Digital School
Interactive textbooks, Photodentro Educational Repositories and National Aggregator, and the Digital Educational Platform “e-me”

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Coordinated and implemented by CTI
Duration: 5 years (2010-2015)
Budget: 9.5 M euro

~ 200 teachers, academic professors, pedagogical and domain experts,
~ 80 engineers and technical personnel
1. **Interactive Textbooks** *(ebooks.edu.gr)*
   The official portal of the Greek MoE for hosting and delivering digital school textbooks

2. **The Photodentro Content Repository Infrastructure** *(photodentro.edu.gr)*
   An ecosystem of educational content repositories and the Greek national aggregator for school educational content

3. **The Digital Educational Platform e-me** *(eme.edu.gr)*
   A personal learning environment for pupils and teachers
All school textbooks (~250) are made available online in various digital forms, either pdf or editable html format.
Enrichment of html textbooks versions with interactive click-and-play resources

More than 100 interactive textbooks for almost all school disciplines

Biology – High School, Grade A, Ch. 7.9

Mathematics, Primary School – Grade 6

Decimal numbers – micro experiment 2
More than 20,000 unique visitors per day and more than 2,800,000 unique visitors within the last year.

Interactive textbooks: a familiar browsing interface for teachers to navigate through learning resources.
The Greek National Digital Educational Content Repository Infrastructure for schools
Photodentro LOR (photodentro.edu.gr/lor)
The Greek National Learning Object Repository for primary and secondary education

Search for a learning object:
Enter one or more keywords that describe the learning object...

Browse by choosing one of the following options:
- Collections
- Subject Areas
- Learning Resource Type
- Educational Context
- Student Age
- Language
- Thematic Classification

About Photodentro LOR | Featured Learning Objects

Photodentro LOR v2.0 | powered by DSpace open source repository software

Digital School: Digital Educational Content, CTI, May 2014
Photodentro LOR (photodentro.edu.gr/lor)

Open Access Repository

Photodentro LOR hosts learning objects

A Learning Object in Photodentro LOR:
Any digital resource that
1. has as a clear educational purpose
2. is reusable
3. is semantically and functionally self-contained
• 4.300 learning objects

• Digital School community

~120 qualified teachers in 10 domain-specific supervised groups
Photodentro LOR
A quantitative view of learning objects

Number of Learning Objects per Type (jan.2014)

- References
- Presentations & Demonstrations
- Assessment & Evaluation
- Educational games
- Explorations & Learning Activities
- Experiments/simulations
- Models
- Maps
- Graphs/Tables/Diagrams
- Videos
- Texts
- Images
- Sounds

Number of Learning Objects per subject (jan.2014)

- Mathematics
- Geography
- Biology
- Physics
- Chemistry
- Informatics
- Technology
- Aesthetics
- Religious education
- French
- English
Free text search, browsing through collections, subject areas, learning resource type, using filters …
Browsing through Collections

Collections

2010-2015 Digital School  2003-2008 Pleiades...

2010-2015 Digital School

Art
Geography-Geology
Greek Language and Literature
Religious Studies

Technology
Language
Physics

Information and Informational Technologies
Biology
Sustainability Education

Search within results

Education Context
Student Age
Learning Resource Type
Quality certification
Language
Subject Areas

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learning objects include explorations and inquiry-oriented activities, dynamic simulations and experiments, educational games
Using Filters

Search within results

Filters

- Educational Context
- Student Age
- Language
- Thematic Classification

Search within results

Filters

- Educational Context
- Student Age
- Learning Resource Type
- Quality certifiers
- Funding
- Language
- Foreign Language Competences
- Special Needs
- Teaching Approach
- Educational Objective
- Subject Areas

Results 1-10 of 2000

Sort by: Title

Education/High School
AMERICAN/UNITED
Primary

Education/Secondary
AMERICAN/UNITED
Secondary

Education/Primary
AMERICAN/UNITED
Elementary

Education/Adult
AMERICAN/UNITED
Adult

Education/Other
AMERICAN/UNITED
Other

Education/Higher
AMERICAN/UNITED
Higher

Education/Elementary
AMERICAN/UNITED
Elementary

Education/Primary
AMERICAN/UNITED
Primary

Education/Secondary
AMERICAN/UNITED
Secondary

Education/Other
AMERICAN/UNITED
Other

You may choose a filter by name or search for a particular item. 
Requirements for the Photodentro LOR thematic classification system:

- allow classification of resources according to pupils’ perception of how resources are organized
- keep the classification simple (up to three hierarchical levels)
- comply with the national curriculum for primary and secondary education
• Development of an IEEE LOM Application Profile

• Controlled vocabularies: based on the Learning Resource Exchange (LRE) LOM AP
- Click-and-play
- Thumbnail
- Preview Learning Object
- Reproduce a Learning Object
- Reference URL
- Resource URL: URI of the learning resource
- Creative Commons’ Attribution-NonCommercial-ShareAlike license
Based on DSpace open source repository management system

*Photodentro LOR* provides an Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) target.
## Ελεγχος και Επίκυρωση Μεταδεδομένων

### Γενικά Στοιχεία Μαθησιακού Αντικειμένου

<table>
<thead>
<tr>
<th>Τίτλος Μαθησιακού Αντικειμένου</th>
<th>Ελληνικά</th>
</tr>
</thead>
<tbody>
<tr>
<td>Προσθήκη μιας επιπλέον τιμής για το πεδίο Τίτλος Μαθησιακού Αντικειμένου</td>
<td></td>
</tr>
</tbody>
</table>

### Περιγραφή Μαθησιακού Αντικειμένου

| Μικροσκόπια για την κατανόηση και την εμπειρία των κανόνων λογισμού των πανεπιστημίων. Με τη βοήθεια της λογισμικής, οι χρήστες μπορούν να διαβάσουν Βεννό διάγραμμα ενός λογιστικού τύπου. | Ελληνικά |

### Λέξεις-κλειδιά

| Παράγοντα: Κανόνες λογισμικού, Διάγραμμα Βεννό, Ενώσεις, Ταμή, Συμπληρωματικά ενδεχόμενα | Ελληνικά |

| Προσθήκη μιας επιπλέον τιμής για το πεδίο Λέξεις-κλειδιά |        |
Learning Objects being identified in existing educational software and learning scenarios, developed during the last decade.
Photodentro Educational Video hosts curriculum related, short length videos suitable for in-class use.
Collections

Greek Educational TV video collections (700) i-create contests - winning videos

Energy Bits Documentary Series Energy Bits “Have Your Say” contest - winning videos
It will host learning resources developed by teachers
Goal: creation of a professional community of teachers for sharing learning resources
Photodentro EduSoft
(photodentro.edu.gr/edusoft)

Photodentro for Educational Software tools & multimedia titles

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THE BIG PICTURE: Photodentro Federated Architecture for Learning Resources
External Cultural Collections

Collections from museums, libraries, archives etc

Around 200,000 metadata records will be examined in order to select and then enrich with pedagogical metadata around 10,000 cultural learning resources.
MINT
- supports the ingestion of metadata records from various external sources
- facilitates the mapping and transformation of their metadata to the corresponding metadata elements of an IEEE LOM based Application Profile.
Photodentro MEXT: A metadata authoring environment and educational repository system that supports the description of aggregated digital resources with additional (pedagogical) metadata.

Supports workflows for the effective selection and organization of resources, massive metadata editing processes etc.
Photodentro
National
Aggregator for educational content

A e-service for harvesting and accumulating educational metadata from various repositories and collections thus serving as the central access point to learning resources for schools in Greece.
Photodentro Quality Stamps

Diagram showing relationships between entities:
- Legal Entity
- Group of Entities or a Project
- Certifier (Stamper)
- Quality Stamp
- Stamping

Relationships:
- Certifier (Stamper) has N Quality Stamps
- Certifier (Stamper) exists N Stamping
- Quality Stamp has N Process, Evaluation Criteria, Brand Name
- Stamping has N Learning Object, Collection, Content Providers
The Digital Educational Platform e-me (eme.edu.gr)

A personal learning environment for pupils and teachers

Overall approach & business model that ensure sustainability
A “container” for content and applications

- a safe working space for pupils and teachers
- with a modern and intuitive interface

Provide some basic functionality:

- store and share content,
- communicate and collaborate
- publish their work,
- exploit efficiently learning resources.

E-me App Store
Best Practices in using learning resources

a network of innovative teachers

best practices in the effective use of digital learning resources

(tools: contests, quality badges for schools, workshops at a local level, etc)
THANK YOU