report count for every I-mite/I-bundle and notifies the user when a certain threshold has been reached.

Restricted Use Cases  
System functions

Report I-mite/I-bundle  
Report

---

**NF.12 Store and display feedback**

When a I-earner provides feedback for an I-mite/I-bundle, the system stores and makes it publicly available for everyone to read.

Restricted Use Cases  
System functions

Provide feedback  
Feedback

---

**NF. 14 Reputation and Ranking**

The system will calculate the reputation and rank of all registered users in order to allow promotion of status through gamification

Restricted Use Cases

Study L-mite  
Study L-bundle  
Create L-mite  
Create L-bundle

System functions

Trainee Ranking Calculation  
Trainer Reputation Calculation

---

**NF. 13 Delete Account**

When a l-earner confirms he wants to delete his account, the system removes the account and removes/delist its' content.

Restricted Use Cases  
System functions

Account Deactivation  
User account deletion

---

**3.6 System Functions**

At this point the System Functions that were identified in the Use Cases (3.3) for the Eduweb e-learning platform, will be presented.

**User creation**

The system creates a new trainee account based on the content consumer's input during the registration process.

Inputs:	Name, E-mail, age, level of expertise, gender, country, username
Outputs:	Successful account creation message, webpage with suggested content based on user's expertise.
Exception:	User did not provide valid email
Use Cases:	Registration

---

**User modification**

The User Manager assigns arbitrarily a role to a specific user. This functionality is particularly needed

for bootstrapping the EduWeb learning environment.

Inputs: Username, role  
 Outputs: Confirmation

Use Cases: Role Assignment

---

### ***Trainee ranking calculation***

Depending on the interaction with the Eduweb learning content (I-mites and I-bundles), the Trainees will be awarded contribution points. The points will be a result of a weighted factor calculation.

Inputs: Content watched, assessment completed, %answered correctly, feedback provided  
 Outputs: Points  
 Exception: No awards for already completed I-mite  
 Use Cases: Study I-mite

---

### ***Trainer reputation calculation***

A Trainer will be awarded reputation points for contributing and proactively participating in the EduWeb learning process.

Inputs: Trainee ranking, #I-mites created, #I-bundles created, #followers, #I-mite studied, #I-bundles followed, feedback  
 Outputs: Points  
 Use Cases: Manage I-mite  
 Manage I-bundle

---

### ***Feedback***

An Eduweb user will be able (and asked) to provide feedback for each I-mite or bundle she attends. This feedback will be used in order to improve the e-learning content.

Inputs: Useful (5 star format), Right level (5 star format), Right I-mite sequence(5 star format) text-box (for optional further feedback)  
 Outputs: Confirmation of saved feedback  
 Exception: L-mite feedback will not have the “Right I-mite sequence option”  
 Use Cases: Provide Feedback

---

## Search

The Eduweb Learner (anonymous consumer or trainee) specifies the filters for the I-mite or I-bundle she is interested in and based on these filters the system serves the appropriate results.

Inputs:	Keyword, topic, I-mite/I-bundler creator, topic, level
Outputs:	Filtered Results
Use Cases:	Study I-mite, follow bundle

---

## Create I-mite

A Trainer creates an I-mite, providing the I-mite's content and specifies the required metadata.

Inputs:	Content (video, image, slide presentation etc.), level of expertise needed, assessment quiz, tags, keywords, name
Outputs:	L-mite for approval
Use Cases:	Manage I-mite

---

## Create I-bundle

A Trainer creates an I-bundle, providing the I-mite's she wants to use for the I-bundle and specifies the required metadata.

Inputs:	L-mites to be used, Sequence of I-mites, level of expertise, assessment quiz, tags, keywords, name
Outputs:	L-bundle
Use Cases:	Manage I-bundle

---

## Approval

An Eduweb Guru overviews an I-mite's content which requires approval decides if it should be published or not.

Inputs:	L-mite, Eduweb Guru input (approve or reject I-mite), #Gurus that approved the I-mite
---------	---

Outputs:	Approved L-mite which will be published, Rejected L-mite “returned” to its creator for improving
Use Cases:	Approve I-mite

---

## Report

A user reports an I-mite or I-bundle if she believes that its content is for example poor or irrelevant. The content creator must be notified if a certain amount of reports has been reached.

Inputs:	L-mite/L-bundle reported, reason (optional text), current #reports
Outputs:	New #reports, Report summary (user is notified)
Exception:	If #reports threshold is reached, delete the I-mite/I-bundle
Use Cases:	Report L-mite/L-bundle

---

## L-mite removal

The content creator or Eduweb Guru decides than an I-mite she created should no longer be publicly available. L-mites are not deleted because they might be part of existing I-bundles.

Inputs:	L-mite to be deleted
Outputs:	Delisted L-mite (I-mite which cannot be accessed via the search function and can only be viewed in I-bundles that it is already a part of.
Use Cases:	Delete I-mite

---

## L-bundle removal

The trainer decides than an I-bundle she created should no longer be publicly available.

Inputs:	L-mite to be deleted
Outputs:	Delete L-bundles. L-bundles are deleted and can no longer be accessed.
Use Cases:	Delete I-bundle

---

## User Deletion

The trainer decides that an l-bundle she created should no longer be publicly available.

Inputs:	User confirmation for account deletion
Outputs:	Deleted account, removed/deleted account's content.
Use Cases:	Deleted account

---

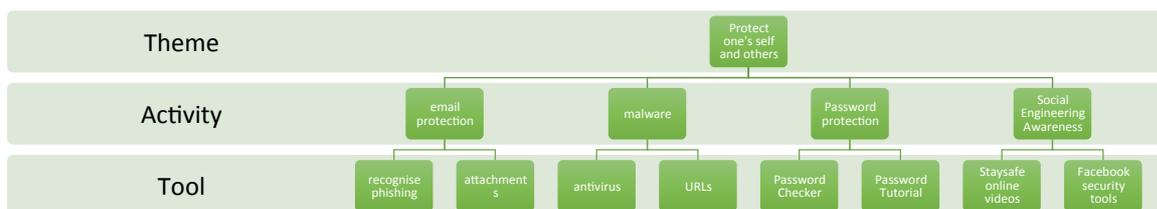
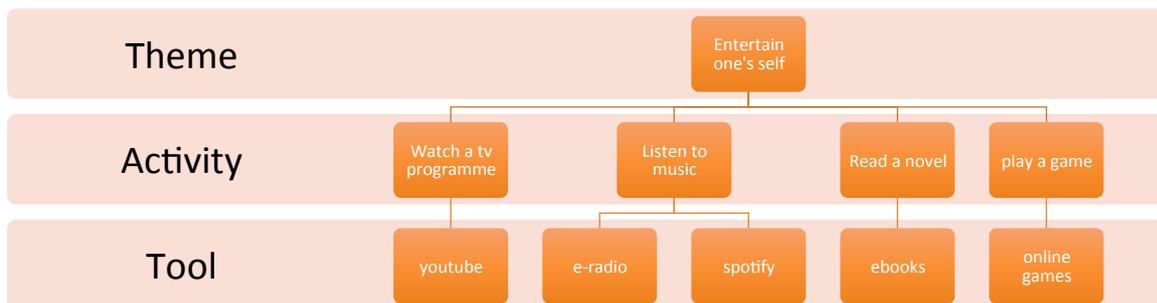
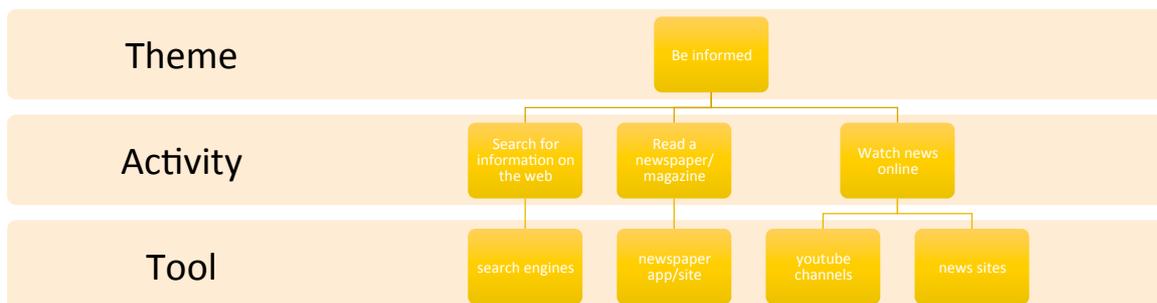
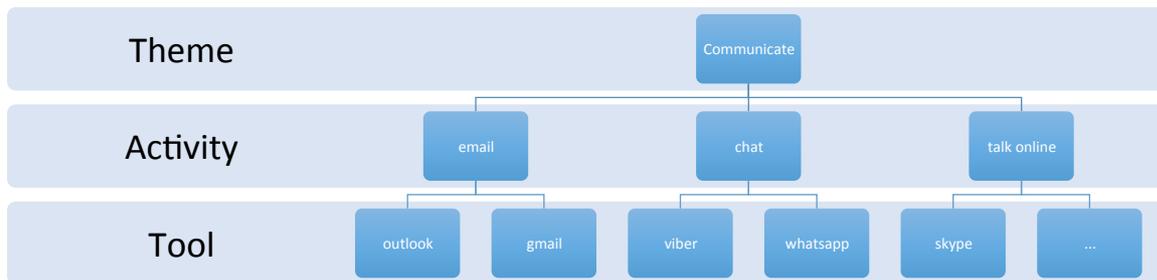
### ***Follow trainer***

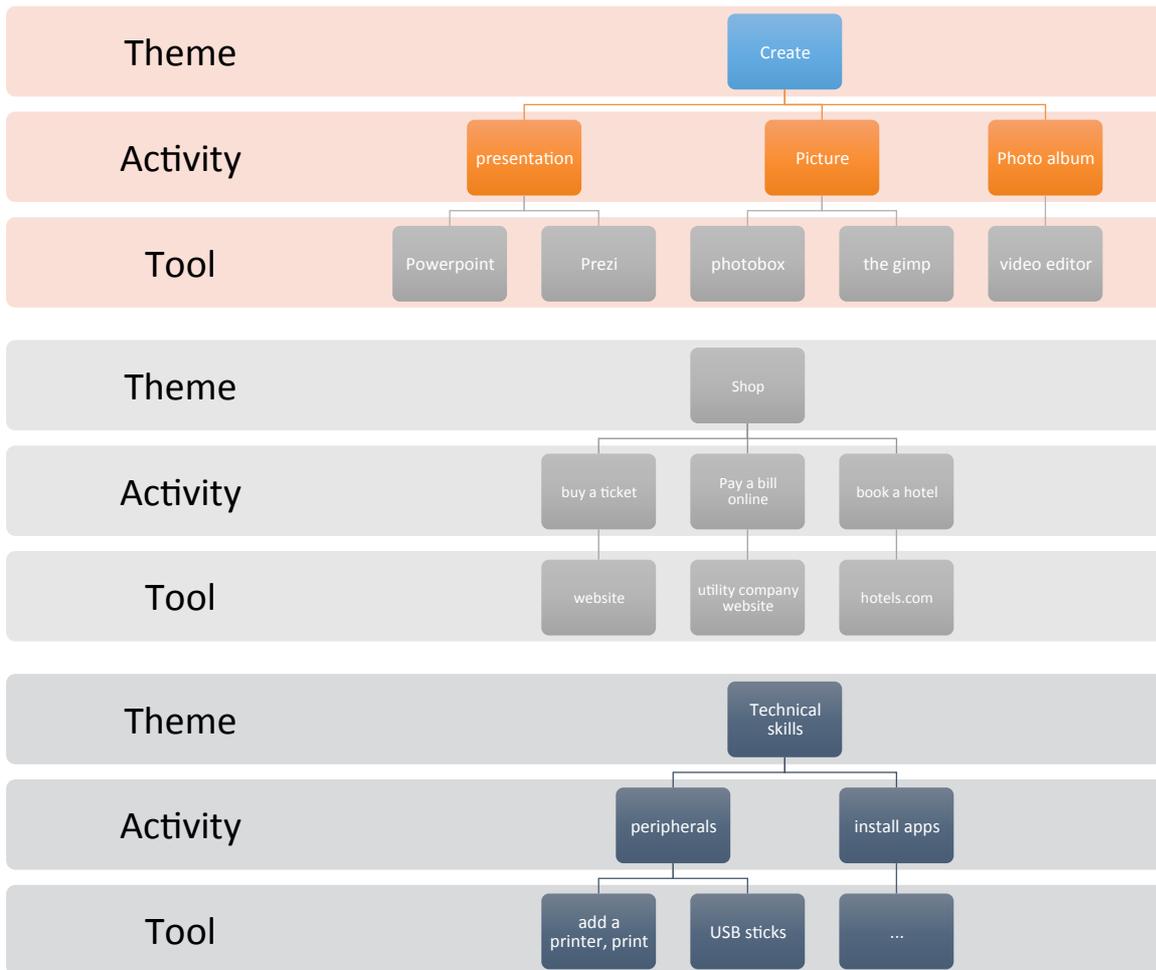
The l-earner decides he wants to be notified of a trainer's publications

Inputs:	Follow button pressed
Outputs:	Incremented amount of trainer's followers
Use Cases:	Follow trainer

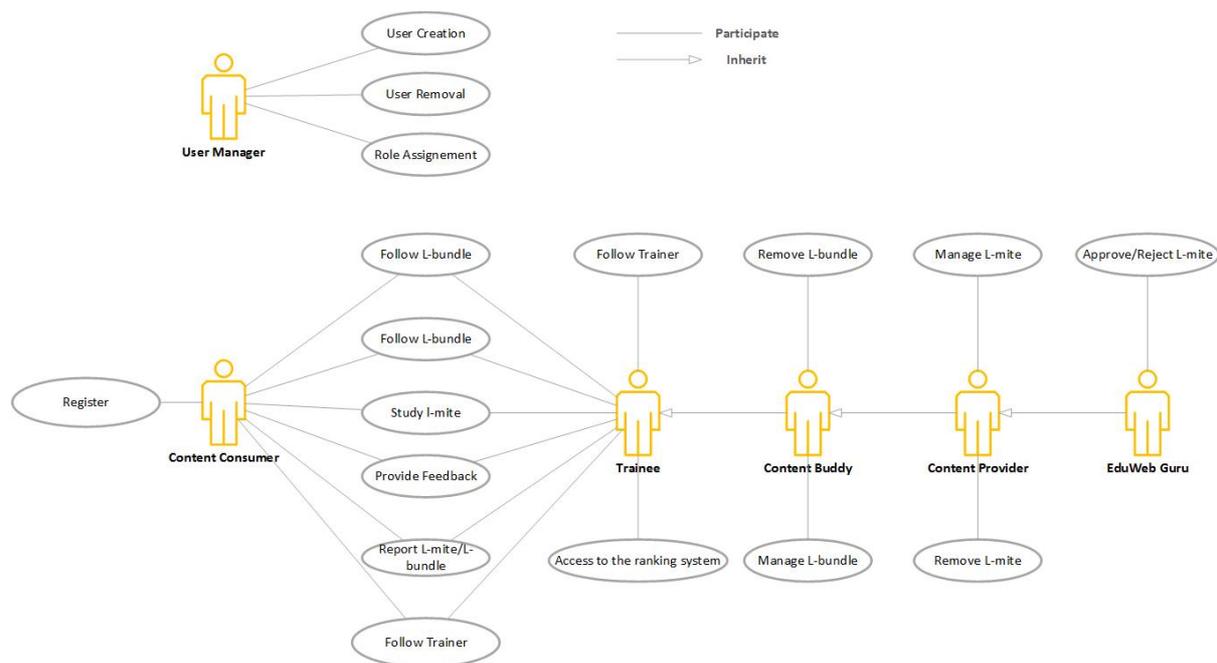
---

**Appendix 1. Themes, topics & activities (1-mite subjects)**





## Appendix 2. Use Case Diagram





Regional Directorate of Primary  
and Secondary Education  
in Western Greece



Министерство на младежта  
и спорта



ΠΕΙΡΑΜΑΤΙΚΟ ΣΧΟΛΕΙΟ  
ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΠΑΤΡΩΝ  
ΓΥΜΝΑΣΙΟ



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