

## **English and Digital Literacies**

Unit 8: Digital Repositories and Photodentro LOR

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## Repositories

### Definition (Re-pos-i-tor-y):

- an abundant source or supply; storehouse.
- a place where things are kept for exhibition.







## Digital repositories

- A digital repository is a mechanism for storing, maintaining, managing, retrieving and storing of digital content. It uses open standards to ensure that the content it contains is accessible and can be searched and retrieved for later use.
- The contents may vary depending on the purpose and users e.g. research articles, e-theses, elearning objects and teaching materials.



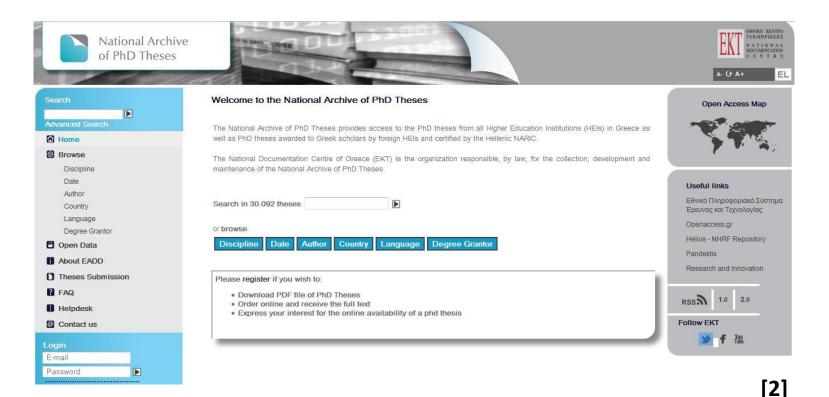
# Aims and Benefits of Digital Repositories

- They may benefit researchers, academics, students and teachers, institutions and special interest groups.
- Different models of digital repositories have different advantages for each interest group.



**Examples of Greek Online Repositories** 

### The National Archive of PhD Theses



http://phdtheses.ekt.gr



# Acropolis Educational Resources Repository



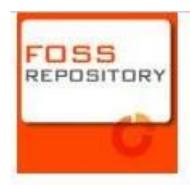
http://repository.acropolis-education.gr/



[3]

## Types of Digital Repositories

## Software Repositories



#### FOSS Repository

The FOSS repository includes content produced by the Greek Free / Open Source Software Society (its members, communities and developers) as a result of activities related to Free Software, Open Hardware and Open Content. It provides open access to rich content such as reports, presentations, digital collections, conference proceedings, studies, videos and photos. The repository's organized digital environment also offers advanced navigation and search functions. Registered users can submit their work online and contribute to the repository.

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http://repository.ellak.gr/ellak/



## **Academic Repositories**



#### **Helios Repository**

The repository offers free and unrestricted access to scientific and research material from the National Hellenic Research Foundation. Navigate through international publications, training material, sound and image files, research data, conference proceedings, books, training material, sound and image files which are available in a fully organized environment, compatible with international standards.

http://helios-eie.ekt.gr/EIE/





## Institutional Repositories



#### **Pandektis**

Pandektis, a Digital Thesaurus of Primary Sources for Greek History and Culture includes major digital collections of Greek history and civilization. The collections have been produced by the Institute of Neohellenic Research, the Institute of Byzantine Research and the Institute of Greek and Roman Antiquity. The National Documentation centre (EKT) was responsible for the digitization and electronic publication of this collection.

http://pandektis.ekt.gr/pandektis/

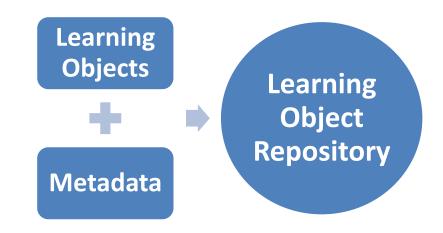
[6]



### Learning Object Repositories – LORs

A Learning Object Repository (LOR) is an online digital library of searchable learning objects that have been catalogued for educational purposes, along with a set of management, search and access mechanisms.

A LOR stores learning objects and their metadata.





## Learning objects: Definition (1/2)

"A learning object is any digital resource that can be reused to support learning. The term 'learning objects' generally applies to educational materials designed and created in small chunks for the purpose of maximizing the number of learning situations in which the resource can be utilized" (Wiley, 2000).



## Learning objects: Definition (2/2)

"A digital self-contained and reusable entity, with a clear educational purpose, with at least three internal and editable components: content, learning activities and elements of context. The learning objects must have an external structure of information to facilitate their identification, storage and retrieval: the metadata" (Laverde et al, 2007).



# Educational content as learning objects

Learning objects are a new way of thinking about learning educational content.

Traditionally, educational content has a long duration. Learning objects are much smaller units of learning, typically ranging from 2 minutes to 15 minutes.



## Learning objects: Characteristics

- Are self-contained each learning object can be used independently.
- Are reusable a single learning object may be used in multiple contexts for multiple purposes.
- Can be aggregated learning objects can be grouped into larger collections of content, including traditional course structures.
- Are tagged with metadata every learning object has descriptive information allowing it to be easily found by a search.



## Requirements for learning objects

### A learning object should:

- have a clear educational purpose,
- be reusable, i.e. it can be used in multiple contexts for multiple purposes,
- be semantically and functionally selfcontained.



## Metadata of Learning Objects

### Metadata:

- data describing other data.
- description accompanying each learning object.

**Aim**: to facilitate the search and retrieval of learning objects stored in repositories, digital libraries, databases it is necessary to describe them with metadata (e.g. title, creator, rights use, technical standards, etc.).



## National learning object repositories

A common strategy, particularly in European countries.

For primary and secondary education (K-12) in particular, National Learning Repositories have gained significant growth, since, in order to meet the requirements of national curricula goals, culture, and language, the development of learning resources happens in most cases at a National Level (Megalou & Kaklamanis 2014).



# National learning object repositories: Examples

- NDLR, the National Digital Learning Repository of Ireland.
- SWITCH, the National Digital Learning Repository of Switzerland.
- the **Austrian** repository for schools, Bildungspool.
- "CARNet School Portal", the Croatian national school repository.
- "Resursi.e-edu.bg" and "Znam.bg", the Bulgarian National Educational Repositories.



# National learning repositories for primary and secondary education (1/2)

### **Common Characteristics:**

- they generally host resources that support the national curricula.
- in most cases they serve as the central point of access to learning resources for schools, particularly in countries with centralized educational systems.



# National learning repositories for primary and secondary education (2/2)

### **Common Characteristics:**

- they are usually built in the context of national initiatives and programs aiming at the introduction of ICT in education.
- they are funded by local, national, or EU funds, and are usually supported by Ministries of Education (MoE) or local authorities.



# Greek National Policy for Digital Educational Content (1/2)

- Focus on the creation of reusable units of learning.
- Promote Open Educational Resources (OERs).
- Promote re-using, remixing, and re-purposing of existing digital learning resources.



# Greek National Policy for Digital Educational Content (2/2)

- Improve digital infrastructure to facilitate search, retrieval, access and utilization of digital learning resources for all (teachers, pupils, parents, everyone)
- Promote the active role of teachers and pupils in the creation, documentation and evaluation of digital learning resources.

## Photodentro LOR (1/2)

- The Greek National Learning Object Repository for primary and secondary education.
- It hosts reusable learning objects (small, self-contained reusable units of learning).
- It is open to everyone, pupils, teachers, parents, as well as anybody else interested.



## Photodentro LOR (2/2)



http://photodentro.edu.gr/



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## The Project

Co-financed by the European Union (ESF) and National funds in the context of Operational Programme "Education and Lifelong Learning" of the Greek National Strategic Reference Framework (NSRF), coordinated and implemented by the technical partner of the Greek Ministry of Education "Computer Technology Institute and Press-CTI DIOPHANTUS" (www.cti.gr), Strategy and Digital Educational Content Directorate.





### Photodentro

### <u>Greek National Educational Content</u> <u>Aggregator Photodentro</u>:

a national service for harvesting and accumulating educational metadata from various collections.

#### **Photodentro LOR:**

hosting learning objects.

### **Photodentro**

#### **Photodentro UGC:**

hosting learning resources developed by teachers - the usergenerated branch of the ecosystem

#### **Photodentro EduVideo:**

hosting short length educational videos suitable for in-class use



## Photodentro: Learning object specifications

The learning objects in Photodentro LOR fulfil the following specifications:

- They have a clear educational purpose.
- They are reusable.
- They are independent, standing on their own.
- They follow the aims of the Greek national curricula.
- They are available on-line.
- They are open to public for educational use.



## Photodentro browsing

Learning resources are organized in **collections**.

Collections are grouped into bigger **communities** which provide content of the same subject.

### Browsing in Photodentro:

- Browsing by collection.
- Browsing by subject.
- Browsing by learning resource type.
- Browsing by filters.

## Browsing by collections

Enables users to navigate through the hierarchy of Photodentro LOR's collections and sub-collections and explore the learning objects in each collection: Arts, Geography, Geology, Greek Language and Literature, Religious Studies, Mathematics, English Language, French Language, Informatics and NT, Biology, Physics, Chemistry.

























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## Browsing by subject

Users go through the hierarchy of terms in the Photodentro LOR thematic classification taxonomy.



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## Taxonomy for English: Thematic areas

- Sports,
- Nutrition,
- Education,
- Market,
- Media,
- Science and Technology,
- Employment,

- Housing and Environment,
- Daily and Social Life,
- Literature, Arts, Culture,
- Travelling,
- Means of Transport,
- Health and Care.



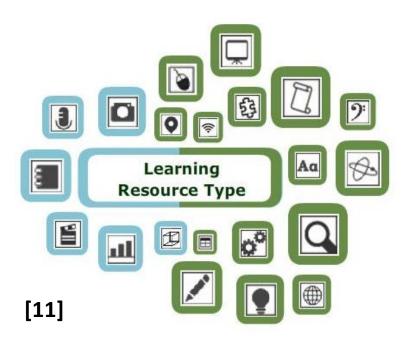
# Taxonomy for English: Concepts

- Reading,
- Listening,
- Writing,
- Speaking,
- Vocabulary (meaning, usage, form),
- Grammar (meaning, usage, form).



## Browsing by learning resource type

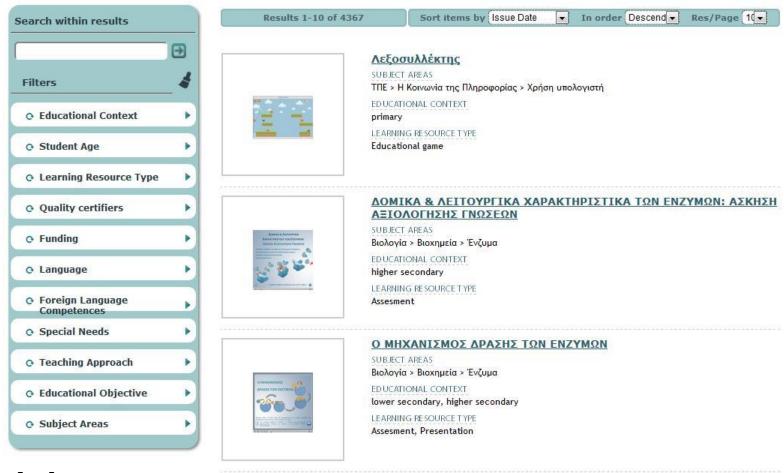
**Assets:** Image, audio, video, text, model, data.



**Resources**: Presentation, demonstration, course, educational scenario, role play, educational game, website, webblog, wiki, webcasts, social media, glossary, simulation, experiment, application, assessment, drill and practice, case study, open activity, exploration, enquiry-based activity, project, guide, textbook, music score, map.



## Browsing by filters

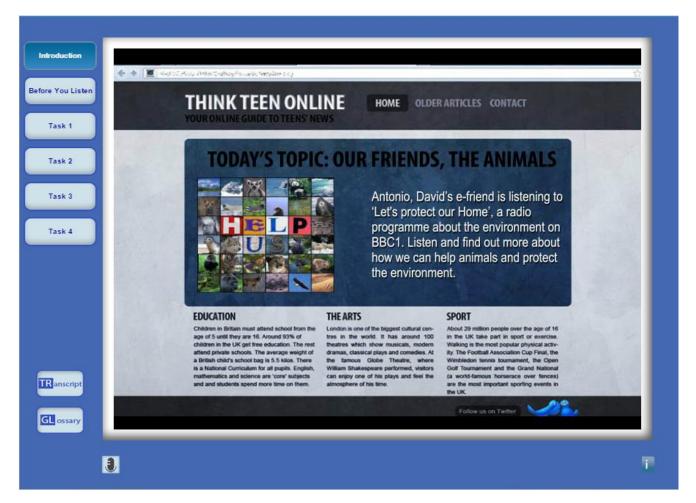


[12]



Learning Objects for the English Language in the Digital School Interactive Books

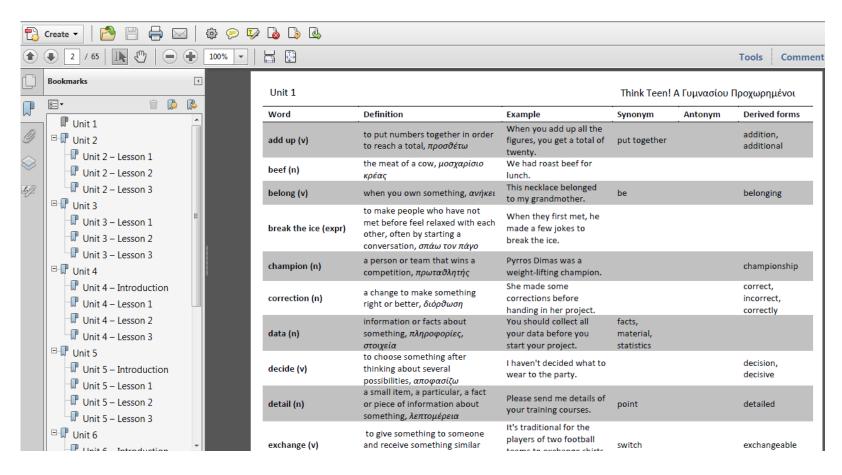
# **Listening Apps**





[13]

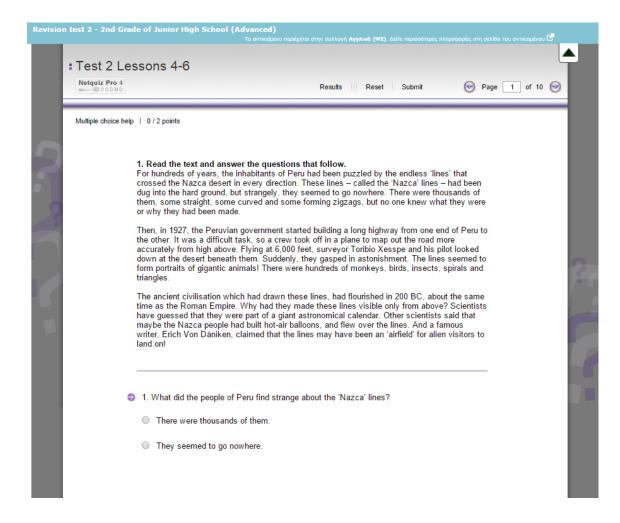
# Digital Glossaries



[14]



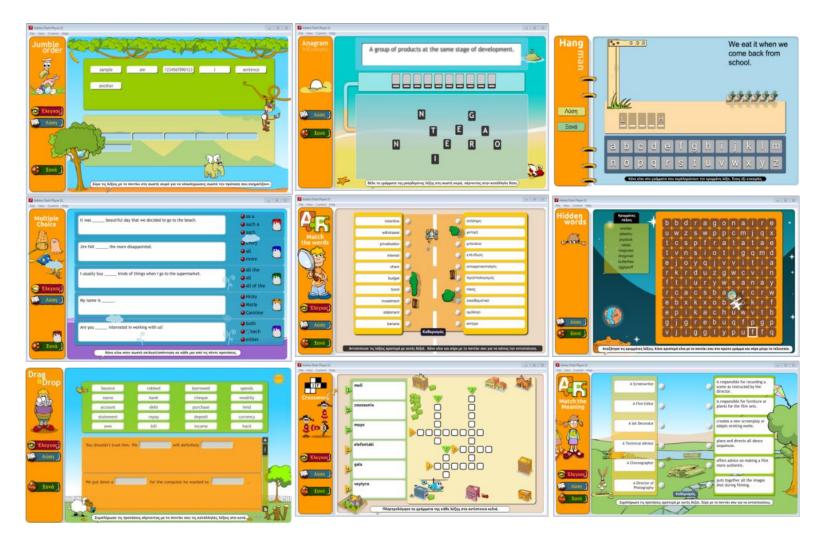
## Self Assessment Tests



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# Edugames





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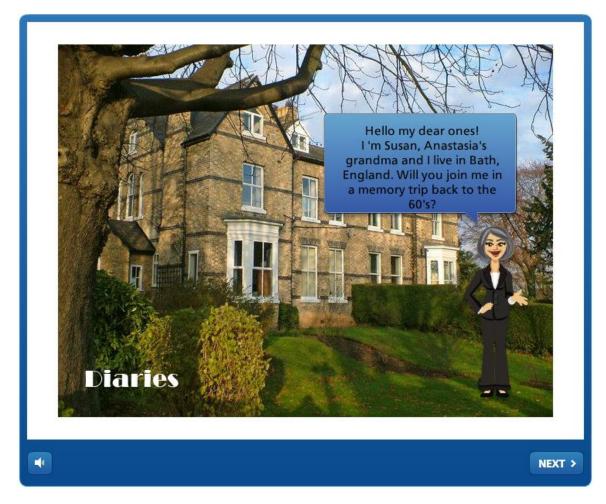
# **Mystery Games**



[17]



# Reading Apps



[18]



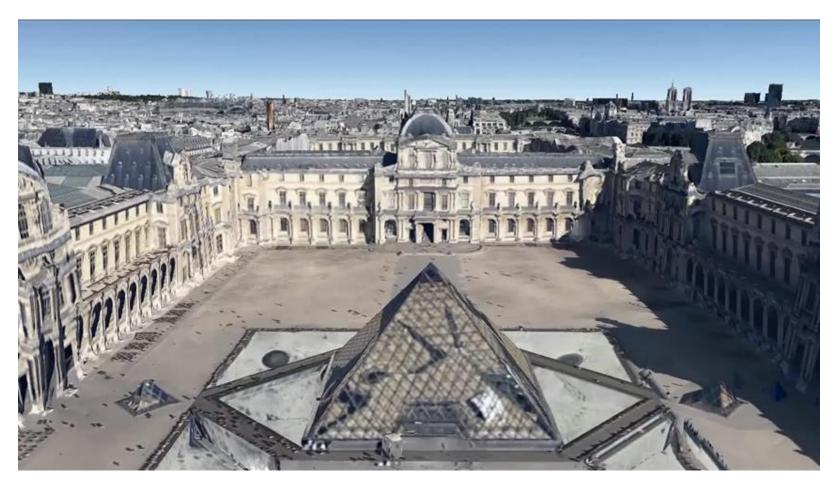
# **Digital Stories**



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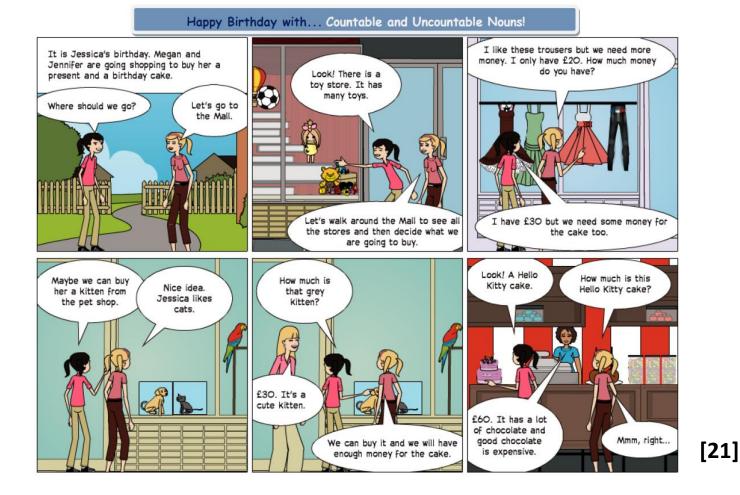
# **Virtual Tours**



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## **Grammar Comics**





### Interactive textbooks



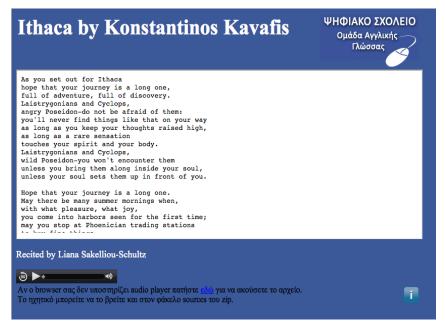


# **Applications for Photodentro**

### on the digital textbook



### in Photodentro



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### Metadata in Photodentro

- **General Metadata** (general information about the learning object, such as title, description, keywords, language, etc.).
- Educational Metadata (metadata about the educational aspect of the learning object).
- Legal Metadata (information about copyrights and restrictions of use for the learning objects).
- **Technical Metadata** (technical information about the learning object).



# **Examples of English Learning Objects**



#### Hangman - Food

ΘΕΜΑΤΙΚΗ ΠΕΡΙΟΧΗ

Αγγλική Γλώσσα > Διατροφή και αγορά > Λεξιλόγιο (σημασία - χρήση - μορφή)

ΒΑΘΜΙΔΑ ΕΚΠΑΙΔΕΥΣΗΣ

δημοτικό

ΤΥΠΟΣΑΝΤΙΚΕΙΜΕΝΟΥ

ασκήσεις πρακτικής και εξάσκησης



#### Hidden Words - Adverbs of Frequency

**ӨЕМАТІКН ПЕРІОХН** 

Αγγλική Γλώσσα > Εκπαίδευση > Γραμματική (σημασία - χρήση - μορφή)

ΒΑΘΜΙΔΑ ΕΚΠΑΙΔΕΥΣΗΣ

δημοτικό

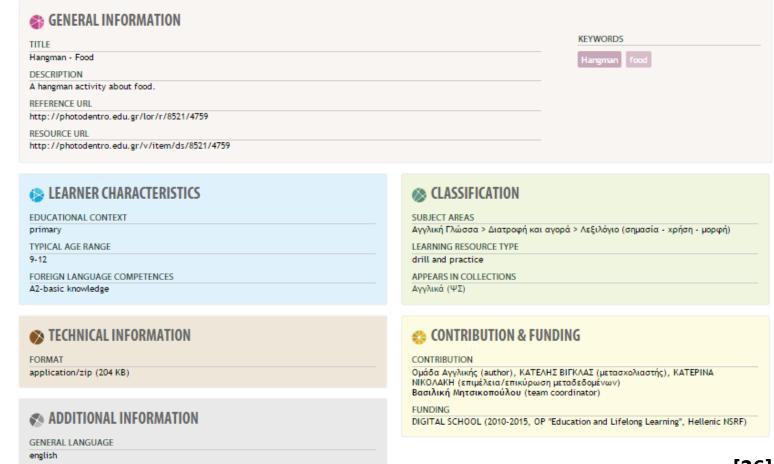
ΤΥΠΟΣΑΝΤΙΚΕΙΜΕΝΟΥ

ασκήσεις πρακτικής και εξάσκησης





### Metadata Table





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# Conclusions from the use of Photodentro (1/2)

- It requires the cooperation of experts from different specializations.
- The use of non widely used languages, such as the Greek language, restricts the use of its content.
- A great number of educational content is sensitive to changes in the national curricula and may need modifications.



# Conclusions from the use of Photodentro (2/2)

- Educational content may soon become outdated due to rapid changes in technologies (e.g. compatibility issues).
- Copyright issues is a major concern for all the learning objects to be included in the repository.



## References

- Laverde, A. C., Cifuentes, Y. S., & Rodriguez, H. Y. R. (2007). Toward an instructional design model based on learning objects. *Educational Technology Research and Development*, 55(6), 671-681.
- Megalou, E. and Kaklamanis, C. (2014) Photodendro LOR, the Greek National Learning Object Repository.
- Wiley, D. A. (2000). Getting Axiomatic about Learning Objects. Retrieved from <a href="http://reusability.org/axiomatic.pdf">http://reusability.org/axiomatic.pdf</a>.



# Financing

- The present educational material has been developed as part of the educational work of the instructor.
- The project "Open Academic Courses of the University of Athens" has only financed the reform of the educational material.
- The project is implemented under the operational program "Education and Lifelong Learning" and funded by the European Union (European Social Fund) and National Resources.





# Notes

# Note on History of Published Version

The present work is the edition 1.0.



### Reference Note

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