

Creating and Managing Controlled Vocabularies for Use in Metadata

Tutorial 4
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Goals of the Tutorial

- Controlled vocabulary development [*Joe Tennis*]
 - Development considerations
 - Development techniques
- Managing controlled vocabularies for the Web [*Stuart Sutton*]
 - Vocabulary and vocabulary term identification
 - Vocabulary declaration
 - Vocabulary publication

Contents

- **Definition:** What do we mean when we say “controlled vocabulary”
- **Issues:** What are the issues in developing, generating, using and managing vocabularies?
- **Creation:** How are controlled vocabularies created?
 - Creating a new controlled vocabulary
 - Creating a useful controlled vocabulary for a community already using many different vocabularies
- **Form and Use:** How are controlled vocabularies represented and used?
 - URI references for identifying vocabulary terms
 - Human-readable strings that represent vocabulary concepts
- **Management:** How are controlled vocabularies managed?
 - Vocabulary declarations and publication
 - Simple and complex registries

Issues

- *No Controlled vocabularies are used.* Many metadata initiatives do not use controlled vocabularies in generating metadata values
- *Vocabularies used are not identified.* Even when controlled vocabularies are used, they may not be identified in instance metadata
- *Vocabularies are not publicly accessible.* Even where the vocabulary is identified in instance metadata, public access to the vocabulary by humans and/or machines is unavailable
- *Vocabulary identification is lost in “dumbing down”.* Even when identified in complex instance metadata (e.g., qualified Dublin Core), the identifications are lost in the process of “dumbing down”

Definition

- Controlled vocabulary (CV): A finite set of distinct values for a metadata property
 - Different from a “metadata vocabulary” which defines a finite set of properties (i.e., a *schema*)
 - In the metadata statement “dc:subject=cybernetics”, we are concerned only with the controls placed on the right-hand side of the statement (i.e., the *schema* or value space)
- Not just for the “subject” property!
 - With the exception of properties with uncontrolled value strings in Dublin Core (e.g., dc:description), all properties can successfully use controlled vocabularies to increase precision and enhance meaning
 - E.g., the DCMII vocabulary for use with the dc:type vocabulary is a “controlled vocabulary”

Controlled Vocabulary Development

Vocabulary Development

- Two types of development
 - Creating a new controlled vocabulary
 - Creating a useful controlled vocabulary for a community already using many different vocabularies

Developing Vocabularies

- Creating a new controlled vocabulary
 - Gather data from your community combination of ways
 - Representatives speak for users (vet ideas in committee)
 - Gather information about the community and its information needs
 - Gather user search data
 - Construct vocabulary
 - Identify terms
 - Identify relationships between terms
 - Maintain vocabulary
 - Keep it current and useful!
 - Based on user, domain, and representative input

Creating a New Controlled Vocabulary

- Gather data from your community [1/3]
 - Representatives speak for users
 - Committee meetings
 - Draft vocabularies
 - Vet vocabularies to group
 - Good things about this approach
 - Faster
 - Cheaper
 - Cons of this approach
 - No real user data
 - No way of knowing whether what you built works

Creating a New Controlled Vocabulary

- Gather data from your community [2/3]
 - Information needs of a community
 - What terms are in the documents they use?
 - E.g. web pages, journal articles, maps?
 - How is the community structured?
 - Who creates information, who consumes it, who stores it?
 - Are there standards (educational standards for example) that shape information flow?
 - Are there basic philosophical assumptions about the information flow? (does it all need to be captured or just part of it?)

Creating a New Controlled Vocabulary

- Gather data from you community [3/3]
 - What search terms do they use?
 - What tasks do they perform that they need information for?
 - What habits do they have for searching for information (other people?) - how does that affect how you build your vocabulary?
 - All three of these data collection activities will help you construct the terms and relationships between terms.

Creating a New Controlled Vocabulary

- Construct Vocabulary
 - Identify terms
 - Pull together synonyms, disambiguate homographs
 - Any term that is not “official” can be used as an aid in search (expanding the query to direct it to the “official” term)
 - Identify relationships between terms
 - What are the relationships between terms that will aid the user during search and retrieval?
 - Make those relationships explicit in your metadata.
 - These actions make a controlled vocabulary “controlled”

Creating a New Controlled Vocabulary

- Maintain the vocabulary
 - Check search logs...see where search is successful and where it fails
 - Where it fails, adjust the vocabulary
 - Add new terms as needed
 - Take out terms as they are not needed
 - Think about using those terms as query expansion

Developing Vocabularies

- Creating a useful controlled vocabulary for a community already using many different vocabularies
 - Merging vocabularies
 - Create high-level “switching” vocabulary
 - Create a third new vocabulary and link to similar terms in the existing vocabularies

Developing Vocabularies

- None of these options are ideal
- All three options require careful understanding of the community (domain) and the use/users of the vocabularies
- Addressing the terms in these vocabularies with URIs helps disambiguate the individual terms, because these terms will be defined in namespaces

Developing Vocabularies

- Merging Vocabularies
 - The vocabularies (terms and relationships between terms) can be merged in order to facilitate search
 - The structure of each vocabulary must be accounted for in the merging
 - We must account not just for the occurrence of similar or the same terms, but also the meaning of those terms as they're used by the indexers and the searchers

Developing Vocabularies

- Create a high-level “switching” vocabulary
 - This ignores most of the relationship structure of the existing vocabularies
 - Imposes a broad “umbrella-like” structure to the vocabularies
 - Easier to do (with an accurate understanding of the vocabulary, domain, and users), but search may suffer a bit (potential loss of search control)

Developing Vocabularies

- Create a third new controlled vocabulary and link its terms to similar terms in existing vocabularies
 - More time intensive and costly than the other two options, and more involved than crafting a vocabulary from scratch
 - It is costly because you have to monitor all the changes made to each of the linked vocabularies, and you must add these to the search query expansion in a thoughtful way, requiring a lot of time and effort

Infrastructure to Support Exposure and Use of Vocabularies

Identifying, Declaring and Publishing
Vocabularies

Webized Controlled Vocabularies

“Webized” controlled vocabularies *and* vocabulary terms are:

– Persistently and uniquely **identified**

URIs for names/tokens/identifiers

– Formally **declared** by means of a schema language

Represented in XML or RDF/XML

– Made Web-available by being **published**

Published through a Web-accessible registry

Vocabulary Term Identification

- **Assertion 1: All webized controlled vocabulary terms must be assigned a URI reference**

“The most fundamental specification of Web architecture ... is that of the Universal Resource Identifier, or URI. The principle that anything, absolutely anything, ‘on the Web’ should be identified distinctly by an otherwise opaque string of characters ... is core to the universality [of the Web].”

Tim Berners-Lee, “Web Architecture from 50,000 Feet”
<<http://www.w3.org/DesignIssues/Architecture.html>>

- Required by the DCMI Abstract Model [Draft]

“The Dublin Core Abstract Model requires that all terms (elements, element refinements, encoding schemes and controlled vocabulary terms) ... that are compliant with the model must be assigned a URI reference that identifies the term.”

Andy Powell, “Guidelines for assigning identifiers to metadata terms”
<<http://www.ukoln.ac.uk/metadata/dcmi/term-identifier-guidelines>>

Vocabulary Term URI Construction

- Goals
 - *Persistence*. URI should have indefinite existence (in perpetuity?)
 - *Uniqueness*. By definition, URI should never identify more than one entity (vocabulary, vocabulary term or version of a vocabulary or vocabulary term)
 - *Resolvability*. If possible, URI should resolve using currently available Web browsers
- URI reference partitioning
 - XML namespace URI reference
E.g., <http://purl.org/gem/GEMS/>
 - Vocabulary term name
E.g., Physics
 - Resulting URI
<http://purl.org/gem/GEMS/Physics>

Persistent URI Reference Strategies

Possible strategies:

- Use project-specific URL
 - E.g., <http://myproject.org/metadata/vocabs/color#Red>
 - Questionable persistence
- Use PURL
 - E.g., <http://purl.org/gem/educationLevel/Grade 2>
 - Reliable intermediary (resolution service) for persistence
- Use “info” URI
 - E.g., <info:ddc/22/eng//004.678>
 - Persistent identification but *info* URIs cannot be “resolved” using current Web browsers

DCMI Working Draft: “Guidelines for assigning identifiers to metadata terms”
<<http://www.ukoln.ac.uk/metadata/dcmi/term-identifier-guidelines>>

Vocabulary Term Declaration

- **Assertion 2:** All controlled vocabulary terms must be “declared”
 - To “declare” a term is to create a machine-processable representation of the term by means of a schema language
 - XML and RDF/XML
 - Relationships among versions of a vocabulary and its terms should be declared
 - Area of research and exploration
 - See *Guidance information for naming, versioning, evolution, and maintenance of element declarations and application profiles* Draft CWA, July 2004
 - <<ftp://ftp.cenorm.be/public/ws-mmi-dc/mmidc117.htm>>

Examples: Declaration

- DCMII Type Vocabulary
- GEM Education Level Vocabulary

Vocabulary Management Information

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE rdf:RDF (View Source for full doctype...)>
<rdf:RDF xmlns:dcmitype="http://purl.org/dc/dcmitype/" xmlns:dcterms="http://purl.org/dc/terms/"
  xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
```

<!-- CONTROLLED VOCABULARY MANAGEMENT INFORMATION -->

```
<rdf:Description rdf:about="http://purl.org/dc/dcmitype/">
  <dc:title xml:lang="en-US">The DCMI Types namespace providing access to its content by means
    of an RDF Schema</dc:title>
  <dc:publisher xml:lang="en-US">The Dublin Core Metadata Initiative</dc:publisher>
  <dc:description xml:lang="en-US">The Dublin Core Types namespace provides URIs for the entries of the
    DCMI Type Vocabulary. Entries are declared using RDF Schema language to support RDF applications.
    The Schema will be updated according to dc-usage decisions.</dc:description>
  <dc:language xml:lang="en-US">English</dc:language>
  <dcterms:requires rdf:resource="http://dublincore.org/documents/dcmi-type-vocabulary/" />
  <dc:source rdf:resource="http://dublincore.org/documents/dcmi-type-vocabulary/" />
  <dc:source rdf:resource="http://dublincore.org/usage/terms/" />
  <dcterms:requires rdf:resource="http://purl.org/dc/elements/1.1/" />
  <dcterms:isReferencedBy rdf:resource="http://purl.org/dc/terms/" />
  <dcterms:issued>2000-07-11</dcterms:issued>
  <dcterms:modified>2002-05-22</dcterms:modified>
</rdf:Description>
```

<!-- TERM DECLARATIONS -->

```
...
...
</rdf:RDF>
```

Vocabulary Term Declarations

<!-- TERM DECLARATIONS -->

```
<dcterms:DCMIType rdf:about="http://purl.org/dc/dcmitype/Collection">  
  <rdfs:label xml:lang="en-US">Collection</rdfs:label>  
  <rdfs:isDefinedBy rdf:resource="http://purl.org/dc/dcmitype/" />  
  <rdfs:comment xml:lang="en-US">A collection is an aggregation of items. The term collection means that the resource is described as a group; its parts may be separately described and navigated.</rdfs:comment>  
  <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class" />  
  <dcterms:issued>2000-07-11</dcterms:issued>  
  <dc:type rdf:resource="http://dublincore.org/usage/documents/principles/#vocabulary-term" />  
  <dcterms:hasVersion rdf:resource="http://dublincore.org/usage/terms/history/#Collection-001" />  
</dcterms:DCMIType>
```

```
<dcterms:DCMIType rdf:about="http://purl.org/dc/dcmitype/Dataset">  
  <rdfs:label xml:lang="en-US">Dataset</rdfs:label>  
  <rdfs:isDefinedBy rdf:resource="http://purl.org/dc/dcmitype/" />  
  <rdfs:comment xml:lang="en-US">A dataset is information encoded in a defined structure (for example, lists, tables, and databases), intended to be useful for direct machine processing.</rdfs:comment>  
  <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class" />  
  <dcterms:issued>2000-07-11</dcterms:issued>  
  <dc:type rdf:resource="http://dublincore.org/usage/documents/principles/#vocabulary-term" />  
  <dcterms:hasVersion rdf:resource="http://dublincore.org/usage/terms/history/#Dataset-001" />  
</dcterms:DCMIType>
```

...

```
</rdf:RDF>
```

GEM educationLevel Vocabulary (XML)

```
<?xml version="1.0" encoding="UTF-8" ?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="http://purl.org/gem/instance/level/" targetNamespace="http://purl.org/gem/instance/level/"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:annotation>
    <xs:documentation xml:lang="en">GEM controlled vocabulary for designating the education level of the
      audience for a resource. Created in 1996 by the GEM Consortium.</xs:documentation>
  </xs:annotation>
  <xs:simpleType name="Level">
    <xs:union>
      <xs:simpleType>
        <xs:restriction base="xs:Name">
          <xs:enumeration value="Preschool education">
          <xs:enumeration value="Kindergarten">
          <xs:enumeration value="Grade 1">
          <xs:enumeration value="Grade 2">
            ...
          <xs:enumeration value="Grade 11">
          <xs:enumeration value="Grade 12">
          <xs:enumeration value="Adult/continuing education">
          <xs:enumeration value="Higher education">
          <xs:enumeration value="Vocational education">
        </xs:restriction>
      </xs:simpleType>
    </xs:union>
  </xs:simpleType>
</xs:schema>
```

Examples:

Instance Metadata

- Dewey Decimal Classification
 - GEM Subject

DDC Instance in RDF

```
<?xml version='1.0' encoding='UTF-8'?>
<rdf:RDF xmlns:rdf='http://www.w3.org/1999/02/22-rdf-syntax-ns# '
  xmlns:rdfs='http://www.w3.org/2000/01/rdf-schema#'
  xmlns:dc='http://purl.org/dc/elements/1.1/ '
  xmlns:dcterms='http://purl.org/dc/terms/'>
<rdf:Description>
  <dc:subject>
    <dcterms:DDC>
      <rdf:value>930</rdf:value>
      <rdfs:label>History of the ancient world (to ca. 499 A.D.)</rdfs:label>
    </dcterms:DDC>
  </dc:subject>
</rdf:Description>
</rdf:RDF>
```

GEM Instance in RDF (Value URI)

```
<?xml version='1.0' encoding='UTF-8'?>
<rdf:RDF xmlns:rdf='http://www.w3.org/1999/02/22-rdf-syntax-ns#'
  xmlns:dc='http://purl.org/dc/elements/1.1/'>
<rdf:Description>
  <!-- GEM hierarchical subject: Arts--Photography -->
  <dc:subject rdf:resource='http://purl.org/gem/instance/
    subject/GEMS/arts_photography'/>
</rdf:Description>
</rdf:RDF>
```

Vocabulary Term Publication

- **Assertion 3:** All controlled vocabulary terms must be “published”
 - Web-addressable vocabulary registries
 - Registry complexity continuum:
 - *From* simple, human-readable HTML pages documenting vocabularies and vocabulary terms
 - *To* complex blends of human-readable pages and declared machine-addressable vocabulary schemes
 - Registry examples:
 - *Simple Registry*—
Gateway to Educational Materials:
<<http://www.thegateway.org/about/documentation/gem-controlled-vocabularies/>>
 - *Complex Registry*—
DCMI Registry:
<<http://www.dublincore.org/dcregistry/>>

Simple Registry: GEM

http://www.thegateway.org - Gateway to Educational Materials - GEM Controlled Vocabularies - Microsoft Internet Explorer

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The Gateway to Educational Materials

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GEM Controlled Vocabularies

GEM Consortium has developed a series of controlled vocabularies that it recommends be used for a number of elements in the GEM element set. While use of these vocabularies is recommended, use of other non-GEM controlled vocabularies is encouraged where needed to serve the needs of a specific metadata collection.

Assessment Element GEM Controlled Vocabulary
Words and phrases that describe student learning assessment methods and instruments.
[RDF Reference URI: <http://purl.org/gem/instance/GEM-EM/>]

Beneficiary Element GEM Controlled Vocabulary
Words or phrases that describe the ultimate beneficiary of the resource being described--usually some category of student or trainee.
[RDF Reference URI: <http://purl.org/gem/instance/GEM-BEN/>]

Grouping Element GEM Controlled Vocabulary
Words and phrases that describe the aggregation and demographics of students for purposes of instruction.
[RDF Reference URI: <http://purl.org/gem/instance/GEM-GRO/>]

Level Element GEM Controlled Vocabulary
Words or phrases used to designate the intended level of students or trainees in a formal educational or training system.
[RDF Reference URI: <http://purl.org/gem/instance/level/>]

Mediator Element GEM Controlled Vocabulary
Words or phrases that describe an intermediary that mediates between the ultimate beneficiary of the resource and resource itself--usually some form of teacher or trainer that uses the resource as a tool.
[RDF Reference URI: <http://purl.org/gem/instance/GEM-MED/>]

PriceCode Element GEM Controlled Vocabulary
Codes that denote the fee status of the resource.
[RDF Reference URI: <http://purl.org/gem/instance/GEMpriceCode/>]

Resource Type Element GEM Controlled Vocabulary

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technical update

License element approved GEM endorses element to describe the license of a resource
2004-08-15

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2004-08-15

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GEM: Student Grouping Vocabulary

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Grouping Element GEM Controlled Vocabulary

Words and phrases that describe the aggregation and demographics of students for purposes of instruction.

Term	Description
Cross-age teaching	Utilization of older students from higher grade levels to provide increased help and attention for younger students at lower grade levels. (ERIC)
Heterogeneous grouping	Organization or classification of students according to specified criteria for the purpose of forming instructional groups with a high degree of dissimilarity. (ERIC)
Homogeneous grouping	Organization or classification of students according to specified criteria for the purpose of forming instructional groups with a high degree of similarity. (ERIC)
Individualized instruction	Adapting instruction to individual needs within the group. (note: do not confuse with "independent study" or "individual instruction") (ERIC)
Large Group instruction	Teaching of students in large classroom situations. (note: do not confuse with "mass instruction") (ERIC)
Non-graded instructional grouping	Grouping students according to such characteristics as academic achievement, mental and physical ability, or emotional development rather than by age or grade level. (ERIC)
Small group instruction	Form of teaching possible in higher education (and sixth forms) where the student to staff ratio is relatively low, and allowing for intensive interaction among small group of participants. (DOE)

Definitions were taken from the following resources:

DCE: *A Dictionary of Education*, Totowa, N.J. : Barnes & Noble Books, 1982, c1981.
DCE3: *Dictionary of education*, 3d edition; New York, McGraw-Hill, 1973.
ERIC: *Thesaurus of ERIC Descriptors*, 13th edition; Phoenix, AZ, Oryx Press, 1995.

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License element approved GEM endorses element to describe the license of a resource
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- GEM Controlled Vocabularies

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featured collection

NASA Quest NASA Quest includes a full suite of online resources!
2004-09-30

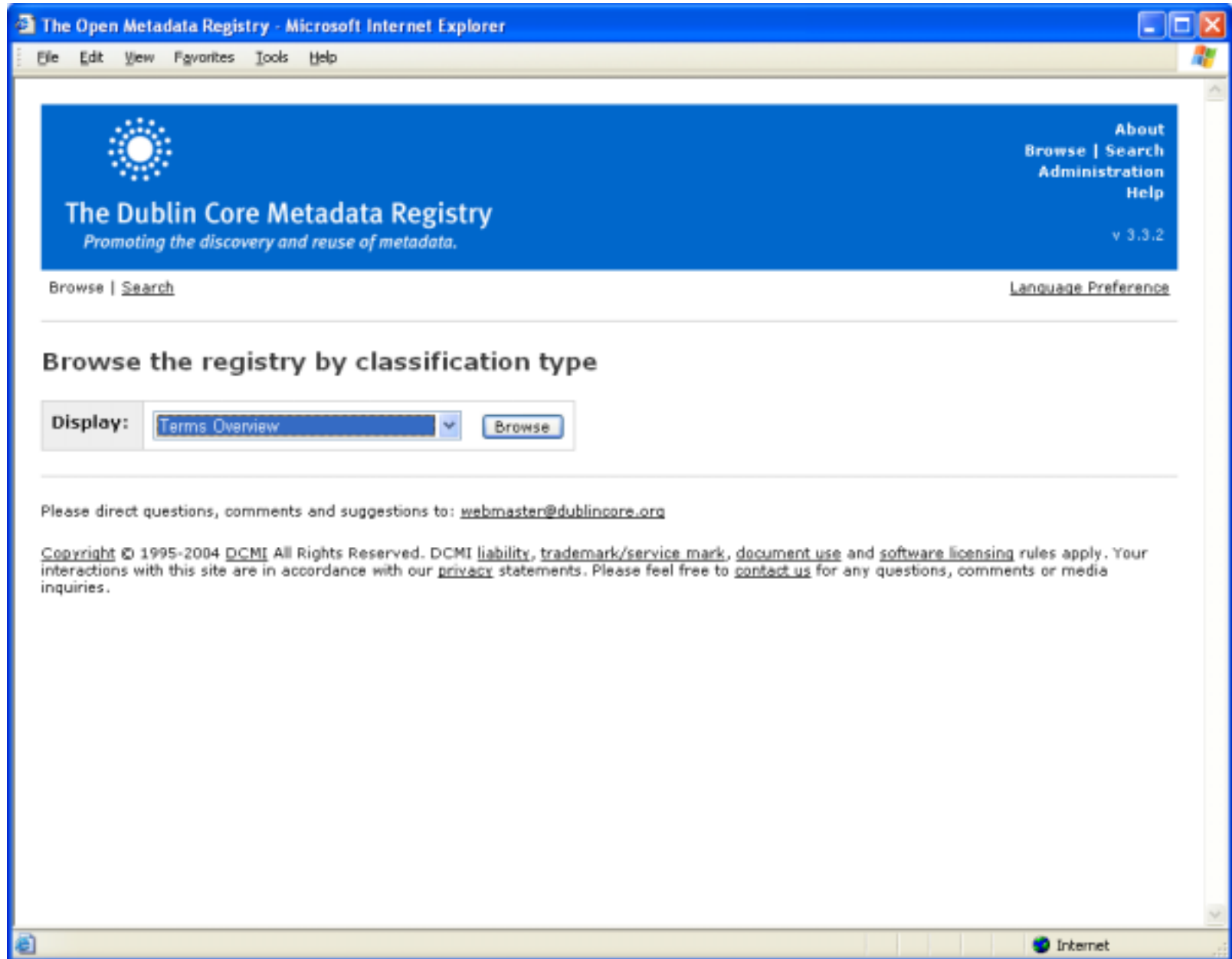
[More...](#)

Done Internet

GEM: Student Grouping Vocabulary (RDF)

```
<?xml version='1.0' ?>
- <rdf:Description xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:dc="http://purl.org/dc/elements/1.1/">
- <rdf:Description rdf:about="http://purl.oclc.org/gem/instance/group/#CrossAgeTeaching">
  <rdf:type rdf:resource="http://purl.org/gem/qualifiers/GEM-GRO" />
  <rdf:value>cross age teaching</rdf:value>
  <rdfs:label>Cross age teaching</rdfs:label>
  <dc:description>Utilization of older students from higher grade levels to provide increased help and attention for younger
  students at lower grade levels.</dc:description>
</rdf:Description>
- <rdf:Description rdf:about="http://purl.oclc.org/gem/instance/group/#HeterogeneousGrouping">
  <rdf:type rdf:resource="http://purl.org/gem/qualifiers/GEM-GRO" />
  <rdf:value>heterogeneous grouping</rdf:value>
  <rdfs:label>Heterogeneous grouping</rdfs:label>
  <dc:description>Organization or classification of students according to specified criteria for the purpose of forming
  instructional groups with a high degree of dissimilarity.</dc:description>
</rdf:Description>
- <rdf:Description rdf:about="http://purl.oclc.org/gem/instance/group/#HomogeneousGrouping">
  <rdf:type rdf:resource="http://purl.org/gem/qualifiers/GEM-GRO" />
  <rdf:value>homogeneous grouping</rdf:value>
  <rdfs:label>Homogeneous grouping</rdfs:label>
  <dc:description>Organization or classification of students according to specified criteria for the purpose of forming
  instructional groups with a high degree of similarity.</dc:description>
</rdf:Description>
- <rdf:Description rdf:about="http://purl.oclc.org/gem/instance/group/#IndividualizedInstruction">
  <rdf:type rdf:resource="http://purl.org/gem/qualifiers/GEM-GRO" />
  <rdf:value>individualized instruction</rdf:value>
  <rdfs:label>Individualized instruction</rdfs:label>
  <dc:description>Adapting instruction to individual needs within the group. (note: do not confuse with "independent study"
  or "individual instruction").</dc:description>
</rdf:Description>
- <rdf:Description rdf:about="http://purl.oclc.org/gem/instance/group/#LargeGroupInstruction">
  <rdf:type rdf:resource="http://purl.org/gem/qualifiers/GEM-GRO" />
  <rdf:value>large group instruction</rdf:value>
  <rdfs:label>Large group instruction</rdfs:label>
  <dc:description>Teaching of students in large classroom situations. (note: do not confuse with "mass
  instruction").</dc:description>
</rdf:Description>
- <rdf:Description rdf:about="http://purl.oclc.org/gem/instance/group/#Non-gradedInstructionalGrouping">
  <rdf:type rdf:resource="http://purl.org/gem/qualifiers/GEM-GRO" />
  <rdf:value>non-graded instructional grouping</rdf:value>
  <rdfs:label>Non-graded instructional grouping</rdfs:label>
  <dc:description>Grouping students according to such characteristics as academic achievement, mental and physical
  ability, or emotional development rather than by age or grade level.</dc:description>
</rdf:Description>
- <rdf:Description rdf:about="http://purl.oclc.org/gem/instance/group/#SmallGroupInstruction">
  <rdf:type rdf:resource="http://purl.org/gem/qualifiers/GEM-GRO" />
```


Complex Registry: DCMI



The screenshot shows a Microsoft Internet Explorer browser window displaying the Dublin Core Metadata Registry website. The browser's title bar reads "The Open Metadata Registry - Microsoft Internet Explorer". The address bar is empty. The website's header features a blue banner with a white sunburst logo on the left. The text in the banner reads "The Dublin Core Metadata Registry" and "Promoting the discovery and reuse of metadata." On the right side of the banner, there are links for "About", "Browse | Search", "Administration", and "Help", along with the version number "v 3.3.2". Below the banner, there are links for "Browse | Search" and "Language Preference". The main content area is titled "Browse the registry by classification type". Below this title, there is a "Display:" label, a dropdown menu set to "Terms Overview", and a "Browse" button. Below the dropdown and button, there is a line of text: "Please direct questions, comments and suggestions to: webmaster@dublincore.org". At the bottom of the page, there is a copyright notice: "Copyright © 1995-2004 DCMI All Rights Reserved. DCMI [liability](#), [trademark/service mark](#), [document use](#) and [software licensing](#) rules apply. Your interactions with this site are in accordance with our [privacy](#) statements. Please feel free to [contact us](#) for any questions, comments or media inquiries." The browser's status bar at the bottom shows the "Internet" icon and the text "Internet".

The Open Metadata Registry - Microsoft Internet Explorer

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 The Dublin Core Metadata Registry
Promoting the discovery and reuse of metadata.

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Browse the registry by classification type

Display:

Please direct questions, comments and suggestions to: webmaster@dublincore.org


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Internet

DCMI Type Vocabulary

The Open Metadata Registry - Microsoft Internet Explorer

Address <http://www.dublincore.org/idoregistry/detailServlet?reqType=detail&item=http%3A%2F%2Fpurl.org%2Fdc%2Fterms%2FDCMIType>



The Dublin Core Metadata Registry
Promoting the discovery and reuse of metadata.

Language Preference

Language Preference

Browse | Search

Browse the registry by classification type

Display:

http://purl.org/dc/terms/DCMIType		View:
Label	DCMI Type Vocabulary [en-US]	RDF/XML
Definition	A list of types used to categorize the nature or genre of the content of the resource. [en-US]	N-TRIPLE
Description	The DCMI Type Vocabulary provides a general, cross-domain list of approved terms that may be used as values for the Resource Type element to identify the genre of a resource.	NS
Is Defined By	http://purl.org/dc/terms/	
RDF Type	TypeScheme	
RDF Type	Class	
See Also	http://dublincore.org/documents/dcmi-type-vocabulary/	
Type	encoding-schema	
Has Version	DCMIType-002	
Issued	2000-07-11	
Modified	2002-06-15	
Controlled Vocabulary	Collection Dataset Event Image InteractiveResource MovingImage PhysicalObject Service Software Sound StillImage Text	

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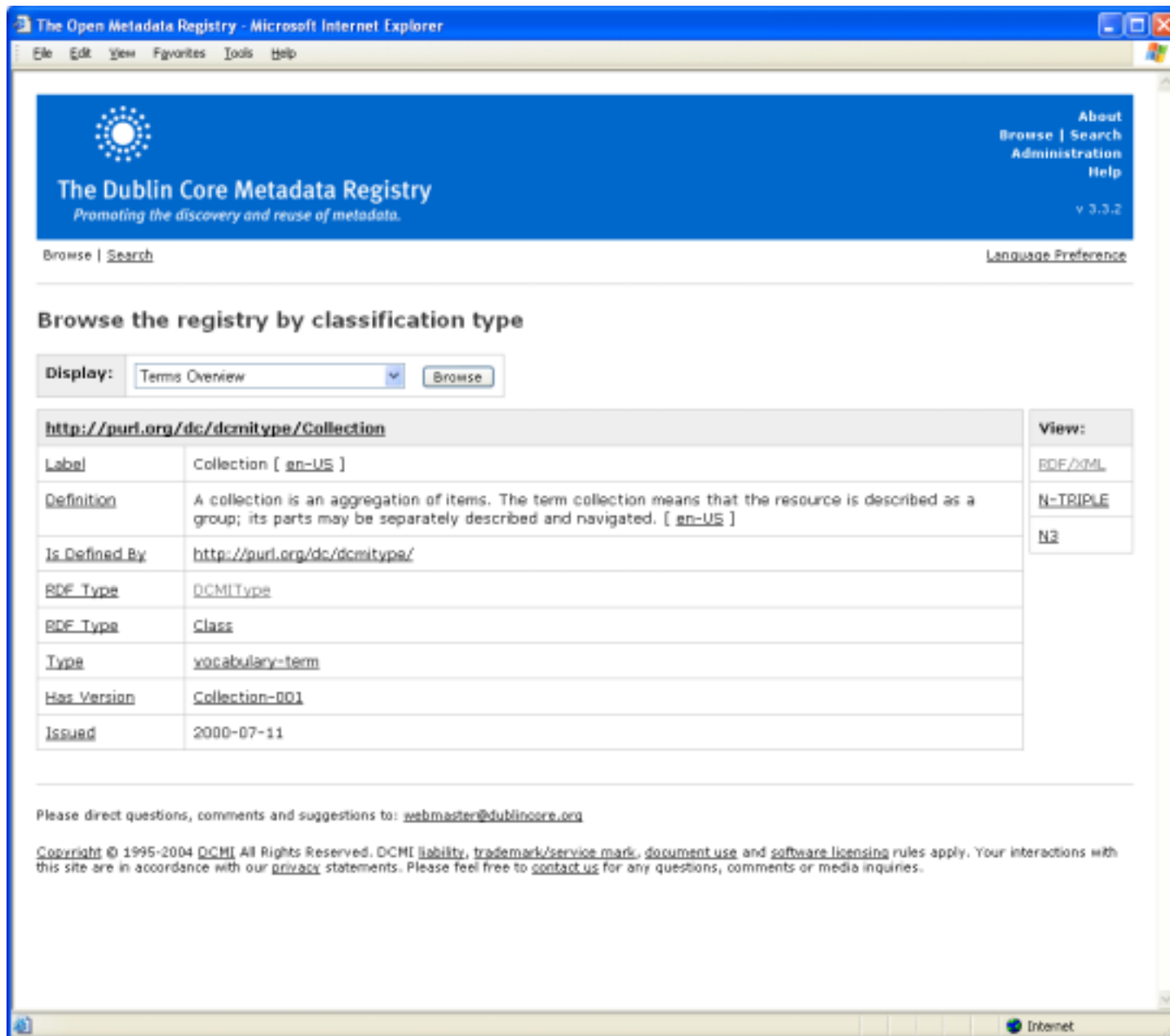
Internet

DCMI Type Vocabulary RDF

```
http://www.dublincore.org/dcregistry/rdfViewServlet?item=http://purl.org/dc/terms/DCMIType&lang - Microsoft Internet Explorer
File Edit View Favorites Tools Help
- <rdf:RDF xmlns:dcterms="http://purl.org/dc/terms/" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:dc="http://purl.org/dc/elements/1.1/">
- <rdf:Description rdf:about="http://purl.org/dc/terms/DCMIType">
  <rdfs:comment xml:lang="en-US">A list of types used to categorize the nature or genre of the content of the
  resource.</rdfs:comment>
  <dcterms:hasVersion rdf:resource="http://dublincore.org/usage/terms/history/#DCMIType-002" />
  <dcterms:issued>2000-07-11</dcterms:issued>
  <rdfs:seeAlso rdf:resource="http://dublincore.org/documents/dcmi-type-vocabulary/" />
  <dc:type rdf:resource="http://dublincore.org/usage/documents/principles/#encoding-scheme" />
  <rdfs:isDefinedBy rdf:resource="http://purl.org/dc/terms/" />
  <dcterms:modified>2002-06-15</dcterms:modified>
  <rdfs:label xml:lang="en-US">DCMI Type Vocabulary</rdfs:label>
  <rdf:type rdf:resource="http://purl.org/dc/terms/TypeScheme" />
  <dc:description>The DCMI Type Vocabulary provides a general, cross-domain list of approved terms that may be used as values for
  the Resource Type element to identify the genre of a resource.</dc:description>
  <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class" />
</rdf:Description>
</rdf:RDF>
```

Done Internet

DCMI Type Term: “Collection”



The screenshot shows a web browser window titled "The Open Metadata Registry - Microsoft Internet Explorer". The page header includes the Dublin Core logo and the text "The Dublin Core Metadata Registry Promoting the discovery and reuse of metadata." Navigation links for "About", "Browse", "Search", "Administration", and "Help" are visible, along with the version number "v 3.3.2".

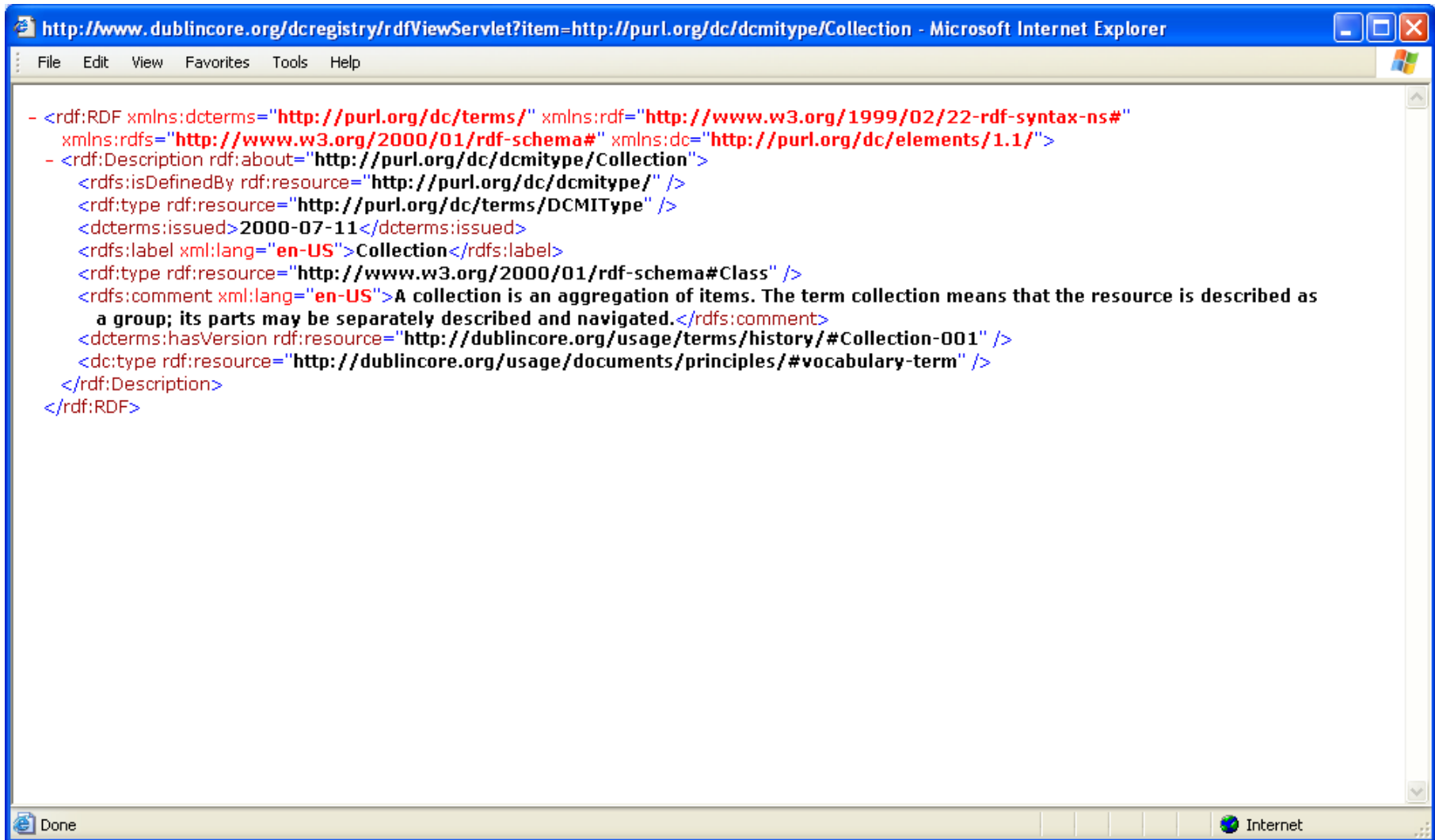
The main content area is titled "Browse the registry by classification type". It features a "Display:" dropdown menu set to "Terms Overview" and a "Browse" button. Below this is a table for the DCMI Type Term "Collection".

http://purl.org/dc/dcmitype/Collection		View:
Label	Collection [en-US]	RDF/XML
Definition	A collection is an aggregation of items. The term collection means that the resource is described as a group; its parts may be separately described and navigated. [en-US]	N-TRIPLE
Is Defined By	http://purl.org/dc/dcmitype/	N3
RDF Type	DCMIType	
RDF Type	Class	
Type	vocabulary-term	
Has Version	Collection-001	
Issued	2000-07-11	

Below the table, there is a note: "Please direct questions, comments and suggestions to: webmaster@dublincore.org".

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DCMI Type Term “Collection” (RDF)



The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying the URL: <http://www.dublincore.org/dcregistry/rdfViewServlet?item=http://purl.org/dc/dcmitype/Collection>. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The main content area displays the following RDF code:

```
- <rdf:RDF xmlns:dcterms="http://purl.org/dc/terms/" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:dc="http://purl.org/dc/elements/1.1/">
- <rdf:Description rdf:about="http://purl.org/dc/dcmitype/Collection">
  <rdfs:isDefinedBy rdf:resource="http://purl.org/dc/dcmitype/" />
  <rdf:type rdf:resource="http://purl.org/dc/terms/DCMITYpe" />
  <dcterms:issued>2000-07-11</dcterms:issued>
  <rdfs:label xml:lang="en-US">Collection</rdfs:label>
  <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class" />
  <rdfs:comment xml:lang="en-US">A collection is an aggregation of items. The term collection means that the resource is described as
    a group; its parts may be separately described and navigated.</rdfs:comment>
  <dcterms:hasVersion rdf:resource="http://dublincore.org/usage/terms/history/#Collection-001" />
  <dc:type rdf:resource="http://dublincore.org/usage/documents/principles/#vocabulary-term" />
</rdf:Description>
</rdf:RDF>
```

The status bar at the bottom of the browser window shows "Done" on the left and "Internet" on the right.

Questions?

Thank you for your attention

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