

Illinois Fire Service Institute Library Presentation

2000 inFIRE Conference

Ottawa, Canada

May 9, 2000

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TM

Title

Mapping Multiple Vocabularies for Better
Subject Access to Fire Science Materials

Abstract

Since August 1999, a project to map the Library of Congress Subject Heading (LCSH), Medical Subject Headings from the National Library of Medicine (MeSH) and other fire vocabularies systems has been carried out at the Illinois Fire Service Institute Library (FSI Library), University of Illinois at Urbana-Champaign. Named FireTalk, this map will become a printed, as well as a web-based electronic thesaurus. In the FSI Library's Online Public Access Catalog, LCSH, MeSH and other terms will be linked, thus enhancing retrieval or relevant bibliographic citations and facilitating multiple database searching.

Illinois Fire Service Institute

- A Statutory State Fire Academy Since 1981
- Central Objective: Prepare and Help Illinois Firefighters and Other Emergency Services Providers Develop the Core Skills Required to Effectively Meet the Emergency Fire Service Needs of Their Communities

ILLINOIS FIRE SERVICE REALITIES

1,293

Fire Departments

42,675

Firefighters

- 8,600 Officers
- 13,300 Paid

70%

**of all Departments
are VOLUNTEER /
PAID ON CALL**

20%

Turnover Rate

Academic Programs at FSI

- FireFighting
- Hazardous Materials
- Counter-Terrorism
- Rescue
- Investigation and Fire Prevention
- Industrial Fires
- EMS (Emergency Medical Services)

Vision 2000 for the Future

- Since 1981, Reach about 1/3 of the Firefighters in the State Annually
- In 1997, New Vision 2000 for the Future: Find the Best Ways to Reach EVERY Illinois Firefighter with the Training, Education and Information He/She Requires Each Year

FSI Library

- Established in 1990 as an In-house Library to Support the Training and Teaching of the Institute's Faculty and Students
- Served the Local Fire Departments throughout the State from Time to Time in the Early 90's

FSI Library

- Subject Strengths: Arson Investigation, Fire Fighting, Haz Mat, Counter-Terrorism, Rescue, Fire Education & Safety, Fire Services Management, Emergency Management, EMS and General Training
- Various Formats of Information
- Most Comprehensive Collection Dealing with Fire Safety and Science in the State of Illinois

Outreach Program

- Outreach Program Survey, 1998
- The Outreach Program Provides
NO COST Fire/Emergency
Information Services to EVERY
firefighter in State of Illinois

FSI, LTLS & ILL

- Obtained Full Membership in Lincoln Trail Libraries System (LTLS) in 1998
- Began Systematic ILL Procedures Statewide, thus Becoming a “Special Public Library” in Illinois

Web-Based Services & Delivery Mechanism

- **Electronic Access to Web-Based Services and Information 24 Hours/Day, Seven Days/Week**
- **OPAC at the Institute's Web Site (<http://www.uiuc.edu/unit/IFSI/>)**
- **FireTalk, FSI Library On-line Thesaurus at the Institute's Web Site**

Illinois On-line Libraries Systems

- Will Allow Access to the FSI Collection via LTLS LSSAP-LINC
- Use Internet or Local Library to Access FSI Library
- Before Joining LTLS, a Need to Evaluate the non-LCSH Subject Headings

The Problems

- Two Primary Cataloging Units at University Libraries: One in a Subject Area (e.g. Health Sciences Library), & One in the General University Library, Respectively Assigning MeSH & LCSH Headings
- Small & Highly Specialized Library: Create Own Subject Headings, Along with the Standard LCSH

The Problems

- Primary Difficulty in Subject Searches of Library Catalogs (On-line Catalogs or Card Catalogs): Finding Proper Form of the Subject Heading
- In Gateways to Several Databases, Subject Searching Problems are Further Complicated Because Different Vocabulary Systems are Used

Grant Applications

- LSTA (Library Service and Technology Act) Mini-grant, Bring in an Expert, in April 1999
- LSTA Full Year Grant, in August 99

LSTA Mini-Grant Project

Hired Professor Pauline Cochrane

- Formulated Procedures for Evaluating the Subject Index Vocabulary & Began to Create a True Thesaurus with a Map of Relevant MeSH, LCSH & Other Vocabulary Terms.
- Trained Staff in Thesaurus Review & Maintenance.

New Research Plans

1. Create a FireTalk Thesaurus - Approved Subject Headings with Syndetic Structure (UF, BT, NT, RT) & Mapping Information
2. Develop a Subject Authority File
3. Review Class Numbers As Access Routes
4. Develop Specifications for the Subject Mapping Information for Cataloging Practices & OPAC Search Display
5. Produce a Printed & Web-based Electronic Version of FireTalk to Distribute to the Users & Other Fire Libraries around the World

The Solutions

Three Methods & Strategies:

1. Mapping
2. Merging
3. Switching

Creating FireTalk

- Evaluated Original List of Subject Headings & Subheadings
 - Example of Subject Headings on Card:
Firefighters-Videos
RT Training
 Women firefighters
 (TH9505.H83K133 Training-Kansas)
 (TH9123.W84 Women firefighters)
-

Figure 1

Creating FireTalk

Map Topics from the Following Multiple Vocabulary Sources by Using Multites:

- a) LCSH
- b) MeSH
- c) National Emergency Training Center Learning Resource Center (NETC)
- d) New York State Fire Academy of Fire Science Library's periodical indexing system (New York)


Creating FireTalk

Routinely Consult:

- a) "American National Standard, Guideleines for Construction, Format, and Management of Monolingual Thesuri" (1993)
- b) MeSH Tree Structures
- c) Medical Dictionaries
- d) Handbooks in Fire Sciences
- e) IFSTA Manuals, etc.

Creating FireTalk

- Only Map Topical Headings from LCSH, MeSH & Others, NOT Geographic, Name or Uniform Titles Used as Subject Headings
- Step #1 to Convert LCSH-like Headings:
Relocated Terms Describing Format of Material, e.g. Video, Book, etc. to Another Data Field of the Bibliographic Record & Form a Pop-up Window on the OPAC as Record Type with a List



FSI

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- [Search Catalog](#)
- [New Materials](#)
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- [InterLibrary Loan](#)
- [Procedures](#)
- [IFSI Homepage](#)
- [Report Problems](#)

- Archive
- Book
- Brochure
- Catalog
- CD Rom
- Checklist
- Code
- Computer files 3.5 floppy disk
- Dictionary
- Directory
- Disk
- Encyclopedia
- Guide
- Handbook
- Law and Regulation
- Manual
- Map
- Motion Picture
- Newspaper

Access Catalog

bottom of the screen and click on **Help** Icon

"Title" box. Please see the examples below.

For example:

(1) If you know the exact title, you can simply type it in the "Title" box:

Creating FireTalk

Step #2 to Convert LCSH-like Headings:

Deleted Geographical Headings & Proper Names from the List & Formed New Fields "Subject Name" with "Subject Date" & "Subject Place" on the OPAC

FireTalk on the Web

U-Search - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Location: <http://128.174.139.91/dbtw-wpd/title.htm?Submit3=++++Title++++>

Welcome to **FSI Library Catalog**

FSI Library On-line Public Access Catalog

FSI

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Subject Search
For complete instructions, scroll to the bottom of the screen and click on *Help* Icon

Subjects

Subject Place **FireTalk (FSI Thesaurus)**

Subject Date

Subject Name

Limited by:(Click to choose type of material)

Inmagic Word Wheel 3.0: Subjects

Find:

Choices List: Number of entries pasted: 0

Hits	Keys
11	Labor
2	Laboratories
1	Ladder angles
2	Ladder carries
7	Ladder companies

Words List
 Terms List
 Field:

Unsigned Java Applet Window

Stop

What's Related

artUpdate Mktplace CNN Interactive

atalog

word Multiple

Subject Search

For complete instructions, scroll to the bottom of the screen and click on *Help* Icon

Subjects

Subject Place

Subject Date

Limited by:(Click to choose type of material)

Creating FireTalk

- Step #3 to Convert LCSH-like Headings:
Established 14 Subject Categories (Called TT
– Top Terms)
 - a) **Establish Used For, BT-NT and RT Relations**
 - b) **Add Scope Notes, as Needed**
 - c) **Meet Program Directors for Evaluation**
 - d) **Review Reference Request Database to Study
How the End Users Made Requests**

Creating the Map from FireTalk to Other Word Lists

- Beginning with the First Word in the FireTalk, Matching Term Sought in LCSH, MeSH, New York, & NETC
- If No Match, Cross References, or Alternative Headings Sought
- When Match, Note Relevant Cross-References, BT & NT & Add to FireTalk
- Look up Each Alternative Heading to Determine Its Relevance & Seek Additional Cross-references or Headings

Creating the Map from FireTalk to Other Word Lists

The General Principle Followed:

- Identify and Map One-to-One Correspondences between LCSH, MeSH, FSI, New York & NETC Main Headings
- Map a LCSH & MESH Heading onto Each Other. Headings Have to be Co-extensive. One Could Not Be Broader or Narrower than the Other.

Creating the Map from FireTalk to Other Word Lists

- The Hierarchical Structure: Direct a User from a Known Heading to a Broader or Narrower Heading
- No Attempt: Seek Matches that Could be Made by Boolean Combinations of Two or More Headings.

Creating the Map from FireTalk to Other Word Lists

- Go beyond the “Use for” or “See” Reference Structure
- Cross-Reference Previous Used Terms to Change Those Records during an Update of the File or Provide the Searcher with Clues & Links between Terms

Creating the Map from FireTalk to Other Word Lists

For Near-matches, Types of Problems:

1. Terms with Similar Meaning But Differ in:

a) Word Order or Phrasing;

- | | | |
|-----------|---|----------------------------|
| Example 1 | { | Stoves, Wood (LCSH) |
| | | Wood stoves (FSI) |
| Example 2 | { | Building, Fireproof (LCSH) |
| | | Fireproof buildings (FSI) |

Creating the Map from FireTalk to Other Word Lists

b) Spelling

Example 3 { Fire fighters (LCSH)
Firefighters (FSI) (NETC)
Fire-fighters (New York)

c) Singular vs. plural form:

Example 4 { Hose (LCSH)
Hoses (FSI) (NETC) (New York)

Creating the Map from FireTalk to Other Word Lists

2. Terms that Differ But Are Somewhat Similar Meaning:

Example 5 {
Fire extinction (LCSH)
Firefighting operations (FSI) (NETC)
Fire-fighting tactics (New York)

Creating the Map from FireTalk to Other Word Lists

- LCSH Handles Only General Concepts
- MeSH Proved Quite Capable of Handling Specific Medical Topics
- NETC & New York Provide More Detail Terms in Fire Science field

Creating the Map from FireTalk to Other Word Lists

- More Specific Terms in FireTalk Listed with * Indication if Equivalent Term Appears in LCSH, MeSH, NETC, & New York
- Giving Preference to LCSH Form, Headings Properly & Consistently Capitalized in FireTalk
- Keep Mapping Terms as New Headings Added

FireTalk on the Web

The screenshot shows a Netscape browser window titled "U-Search - Netscape". The address bar contains the URL: `http://128.174.139.91/dbtw-wpd/title.htm?Submit3=++++Title++++`. The browser's toolbar includes buttons for Back, Forward, Reload, Home, Search, Netscape, Print, Security, Shop, and Stop. Below the toolbar, there are links for Instant Message, Members, WebMail, Connections, BizJournal, SmartUpdate, Mktplace, and CNN Interactive. The main content area features a red header with the text "Welcome to FSI Library Catalog". Below the header, the page title is "FSI Library On-line Public Access Catalog". A "New Search" button is prominently displayed. Below this, there are four buttons for search criteria: Title, Author, Keyword, and Multiple. The "Subject Search" section includes a "Subject Search" heading, a "For complete instructions, scroll to the bottom of the screen and click on *Help* Icon" instruction, and a "Subjects" input field with a "Submit Query" button and a "Reset" button. Below the "Subjects" field, there are four "Word Wheel" buttons for "Subject Place", "Subject Date", and "Subject Name". A red box labeled "FireTalk (FSI Thesaurus)" is positioned to the right of the "Word Wheel" buttons. At the bottom, there is a "Limited by:(Click to choose type of material)" dropdown menu. On the left side of the page, there is a vertical navigation menu with links: "Catalog", "Search Catalog", "New Materials", "Hints and Tips", "InterLibrary Loan Procedures", "IFSI Homepage", and "Report Problems". The browser's status bar at the bottom shows various system icons.

FireTalk on the Web

U-Search - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: <http://128.174.139.91/dbtw-wpd/title.htm?Submit3=++++Title++++> What's Related

Instant Message Members WebMail Connections BizJournal SmartUpdate Mktplace CNN Interactive

Welcome to **FSJ Library Catalog**

 **FSJ**

FIRETALK
FSJ Thesaurus

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FireTalk on the Web


U-Search - Netscape
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Back Forward Reload Home Search Netscape Print Security Shop Stop

Location: <http://128.174.139.91/dbtw-wpd/title.htm?Submit3=++++Title++++> What's Related

Instant Message Members WebMail Connections BizJournal SmartUpdate Mktplace CNN Interactive

Welcome to **FSJ Library Catalog**

 FSJ

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Example from FireTalk

Firefighters (NETC, LCSH)

TT: 01 Fire Department Management

UF Fire fighters

Firemen

Fire-fighters (New York)

BT Fire department personnel

NT Firefighter I

Women firefighters

RT Fire officers

Promotional examinations

Training

Figure 2

FireTalk: FSI Thesaurus

- A Unique Subject Heading List Using FSI Local Terms, Supplemented by MeSH, LCSH & Local Terms from Other Libraries
- Conform More Closely to the Mapping Techniques
- Main Objective: Produce a Single Subject Authority List with an Indication of What the Equivalent Terms Are in the Other Vocabularies

Plans for Further Work

1. Relate Class Numbers & Subject Headings
2. Use Reporting Mechanism between FSI & the Editors of Other Lists to Reach Some Accommodations
3. Do Match Codes Research
4. Study Exceptions to the Mapping Rules
5. Study False Matches

BENEFITS

- Provide Easy Tool for Cataloging Practices
- Improve Subject Access Vocabulary to Fire Science Materials, Looking for Synonyms, Spelling Variations, etc.
- Select Appropriate Terms, as New Resources are Being Cataloged & Fit These Terms into FireTalk

BENEFITS

- Construct a Syndetic Structure for All Terms
- Develop an Authority/Verification System & a Search System that Provides Automatic Links between Old Access Terms & the Established Headings
- Show the Library Holdings on the FSI Library OPAC with Some Consistency in Subject Access, with Arrangements by Form of Material, Date, or Place, When Required

BENEFITS

- Generate Displays at the FSI Library OPAC that Links Corresponding LCSH, MeSH & Other Locally Developed Headings, thus Enhancing Retrieval of Relevant Bibliographic Citations & Facilitating Multiple Database Searching & Cataloging Practices

BENEFITS

- Help Add the FSI Library Collection to the Statewide On-line System by Joining Lincoln Trail Libraries System LSSAP - LINC with Acceptable Subject Headings to Facilitate Information Delivery & Equal Access for Every Firefighter & Interested Citizens in Illinois for the Outreach Program

Acknowledgement

- The Illinois Fire Service Institute's Continual Support
- inFIRE Members' Generous Help
- 1999 LSTA Mini-Grant, Bring in an Expert, & 2000 LSTA Full Year Grant from the Illinois Secretary of State's Office & the Illinois State Library
- Professor Pauline Crochrane's Stimulating Discussions & Suggestions
- Graduate Student, Ms. Yan Xu's Assistance