

# The DELOS Reference Model as a Lingua Franca of Digital Libraries

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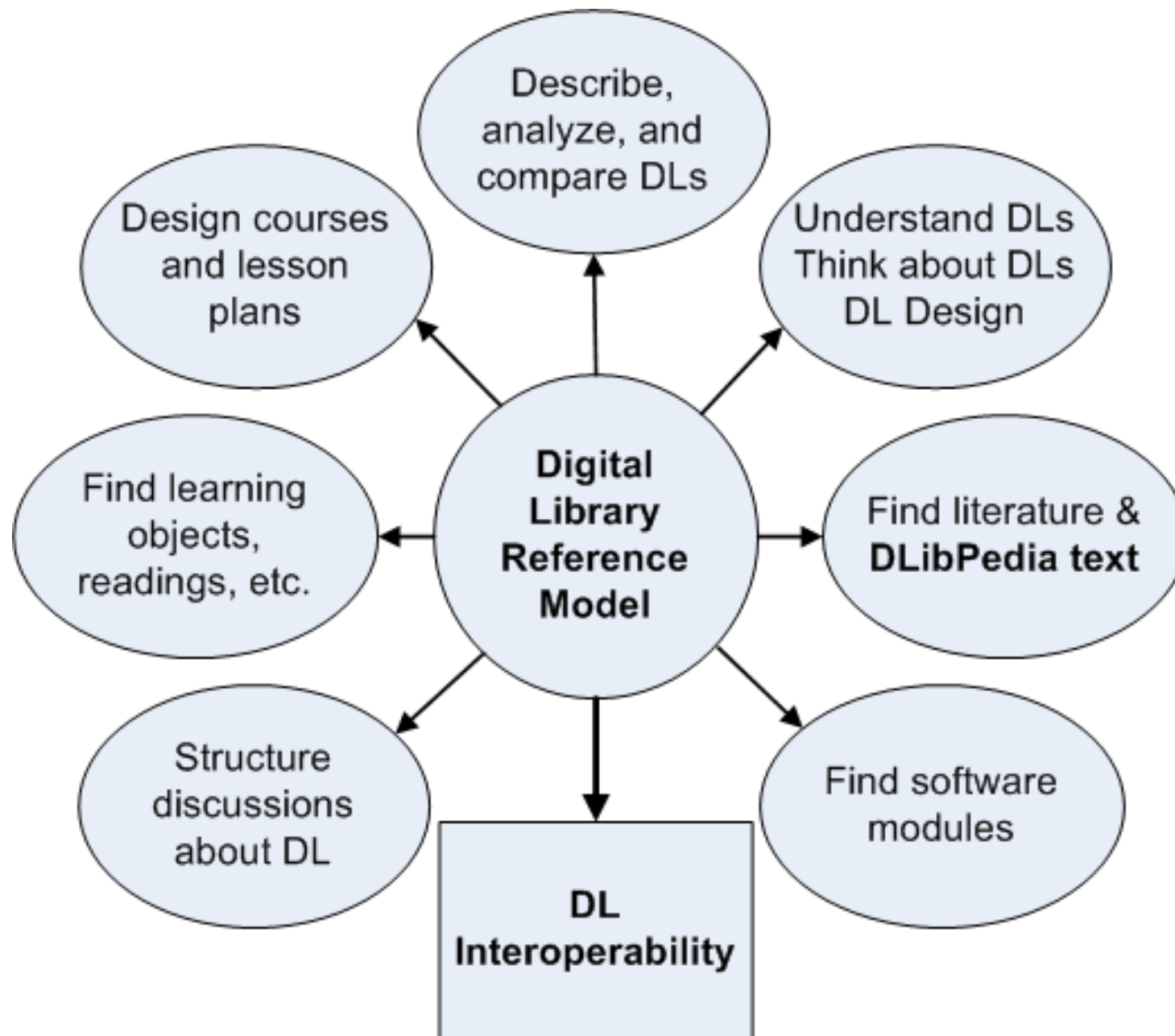
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# The Reference Models

## Many Uses

- All contribute to interoperability



# Describe, analyze, and compare Digital Libraries

Feature	DL A	DL B
InfoObject <hasFormat>	DOM, only text	FEDORA, images, multimedia
InfoObject <hasMetadata>	Dublin Core	MARC
Annotation <hasFormat>	None	DILAS
Discover	Describe search functionality and search engine used	
KOS used	Dewey, free text	AAT, ICONCLASS, free text
Annotate	Not available	Show annotation interface
Collaborate	Not available	Strongly supported (describe)
FindCollaborator	---	Discover function on user profiles
AuthorCollaboratively	---	XXX plug in

# Describe, analyze, and compare Digital Libraries

- Having a **registry of digital libraries** with profiles in this unified structure would be a wonderful resource for
  - Interoperability
  - Design
  - Learning
- Would require **creating the profile structure from the more general Reference Model** (which is, in a sense, an entity-relationship model for data about DLs)

# Understand Digital Libraries

## Think about Digital Libraries

### Design Digital Libraries

- The **Reference Model Framework**:  
Content, Actor/user, Function, Policy, Quality, Architecture  
All specializations of Resource
- **The RM lays out all the components and functions, gives ideas**  
Examples
  - May provide a function *linguisticAnalysis* (for example for extracting and suggesting terms)
  - Need to consider *annotations*, how they are treated in the document model, what types there are, etc.
  - Need a function *discover collaborators* (easy if Actors have metadata as any Resource and *discover* works on all Resources)

# Find literature & DLibPedia text

A dream:

- **Be able to search** for literature and for specific passages in an online Digital Library Encyclopedia **using the concepts of the Reference Model**
- **Results** for such a search (or any Google search for DL materials) **organized by the Reference Model**  
All information on annotation together  
All information on discovering collaborators together  
Result list organized **to dovetail with the task**

# Using the Reference Model to Organize IR Systems on DL

- Have a DL on digital libraries for example maintained by the DELOS Association, collaboratively managed by experts, **using the Reference Model as the index language**
- Create free-text search expressions for the concepts in the Reference Model to support better Web search **using the Reference Model as the search language**



# **DlibPedia**

## **An online encyclopedia on DL**

- Article themes would be created from the Reference Model
- Could be part of Wikipedia if one agrees with their policies on authorship and free-for-all
- Or could be managed by DELOS Association if funding can be found

# Keep structured notes

- For designers or students  
Use the Reference Model to structure notes
- Also needs the DL description profile

# Find software modules

- **A software registry**  
**searchable by the Reference Model Concepts**  
Should include **structured capability profiles**
- Would present results in Reference Model order, again dovetailing with the task of assembling software components for a DL
- Could be part of SourceForge
- **Would encourage reuse and thus interoperability**
- Would require that software producers and users index software modules

# Design courses and lesson plans

- The reference model provides a perfect **conceptual basis for teaching**
- It would encourage faculty to **include advanced functionality and innovative ideas into courses**
- **Improved education** – increased across-the-board knowledge of common principles and best practices–**will foster interoperability**

# Find learning objects, readings, etc.

- This **would require that students and faculty submit learning objects** to a repository, perhaps the DELOS Digital Library proposed earlier, appropriately indexed
- The **DL registry** proposed above would be a wonderful **source of examples** since it would allow pin-point access to, for example, the resource discovery component or the collaboration component across the description of many DLs
- **Results could be arranged to dovetail with the course syllabus or the lesson plan,**

# Structure discussions about Digital Libraries

- A general discussion board, or the discussion board for a class, could be organized using the Reference Model
- Would keep discussion focused and related thoughts grouped together, with cross-references throughout

# Further uses

- Expertise registries: Index and search for people and organizations
- Registries of ongoing research
- High-level specification language for setting up a new DL

# Users of a DL reference model?

## A DL reference model is useful for

- **End users** (information consumers and contributors) who are
  - looking for a DL for a given purpose
  - Want to decide whether a DL is useful for their search
  - Want to compare DLs
- **Metasearch systems** that want to access one or more DLs and need to know “how to talk” to each DL and what search possibilities each DL offers (**DL interoperability**)
- **Administrators** who want to
  - match DL functionality and performance to user requirements
  - identify business opportunities and develop a business plan
  - put together the organizational and policy infrastructure needed for a DL
  - put together the technical infrastructure and software system to run the DL
  - define the workflow and control day-to-day operation of a DL
- **Funders/Investors** who want to evaluate a DL
- **Designers and application developers** who want to consider design options. The DL reference model gives the designer a complete list of functions to consider, components a DL needs, and evaluation criteria to consider
- **Students and educators** who want to learn and teach about digital libraries and understand the full breadth of their functionality and other aspects mentioned above

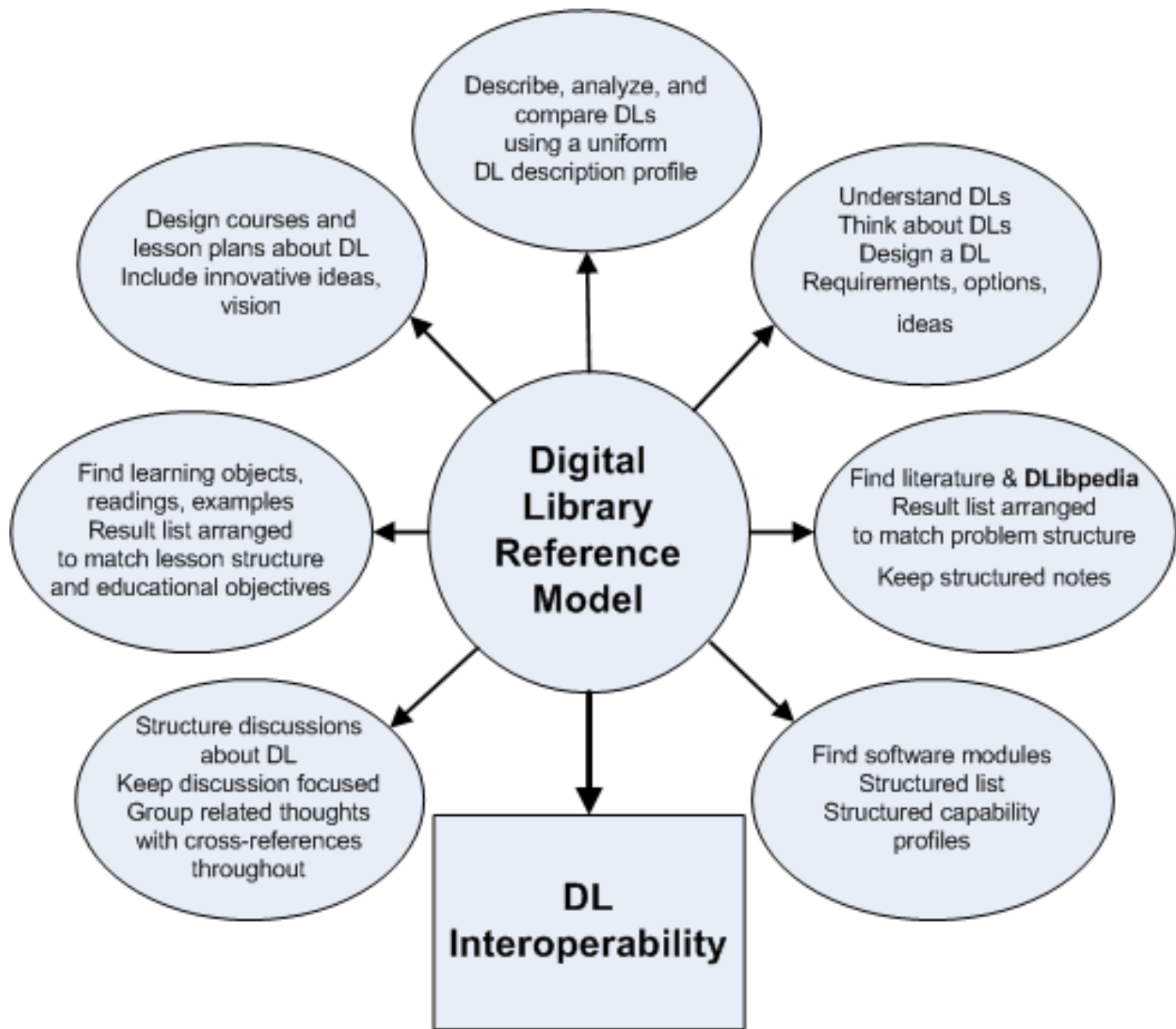


# Digital Library Interoperability

- Interoperability of **existing** systems
  - Understand each system in detail to **discover interoperability problems** –  
DLRM as the standard to guide comparison
  - Then **fix the interoperability problems**
    - make systems more similar,
    - create conversions / mappings / crosswalks
- Interoperability of **new** systems
  - Aided by the DLRM, discover and **reuse existing components**
    - **save money and gain interoperability**

# What needs to happen

- The Reference Model provides a **conceptual core but is not yet ready for these functions**
- Needs to be **extended considerably** with more detail, especially **new and innovative functionality**. This needs a collaborative effort
- An easy-to-apply **DL description profile** needs to be developed



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