Session 8

Technical Services

Moving from conceptual description to implementation technology

Semantic & Bibliographic Relationships

- Concepts & resources don’t exist in isolation
- Knowing & articulating relationships
  - Connects
  - Contextualizes

Semantic Relationships

- Relationships among categories or concepts
  - If we plan to organize information, we should know how concepts can relate to each other.

1. Equivalence
   - Synonyms and quasi-synonyms,
2. Hierarchical
   - Class-subclass
     - Reptiles → snakes
   - Whole-part
     - Knee → Patella
3. Associative
   - The ‘clean-up’ relationship type,
   - Associations among concepts that are neither hierarchical nor equivalent

Types of Associative Relationships

- A discipline or field of study and the objects or phenomena studied:
  - Forest → Forestry
- An operation or process and its agent or instrument:
  - Midwife → Birth
- An action and the product of the action:
  - Ploughing → Furrows
- An action and its patient or target:
  - Harvesting → Crops
- A concept and its unit of measurement:
  - Electrical power → Watt

MeSH: Medical Subject Headings

- 26,000+ descriptors
  - 177,000 terms
  - Roughly 6.8 synonyms per descriptor!
- Created by NLM for indexing medical literature
  - Used worldwide
- Faceted
  - Facets and qualifiers systematically establish rich, semantic relationships

- http://www.nlm.nih.gov/mesh/MBrowser.html

MeSH Records

- Descriptors
  - Main headings, preferred terms
  - Indicate *aboutness,* subject
- Qualifiers
  - Subheadings
  - Indicate *aspects* of a subject. This is where ***facets*** come into MeSH
  - E.g., Administration & dosage, Anatomy & histology, Complications, Standards, Statistics & numerical data, Therapy
  - Very structured approach to facets
    - 83 qualifiers to be used in conjunction with descriptors for indexing a particular aspect of a subject
- Supplementary Concept Records
  - Fast-changing, mostly to index substances (chemicals, drugs)

Bibliographic Relationships

- These describe how different resources can relate to each other:
  - Similar to Semantic Relationships from Session 2, but these pertain specifically to bibliographic resources.
  - Equivalence: exact (or nearly exact) copies
    - 2 copies of the same edition of a book, an mp3 recording burned from a CD
  - Derivative: work that is based on or derived from another work
    - Updated edition, adaptation
  - Descriptive: work that describes another work
    - Criticism, commentary, summary (Cliff's Notes)

Bibliographic Relationships

- Whole-part: A work can be part of another work
  - Volume in an encyclopedia, chapter, article in a periodical, item in a series
- Accompanying: A work that is meant to go with another work
  - Math workbook w/ textbook, index, documentation
- Sequential: A work that precedes or continues an existing work.
  - Issues of a publication, sequels/prequels, items in a sequential series
- Shared characteristic: Works that have something in common
  - Author, title, language, subject

Bibliographic & Semantic Relationships: Why care?

- ***Concepts*** that are in semantic relationships with each other are ***linked.***
  - ***If*** the type of link is definable in the information system,
  - ***If*** the link between two resources is encoded.

- ***Resources*** that are in bibliographic relationships with each other are ***linked.***
  - ***If*** the type of link is definable in the information system,
  - ***If*** the link between two resources is encoded.

RDA's Purpose

- "The data created using RDA to describe a resource are designed to assist users performing the following tasks:
  - **Find** —i.e., to find resources that correspond to the user's stated search criteria
  - **Identify** —i.e., to confirm that the resource described corresponds to the resource sought, or to distinguish between two or more resources with similar characteristics
  - **Select** —i.e., to select a resource that is appropriate to the user's needs
  - **Obtain** —i.e., to acquire or access the resource described."
    - RDA Introduction

User Tasks

- Find
  - meeting user's search criteria
- Identify
  - User confirms finding what they sought, distinguishes similar items
- Select
  - Meets user's requirements wrt content, format, etc.
- Obtain
  - User's ability to access the actual work
- Navigate
  - User's ability to use the work, find information within, etc.

Resource Description & Representation Technology

- Most (all?) tasks and technologies involved in the organization of information/bibliographic control pertain to:
  - Entities
  - Characteristics of those entities
  - Relationships among entities

	Entities	Characteristics	Relationships
Databases	Entities	Attributes	Relationships
XML	Elements	Sub-elements & Attributes	Nesting of elements; Namespaces
FRBR / RDA	Content entities, Agent entities, Concept entities	Attributes (of content entities and agent entities)	Relationships & Linked Data
CMS (databases on the backend)	Articles	Article template form fields	Categories, Tags, Links, Feed

Midterm's Coming!

- Any questions?