OPEN CONTENT, OER REPOSITORIES, INTERACTIVE TEXTBOOKS, AND A DIGITAL SOCIAL PLATFORM: THE CASE OF GREECE

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Computer Technology Institute & Press
“DIOPHANTUS” (CTI)

- A non-profit research and technology organization, located in Greece
- Founded in 1985
- Official technological partner of the Greek Ministry of Education (MoE) for ICT solutions in education

Areas of responsibility:
- Greek School Network
- State programs for teachers training in ICT
- Digital educational resources and content-based services for schools
- Electronic infrastructure of the MoE
- Publishing school textbooks
From “Odysseia” pilot program to the Digital School initiative

1996-2001
“Odysseia”
1st nation-wide pilot program for ICT in all school subjects

1998-2002
localization of international educational software products

2003-2008
large-scale national effort to develop Greek educational software
Digital School Greek National Initiative

Digital School I

Digital Educational Platform, Interactive Textbooks, and Learning Object Repositories

Coordinated and implemented by CTI
Duration: 5 years (2010-2015)
Budget: 8.7 M euro

~ 200 teachers, academic professors, pedagogical and domain experts, ~ 80 engineers and technical personnel

European Social Fund
Best Practice in Greece (ranked 4th)
Digital School Greek National Initiative

Expanding and Exploiting the Digital Educational Platform, the Interactive textbooks and the Photodentro OER Repositories & National Aggregator

Coordinated and implemented by CTI
Duration: 2 years (2017 - 2018)
Budget: 2.24 M euro

~ 70 teachers, academic professors, pedagogical and domain experts,
~ 30 engineers and technical personnel
The underlying idea

Greece: a very centralized educational system

Use e-textbooks as a vehicle towards familiarization of teachers with digital learning resources
Open e-textbooks
e-books.edu.gr

All school textbooks openly available online for all, in multiple digital formats

- 200+ textbooks in html format
- Full sets of textbooks (including teacher guides and student workbooks) in pdf format for 300+ lessons
- Textbooks for visually impaired students (ambyopia) (800 volumes)
- Textbooks in iBook format
Open Educational Resources (OERs)

7,000 open, click-and-play new learning resources

With the active participation of the educational community

Since 2011

- 200 qualified teachers
- in 13 domain-specific supervised groups
- 12 scientific coordinators (academic professors)
Learning Objects

Small self-contained units of learning which

• have educational value
• are semantically and technically autonomous
• are reusable
Open Educational Resources - examples

A simulation of a simple harmonic motion along with a graphical representation of the force vs displacement.
Open Educational Resources - examples

A simulation for studying the focus functions of a human eye affected by myopia or presbyopia.

- increase or decrease the intense of myopia / presbyopia
- add corrective lenses

Ένα μάτι με μυωπία μοιάζει με αυγό. Οι φωτεινές ακτίνες εστιάζουν μπροστά από τον αμφιβληστροειδή κιτώνα, με αποτέλεσμα τα μακρινά αντικείμενα να φαίνονται θολά. Στην πρεσβυωπία ο φακός του ματιού χάνει τη δυνατότητα προσαρμογής του, συνήθως με την πάροδο του χρόνου. Οι φωτεινές ακτίνες εστιάζουν πίσω από τον αμφιβληστροειδή κιτώνα, με αποτέλεσμα τα κοντινά αντικείμενα να φαίνονται θολά. Και στις δύο περιπτώσεις το πρόβλημα διορθώνεται συνήθως με κατάλληλα γυαλιά.
Types of Learning Objects

Learning assets
- image
- text
- audio
- video

Simple learning objects
- model
- 3D/VR
- artifact
- map
- conceptual map
- music score
- broadcast

Optical representations - Visualisations - Simulations
- data
- dynamic visual representation
- visualisation
- simulation
- experiment
- micro-experiment

Explorations and Open activities
- inquiry
- exploration
- project
- open activity

Exercises and Educational games
- drill and practice
- educational game
- assessment

Presentations and Demonstrations
Learning scenarios and Lessons
Tools and Applications
Guides, Textbooks and Glossaries
Subject Areas

- Modern Greek Language
- Mathematics
- Physical Education
- Physics
- Environmental Education/Education for Sustainable Development
- Chemistry
- Drama/Theater in Education (DiE/TiE)
- Biology
- Visual Arts Education
- Geography - Geology
- Music Education
- Modern Greek Literature
- English Language
- Religious Education
- Information & Communication Technologies (ICT)
- Other Subject Areas
Interactive Textbooks

e-books.edu.gr

116 textbooks, enriched with interactive, click & play learning objects
Interactive Textbooks
e-books.edu.gr

The official portal of the Greek MoE for hosting and delivering digital school textbooks

600,000 unique visitors per month

http://end-educationconference.org/
Enriched e-textbooks
- a good alternative for associating resources with learning goals of the curriculum
- a familiar browsing interface for teachers to navigate through learning resources

What if textbooks change?
Digital School content-based e-Services

http://dschool.edu.gr
Photodentro OER Repositories
It hosts Learning Objects

Small, reusable units of learning
Semantically autonomous
Open Licenses (CC BY NC SA)

http://photodentro.edu.gr/lor

June 2018: ~9,000 Learning Objects
Photodentro Browsing & Searching

Browsing by Subject

13 three-level thematic classification taxonomies

Browsing by Learning Resource Type

Using Filters

Free text search

Search for a learning object:
Educational Video

Short length (<10min)
Curriculum related
Core-concept, suitable for in class use
Open Licenses (CC BY NC SA)

http://photodentro.edu.gr/video

June 2018: ~ 1000 video
Educational Software
(for download)

- Educational multimedia titles
- Sets of learning scenarios
- Educational Software Tools
- Open learning environments

http://photodentro.edu.gr/edusoft

June 2018: 143 educational software products
User Generated Content
Open Educational Resources

Goals:
• Provide a place where teachers can publish and share their own Open Educational Resources
• Build a community of teachers

Overall Approach:
Trust teachers first

No prior evaluation of resources
Teachers have Public Profile

http://photodentro.edu.gr/ugc

Apr 2018: 760 teacher-generated learning objects
Open Educational Practices

Reusable teaching practices on resource-based learning

OEPs
- draw upon the use, reuse, or creation of OERs
- have been implemented in a real educational setting
- their creators openly share results, experiences & reflections

http://photodentro.edu.gr/oep

i-participate action
Digital School content-based e-Services

http://dschool.edu.gr

Interactive Textbooks
Photodentro OER Repositories
Photodentro National Educational Content Aggregator
Digital Educational Platform e-me
Photodentro Greek National Educational Content Aggregator

Photodentro portal
central access point to school-based learning resources in Greece

Photodentro Aggregator system
national service for harvesting educational metadata from various external repositories and collections

http://photodentro.edu.gr
Photodentro Layered Architecture

GREEK NATIONAL EDUCATIONAL CONTENT AGGREGATOR

Photodentro MEXT (Resource Selection & Metadata Enrichment)

EDUCATIONAL CONTENT NATIONAL AGGREGATION SERVICE

PORTAL

OAI-PMH

Search API

AGGREGATION LAYER

OAI-PMH

COLLECTION MANAGEMENT LAYER
Photodentro Greek National Educational Content Aggregator

15 Educational Repositories

17 content providers

~18,000 learning objects
Digital School content-based e-Services

http://dschool.edu.gr

Interactive Textbooks | Photodentro OER Repositories | Photodentro National Educational Content Aggregator | Digital Educational Platform e-me

http://end-educationconference.org/

Elina Megalou, CTI (Greece) @ END 2018, 23-25 June, Budapest, Hungary
A digital platform to **serve as the main digital working space** for 1,000,000 pupils and 120,000 teachers in primary and secondary education.
A new platform?

- Analysed pupils and teachers needs via an open call for requirements

- surveyed on new generation educational platforms and international trends;

- examined available open source solutions
e-me: The Greek Digital Educational Platform for students & teachers

e-me.edu.gr

open, but safe, modern, social, cloud-based digital educational platform

e-me design principles

❖ Putting pupils first
appealing them to adopt e-me in their everyday activities

❖ Ensure smooth transition to the digital world
use of real-world metaphors

❖ Follow a sustainable model for growth and extension
a modern and intuitive user interface

a container of third-party apps
safe environment, where access is limited only to authenticated members, like a “safeguarded” Facebook

e-me social network:  
✓ contacts (friends)  
✓ groups (hives)  
✓ communities
e-me Hives: collaboration spaces

Hive:
- key structural component of e-me
- main collaboration space for pupils and teachers
- created by both pupils & teachers
e-me core functionality

- Personal storage, cloud-based file sharing
- Social networking
- Skype-like communication
- Workgroups and collaboration spaces
- e-portfolio system
- e-me content
- blogs
- Trusted store of (free) e-me apps
Digital School Content-based e-services
dschool.edu.gr
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THANK YOU!