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THE DEWEY DECIMAL CLASSIFICATION

Note: This is a pre-print version of a paper forthcoming in *Encyclopedia of Library and Information Science, Third Edition*. Please cite the published version; a suggested citation appears below. Correspondence about the article may be sent to the authors at joan_mitchell@oclc.org or vizine@oclc.org.

Abstract
This article discusses the Dewey Decimal Classification's value proposition as a general knowledge organization system in terms of basic design, history, ongoing development, translations, mappings, applications, and research. The authors conclude with prospects for use of the DDC inside and outside of libraries.

Keywords
Classification; DDC; Decimal Classification Editorial Policy Committee; Dewey Decimal Classification; Dewey for Windows; Electronic Dewey; Melvil Dewey; OCLC; WebDewey,

Suggested citation:
Mitchell, Joan S. and Diane Vizine-Goetz. 2009. "Dewey Decimal Classification." In *Encyclopedia of Library and Information Science, Third Edition,* ed. Marcia J. Bates and Mary Niles Maack. Boca Raton, Fla.: CRC Press. Pre-print available online at: http://www.oclc.org/research/publications/library/2009/mitchell-dvg-elis.pdf.

INTRODUCTION

The Dewey Decimal Classification (DDC)[1] system is a general knowledge organization system that is continuously revised to keep pace with knowledge. The DDC is used around the world in 138 countries; over sixty of these countries also use Dewey to organize their national bibliographies. Over the lifetime of the system, the DDC has been translated into more than thirty languages.

The system has value because of its well-defined categories, well-developed hierarchies, rich network of relationships among topics, worldwide use, and language-independent representation of concepts. The existence of interoperable translations, mappings to other subject schemes, and the large amount of categorized content already associated with the system also contribute to Dewey's value proposition.

BASIC DESIGN

STRUCTURE AND NOTATION

The DDC structures knowledge by disciplines or fields of study in a general-to-specific arrangement in well-developed hierarchies. At the top level, the DDC includes ten main classes:

000 Computer science, information & general works

100 Philosophy & psychology

200 Religion

300 Social sciences

400 Language

500 Science

600 Technology

700 Arts & recreation

800 Literature

900 History & geography

Each main class is divided into ten divisions, and each division is divided into ten sections (some numbers in the divisions and sections have not been used—these are marked as "Unassigned"):

500 Science

510 Mathematics

510 Mathematics

511 General principles of mathematics

512 Algebra

513 Arithmetic

514 Topology

515 Analysis

516 Geometry

517 [Unassigned]

518 Numerical analysis

519 Probabilities & applied mathematics

520 Astronomy

530 Physics

540 Chemistry

550 Earth sciences & geology

560 Fossils & prehistoric life

570 Life sciences; biology

580 Plants (Botany)

590 Animals (Zoology)

The top-levels of the DDC—the main classes, divisions, and sections—are known collectively as the "DDC Summaries."

Arabic numerals treated like decimal fractions are used to represent each class in the DDC. In other words, main class 500 Science is really .5 Science. The main class, divisions, and sections are usually represented as three digits (extra zeros are added as needed). A decimal point (a punctuation device without mathematical significance) follows the third digit in a DDC number, after which division of the class continues by specific enumeration and/or notational synthesis. For example, 006 Special computer methods is divided into six subclasses: 006.3 Artificial intelligence, 006.4 Computer pattern recognition, 006.5 Digital audio, 006.6 Computer graphics, 006.7 Multimedia

systems, and 006.8 Virtual reality. All but the last are further subdivided. In addition, each of these classes (including the last) can be further extended by general notational synthesis rules as well as instructions in specific classes.

Classes 000-999 are known collectively as "the schedules"; there are also six auxiliary tables (Tables 1-6) that support notational synthesis:

Table 1. Standard Subdivisions

Table 2. Geographic Areas, Historical Periods, Persons

Table 3. Subdivisions for the Arts, for Individual Literatures, for Specific Literary Forms

Table 4. Subdivisions of Individual Languages and Language Families

Table 5. Ethnic and National Groups

Table 6. Languages

Notation in tables is represented in the print edition with an em dash followed by the number, e.g., —624 Sudan is the Table 2 number for the country of Sudan. In the Relative Index in the print edition, and throughout the current web version, the same number is represented by T2—624. The prefix for the table number and the em dash are removed when the notation is appended to another number (see NOTATIONAL SYNTHESIS).

The schedules and tables also include some numbers enclosed in square brackets and parentheses. Numbers in square brackets are not in current use. Numbers in parentheses are optional numbers—alternate notation for a concept. Optional numbers are provided to give emphasis to a topic not given preferred treatment in the standard notation[2]. For

example, Library and Archives Canada routinely prefaces the notation for American literature in English and French literature with "C" to represent Canadian literature, e.g., C813.6 is the optional number for 21st century Canadian fiction in English; 813.6 is the standard number for the same concept.

Accompanying the schedules and tables are the Manual and the Relative Index. The Manual provides extended discussions on choices among related numbers, and on classification in complicated areas of the tables and schedules. The Manual was first published in 1982 as a supplement to DDC 19[3]; it was fully integrated into the system with the publication of DDC 20[4].

The DDC is indexed by a unique tool known as the "Relative Index." The index is so named because it shows the relationship between subjects and the disciplines (or in some cases, the various aspects within disciplines) in which they appear. For example, the Relative Index entries for Garlic are as follows:

Garlic	641.3526
Garlic—botany	584.33
Garlic—cooking	641.6526
Garlic—food	641.3526
Garlic—garden crop	635.26
Garlic—pharmacology	615.32433

Within 641 Food and drink, garlic appears in food (641.3526) and cooking (641.6526). Garlic also appears in botany (584); as a garden crop in agriculture (635.26); and in a

subfield of medicine, pharmacology (615.32433). The interdisciplinary number for garlic is the one that appears opposite the unsubdivided entry for garlic (641.3526).

The Relative Index has been a feature of the DDC since the first edition of the system, and is considered one of Melvil Dewey's unique contributions. Miksa[5] traces the history of the Relative Index through the twenty-two full editions of the DDC with special attention to its nature as a conceptual indexing system, the conceptual contexts provided by Relative Index, and its treatment of concepts resident in internal tables. Green[6] investigates the explicit and implicit relationships between Relative Index terms and topics in the schedules and tables.

CLASSES, HIERARCHIES, AND RELATIONSHIPS

Each class in the DDC is defined by its position in a hierarchy, notes within the class, and a rich network of relationships with other classes. Relationships may be explicitly stated within the class itself, within other classes, and inherited through hierarchical relationships.

Entries in the schedules and tables have two main components—a DDC number and a heading (caption) describing the number. The entry may also contain notes that further describe the class, provide instruction for notational synthesis, or define its relationships with other classes.

796.932 Cross-country skiing

Including biathlon

Class here Nordic combination, Nordic skiing

For jumping, see 796.933

Hierarchy in the DDC is expressed through structure and notation. The DDC organizes knowledge first by discipline and then by subject in a hierarchical structure in which topics progress from the general to the specific. Each of the classes subordinate to the ten main classes needs to be considered in terms of the hierarchy. Notes with "hierarchical force" regarding the nature of a class at any point in the hierarchy also apply to subordinate classes and to referenced classes.

The hierarchy is largely expressed through the notation. For a class within a given hierarchy, the next broader topic will generally be represented by a number one digit shorter, and subordinate topics will generally be one digit longer. Coordinate topics are usually represented by the same number of digits. For example, here are several specific ice and snow sports shown in the context of their complete hierarchy.

700 Arts & recreation

790 Recreational and performing arts

796 Athletic and outdoor sports and games

796.9 Ice and snow sports

796.91 Ice skating

796.92 Snowshoeing

796.93 Skiing and snowboarding

The classes 796.91, 796.92, and 796.93 are coordinate classes—they are directly subordinate to class 796.9 Ice and snow sports, which in turn is subordinate to section 796 Athletic and outdoor sports and games. Section 796 is part of division 790 Recreational and performing arts, which is part of main class 700 Arts & recreation.

GENERAL RULES FOR CLASSIFYING WITH THE DDC

The general rules for classifying with Dewey are set forth in the introduction to the DDC[7]. Additional instructions are found in the beginning of Tables 1-6 (in the electronic version, the instructions can be found in the "0" record associated with each table, e.g., T1—0), in individual schedule and table records, and in the Manual notes associated with selected entries.

Since Dewey was originally developed to order physical materials, the instructions are geared toward the selection of a single number to represent any document-like object. The rules for choice of a single number also facilitate sharing of Dewey numbers among users, e.g., through bibliographic cooperatives such as OCLC's WorldCat. In the electronic environment, additional full and partial numbers may be assigned for access (see **APPLICATIONS AND RESEARCH**).

The guiding principle is to classify a topic within its disciplinary context. For topics scattered across the DDC, an interdisciplinary number is often identified. Within a discipline, a comprehensive number might be identified if there are aspects of a topic further developed in the discipline. For example, holidays may be examined from the perspectives of customs, law, religion, etc. The numbers for holidays will vary from each of these perspectives, e.g., 394.26 (Holidays—customs), 344.091 (Holidays—law), 203.6 (Holidays—religion). The class 394.26 is designated the interdisciplinary number for holidays. It is also the comprehensive number for holidays in customs—there is a substantial development for holidays under 394.26 for secular and religious holidays, plus provision in 394.25 for Carnival and Mardi Gras.

NOTATIONAL SYNTHESIS

The DDC schedules enumerate only a fraction of the possible numbers that can be used to represent concepts. Often, a number must be synthesized (built) to express a particular concept. Numbers can be synthesized using notation in Tables 1-6, notation from other parts of the schedules, or notation from add tables that appear in the schedules. Any number can be extended by notation from Table 1, known collectively as "standard subdivisions," unless there are instructions to the contrary. Number building from the Tables 2-6, other parts of the schedules, and add tables can only be initiated upon instruction. Here are some examples of notational synthesis in Dewey:

Journal of topology 514.05

(514 Topology + notation 05 Serial publications from Table 1)

The Internet in Africa 004.678096

(004.678 Internet + notation 09 Geographic treatment from Table 1 + notation 6 Africa from Table 2)

Medical journalism 070.44961

(070.449 Journalism in specific subjects + notation 61 from 610 Medicine and health [it is a convention in Dewey to drop the final zero after the decimal point])

Elementary mathematics curricula 372.7043

(372.7 Elementary education in mathematics + notation 043 Curricula from the add table under 372.3-372.8 Elementary education in specific subjects)

HISTORY

The DDC was conceived by Melvil Dewey in 1873 and first published in 1876[8]. Dewey developed the system as an economical alternative to the practice of organizing books first in broad categories, then by a fixed location within each category representing a physical shelf location. There were no relationships built within the categories except for order of acquisition. Dewey decided to use decimal numbers to represent the subject of books—under his system, books would be numbered according to their subject content instead of physical location. The system gets its name from Dewey's surname plus the decimal element in its design. Wiegand[9], Comaromi[10], and Miksa[11] discuss the early history of the DDC and influences on Melvil Dewey in his development of the system; Comaromi and Miksa also discuss the development and features of subsequent editions of the DDC through DDC 18 and DDC 21, respectively.

EDITIONS

The system is published in full and abridged editions, and in electronic and print versions. The DDC databases associated with the full and abridged editions are also available to licensees as an XML data file.

DDC 22, the latest English-language full edition of the DDC, was published in print in 2003[12]; Abridged Edition 14, an abridged version of the full edition, was published the following year[13]. The current full edition database contains nearly 27,000 numbers enumerated in the schedules, plus more than 13,000 additional synthesized numbers in the index. There are over 9,000 table numbers listed in Tables 1-6; an additional 600 synthesized table numbers are included in the index[14]. As mentioned previously, additional notation beyond that explicitly provided in the schedules, tables, and index can be synthesized to reflect a particular aspect of a topic.

The abridged edition is a logical truncation of the notational and structural hierarchy of the corresponding full edition. It is much smaller than the full edition—in print, it is one volume instead of four, and is aimed at collections of 20,000 titles or less. It also contains fewer tables than the full edition—Tables 1-4 instead of Tables 1-6. There are still opportunities for notational synthesis, but they are more limited than the full edition provisions for number building. The current abridged edition database contains nearly 5,000 numbers enumerated in the schedules, plus an additional 400 synthesized numbers in the index. There are over 500 table numbers listed in Tables 1-4, plus nine additional synthesized table numbers in the index[15].

ELECTRONIC VERSIONS OF THE DDC

The conversion of DDC to electronic form began in 1979 with the use of a computer-based photocomposition system to produce DDC 19. Five years later in 1984, Forest Press commissioned Inforonics Inc. to develop a database and online system to support the continuing development and publication of the DDC[16]. The project and resulting system become known as the Editorial Support System, or ESS. John Finni, the chief

programmer from Inforonics, and Peter Paulson, the executive director of Forest Press from 1985 to 1998, envisioned that DDC data would also be used in classifier-assistance tools and in end-user retrieval systems. In 1989, the ESS was used by the Dewey editorial team to produce DDC 20. Electronic Dewey was released by OCLC Forest Press four years later. Electronic Dewey marked the start of classifier access to machine-readable classification data. The software ran on a personal computer and provided access to the schedules, tables, Relative Index, and Manual of DDC 20 on CD-ROM. For schedule numbers, Electronic Dewey also provided up to five frequently used Library of Congress subject headings and a sample bibliographic record for the most frequently occurring heading.

A new Microsoft Windows®-based version of the software, Dewey for Windows, was released in mid-1996 at the same time as the publication of DDC 21. Dewey for Windows was based on the DDC 21 database and included significant enhancements to the user interface[17]. The Windows version included statistically mapped Library of Congress subject headings and selected LC subject headings editorially mapped to DDC numbers. Dewey for Windows was issued annually through 2001.

In June 2000, WebDewey, a web-based version of DDC 21, was released by OCLC as part of the Cooperative Online Resources Catalog (CORC) system. The CORC project grew out of the work of OCLC researchers to develop automated tools for finding, harvesting, and classifying electronic resources. In 2002, WebDewey and Abridged WebDewey, the latter a web-based version of Abridged 13, became available in the OCLC Connexion cataloging service. These services replaced Electronic Dewey and Dewey for Windows.

The latest full and abridged versions of the DDC are available in the Connexion service. WebDewey and Abridged WebDewey incorporate all changes to the print editions, plus additional index terms and built numbers, and many other enhancements.

WebDewey features[18] include:

- regular database updates incorporating the latest changes to the DDC (new developments, new built numbers, and additional electronic index terms)
- updated mappings to DDC 22 from the OCLC publication, *People, Places & Things*[19]
- thousands of Library of Congress Subject Headings (LCSH) that have been statistically mapped to Dewey numbers from records in WorldCat or intellectually mapped to Dewey numbers by the DDC editors
- thousands of Relative Index terms and built numbers not available in print
- links from mapped LCSH to the LCSH authority records
- selected mappings from Medical Subject Headings (MeSH)

Abridged WebDewey features[20] include:

- all content from Abridged Edition 14, including regular updates
- LCSH that have been intellectually mapped to Dewey numbers by DDC editors, including mappings from the OCLC publication, *Subject Headings for Children*[21]
- links from mapped LCSH to the LCSH authority records
- mappings between abridged Dewey numbers and subject headings from H.W. Wilson's *Sears List of Subject Headings*[22]

One by-product of the development of the DDC web-based versions was the generation of a suite of XML representations of DDC data. The XML representations are used by OCLC in products and services and distributed to translation partners, research partners, and other licensed users. The proprietary XML representations are scheduled to be replaced by ones based on the MARC 21 formats for Classification and Authority data. The conversion is being undertaken in conjunction with the development of a new version of the Editorial Support System. In the new ESS, the record format used for schedule, table, and Manual data will be based on an enhanced version of the MARC 21 Format for Classification Data. The record format used for Relative Index headings and for mapped headings from other vocabularies will be based on an enhanced version of the MARC 21 Format for Authority Data. The MARC 21 representations of the files will also be available in XML.

Emerging data models for representing knowledge organizations schemes, e.g., Simple Knowledge Organization System (SKOS), may provide new opportunities for publishing, linking, and sharing classification data on the web. Panzer[23] [24] identifies several issues that must be addressed before the DDC can be transformed fully into a web information resource, including the design of Uniform Resource Identifiers (URIs) and modeling DDC in SKOS.

DEVELOPMENT

Since July 29, 1988, OCLC has owned all copyright rights in the Dewey Decimal Classification and funds the ongoing development of the system. The Dewey editorial office has been headquartered at the Library of Congress since 1923, and is physically

located in the Dewey Section[25]. Dewey numbers have been assigned to works cataloged by the Library of Congress since 1930; classifiers in the Dewey Section are the primary assigners of Dewey numbers at the Library of Congress. Having the editorial office in close proximity to a key user group assists the editors in detecting emerging topics and shifts in viewpoints and terminology.

The DDC is continuously developed and updated by an editor in chief and four assistant editors. The editors study the distribution of topics in WorldCat to determine literary warrant (the existence of a certain level of literature on a topic) for updates—they also monitor the subject literature, news feeds, and other information resources, plus consult with users.

All changes to the DDC are reviewed by the Decimal Classification Editorial Policy Committee (EPC), a ten-member international advisory board whose main function is to advise the DDC editors and OCLC on matters relating to changes, innovation, and the general development of the DDC. The committee is a joint committee of the American Library Association and OCLC and has been in continuous existence in its present form since the early 1950s. Current EPC members represent academic, national, public, school, and special libraries and come from Australia, Canada, South Africa, the United Kingdom, and the United States. In addition, current translation partners serve as corresponding members of EPC—they receive all draft proposals for comment at the same time as EPC members.

TRANSLATIONS

Over the life of the system, the DDC has been translated into over thirty languages. Translation activities and international use prior to acquisition of Forest Press by OCLC in 1988 are summarized in Downing and Yelland[26] and Holley[27]; more recent activities are discussed by Chan and Mitchell[28], Beall and Couture-LaFleur[29], Knutsen[30], Heiner-Freiling[31], and Beall[32]. Since 1988, authorized translations of the full and abridged editions of the DDC have been published in the following languages: Arabic, French, German, Greek, Hebrew, Icelandic, Italian, Norwegian, Russian, Spanish, Turkish, and Vietnamese. MelvilClass, the German counterpart to WebDewey, is an up-to-date version of the German translation of DDC 22. Other web versions are currently under study. Current versions of the top-level summaries of the DDC have been translated into Arabic, Chinese, Czech, French, German, Hebrew, Italian, Norwegian, Portuguese, Russian, Spanish, Swedish, and Vietnamese. A project is under way in South Africa to translate the DDC Summaries into the ten official languages of South Africa besides English.

OCLC enters into agreements with recognized bibliographic agencies around the world to produce localized representations of the DDC in which classes remain interoperable with the English-language edition on which the translation is based. Translations are localized with examples and terminology appropriate to the country / language group, and are often supplemented by interoperable expansions (e.g., a deeper representation of a geographic area than found in the English-language full edition).

The following example illustrates the principle of interoperable expansions. The German translation of Table 2 contains expansions for several areas; the expansion for

—43551 Regierungsbezirk Köln is shown below. The English-language version of the development for —43551 Regierungsbezirk Köln is a logical abridgment of the German version. In the English-language version of Table 2, only the categories shown in bold are listed.

—43551 Regierungsbezirk Köln

—435511 Aachen

—435512 Kreise Aachen, Heinsberg, Düren, Euskirchen

—4355122 Kreis Aachen

—4355124 Kreis Heinsberg

—4355126 Kreis Düren

—4355128 Kreis Euskirchen

—435513 Rhein-Erft-Kreis

—435514 Köln

—435515 Leverkusen

—435516 Rheinisch-Bergischer-Kreis, Oberbergischer Kreis

—4355163 Rheinisch-Bergischer-Kreis

—4355167 Oberbergischer Kreis

—435518 Bonn

—435519 Rhein-Sieg-Kreis

Research projects are under way on models for mixed Norwegian-English and Swedish-English translations of the DDC[33], and on multilingual presentations of the DDC[34].

Translations enrich the terminological base of the DDC, and extend the specificity of the system in the form of interoperable expansions and additional synthesized numbers. Translations also spur additional categorized content being associated with the DDC[35]. Translation partners bring a rich diversity of viewpoint to the DDC that often results in improvements to the English-language standard edition[36].

MAPPINGS

Mappings between Dewey and other knowledge organization systems enrich the vocabulary associated with DDC numbers, and permit the use of the DDC as a switching system. Current services plus a host of research projects make use of such mappings for a variety of applications.

The electronic versions of the DDC contain selected mappings between Dewey numbers and three standard subject headings lists—LCSH, MeSH, and H.W. Wilson's *Sears List of Subject Headings*. The last represents the longest continuous mapping between the DDC and a subject heading systems. Dewey numbers first appeared in the 4th edition of Sears in 1939[37]. They were dropped in the 9th edition of Sears[38], reappeared again in the 11th edition[39], and have continued through the 19th edition[40]. The mappings between abridged Dewey numbers and Sears headings are created at H.W. Wilson under an agreement with OCLC, and are included in various products and services offered by OCLC and H.W. Wilson.

The Dewey editors have long consulted LCSH and MeSH as sources of terminology for the DDC; terminology from both systems is also mapped to the DDC. The OCLC publications *Subject Headings for Children* and *People, Places & Things* are lists of LC

subject headings with corresponding DDC numbers. The publications function as tools for end users and catalogers and supply vocabulary for the DDC database. Both include subject heading-DDC number pairs statistically derived from WorldCat. Vizine-Goetz[41] describes the general processes used to map LCSH terminology, including statistical mapping. Ongoing access to LCSH mappings is through WebDewey services.

In 2008, the Dewey editors began a project to map DDC numbers to the BISAC (Book Industry Standards and Communications) subject headings[42]. The project is part of OCLC's Next Generation Cataloging pilot, which captures publisher and vendor metadata and enhances it for the mutual benefit of library and publishing industry partners[43]. The mappings are used to add Dewey numbers to publisher metadata records that contain BISAC codes, and BISAC subject headings to bibliographic records that contain DDC numbers.

Translation partners and other groups are also linking general terminology lists with the DDC.

In the CrissCross project, headings from Schlagwortnormdatei (SWD), the German subject heading authority file, are being mapped to Dewey numbers (to date, 58,000 headings have been mapped)[44]. At the Italian National Central Library in Florence, work is under way to map Dewey numbers to Nuovo Soggettario, the Italian subject heading list[45] [46]. The Spanish translation of *Sears List of Subject Headings* also includes mapped Dewey numbers[47].

There are also concordances being developed between Dewey and other classification systems. The Library of Congress's Classification Web system includes statistical correlations among LCSH, Library of Congress Classification (LCC), and DDC based on

the co-occurrence of the three in Library of Congress bibliographic records. The National Library of Sweden has developed a mapping between SAB, the Swedish classification system, and the DDC as part of an exploration to consider a Swedish translation of the DDC[48].

Several concordances between the Universal Decimal Classification (UDC) and the DDC have been developed. For example, the Czech National Library has built a concordance between UDC and DDC for the purposes of collection assessment[49]. McIlwaine and Mitchell are experimenting with a concordance between the Class 2 Religion in the UDC and 200 Religion in the DDC as a method of presenting a chronological/regional view of religion in the DDC similar to the updated one found in the UDC[50].

APPLICATIONS AND RESEARCH

The DDC is perhaps most familiar to users as the classification portion (Arabic numerals punctuated by a decimal point after the first three digits) of a call number used to label physical objects in libraries. The classification portion of a call number is one manifestation of Dewey; the underlying DDC data and associated terminologies are used for a variety of applications beyond physical shelf location.

The first and most well-known research effort to incorporate DDC data into an end user retrieval system was the DDC Online Project led by Markey[51]. Markey's team built an experimental online catalog, Dewey Online Catalog (DOC), that included data from the DDC schedules and Relative Index. The DOC system provided new subject searching capabilities not available in online catalogs, e.g., subject indexes enriched with terminology from the DDC schedules and Relative Index, and features to broaden or

narrow searches using the DDC hierarchy. Other notable research projects that use DDC-based search strategies are the Renardus Service[52] and the High Level Thesaurus (HILT) project[53].

The Renardus project developed a pilot web-based service that enabled searching and browsing of subject gateway services from Denmark, Finland, Germany, the Netherlands, Sweden, and the United Kingdom. To enable browsing across the gateways, the local classification systems used in the gateways were mapped to a common classification system that could function as a switching language and browsing structure. The DDC was chosen as the common scheme. The project developed a mapping tool that allowed the participating gateways to specify the level of match between the local scheme and DDC.

Like Renardus, the HILT project is investigating and developing solutions for subject searching and browsing across multiple schemes and information environments. The DDC is used as a central spine to which collection descriptions are mapped. In the HILT II pilot service, user queries are matched to DDC captions, Relative Index terms, and mapped terminology; DDC caption hierarchies are displayed in search results to provide context for matched terms. When a user selects a result, the service returns a list of collections to search.

These systems are exceptional in their integration of DDC data into the search process. As Markey notes, "To this day, the only way in which most online catalog users experience classification online is through their OPAC's shelflist browsing capability."[54] Even so, the value of classification-based browsing has not gone unnoticed by users and developers of online catalogs. Many online catalog redesign projects include a requirement for a virtual shelf-browsing feature.

The approval of additional MARC 21 fields for DDC numbers in the bibliographic format may provide new opportunities for using DDC data in end-user and classifier systems. The 083 field (Additional Dewey Decimal Classification Number) can be used to code additional DDC numbers, including internal and external table numbers, for subject access[55]. The 085 field (Synthesized Classification Number Components) traces the components of a synthesized number. Beall[56] gives several examples of 083 and 085 fields and discusses how the data can help libraries make full use of the DDC for retrieval.

Liu[57] investigated the feasibility of decomposing DDC synthesized numbers in the 700s. He concludes that synthesized numbers can be decomposed automatically in all DDC classes and suggests that bibliographic records could be enhanced with additional indexing vocabulary based on the component parts of a number. Following Lui, Reiner[58] is developing software to decompose DDC numbers assigned by the German National Library. The German National Library began assigning Dewey numbers to resources in its collection in 2004. The goal of this research is to develop software to automatically assign class numbers. It remains to seen whether the MARC 085 field will stimulate new investigations into decomposition and automated number assignment.

The Library of Congress is employing a semi-automated approach for DDC number assignment. The "AutoDewey" software takes advantage of places where the LCC and DDC schedules for literature are similar enough to facilitate mapping between the two schemes. The software suggests DDC numbers based on the LCC number chosen by the cataloger for the work in hand[59]. Where one-to-one mapping is possible, AutoDewey assigns DDC numbers automatically, based on the LCC number. When direct mapping is

not possible, the cataloger must often choose a literary form (poetry, drama, fiction); when the literary periods of LCC and DDC do not match, the cataloger must also choose a literary period. Almost 2,400 DDC numbers were assigned in 2007 using AutoDewey, and 5,105 numbers were assigned in 2008. The software was developed by the Library of Congress.

OCLC has taken a different approach with the beta service Classify[60]. The service provides summaries of classification data (DDC, LCC, and NLM) for FRBR-based groups of WorldCat records. All summaries include the most frequently used number based on holdings and the most recently assigned class number based on OCLC record number; many also include Dewey edition information. The service supports the assignment of classification numbers for books, DVDs, CDs, and many other types of materials. Classification data is accessible through a user interface and a web service.

Previously, in the research phase of the CORC project, OCLC introduced tools to help users assign DDC class numbers. The tools, now available in Connexion, consist of software that automatically generates DDC numbers for web resources and a feature to apply authority control to Dewey numbers. Despite attempts to optimize the content of classification records for automated classification using the Scorpion software, fully automatic classification remains an unrealized goal[61 62].

The DDC is also being used for collection analysis and assessment. In the WorldCat Collection Analysis service, DDC numbers are mapped to the OCLC conspectus to enable libraries using multiple classification schemes to analyze their collections as a whole[63]. At the British Library, the DDC has been used in a pilot project to assess the library's collections in support of higher education in the United Kingdom[64].

CONCLUSION

A rich set of tools is critical for knowledge representation and access in an information environment in which information flows freely in all formats across national and linguistic boundaries. Knowledge organization systems such as the Dewey Decimal Classification have a yet-to-be-fully-exploited role to play in the current and future environment. The Dewey Decimal Classification—with its well-defined categories, well-developed hierarchies, rich network of relationships among topics, worldwide use, language-independent representation of concepts, interoperable translations, and mappings to other subject schemes, plus the large amount of categorized content already associated with the system—holds promise in a variety of applications beyond its familiar role as a shelf location device. The success of Dewey as a tool in current and future environments will depend on ubiquitous and convenient availability of the system in a variety of formats for experimentation and use, continued (direct and automatic) application of Dewey numbers to content, aggressive association of the system with a wide variety of terminological resources, and continuous updating and development of the system by the editorial team in partnership with the worldwide community of Dewey users.

ACKNOWLEDGMENTS

The authors thank the following colleagues for their advice and assistance in preparing this paper: Julianne Beall (Library of Congress), Bob Bolander (OCLC), George Buzash (OCLC), Libbie Crawford (OCLC), Tam Dalrymple (OCLC), Rebecca Green (OCLC), Giles Martin (OCLC), Winton Matthews (Library of Congress), Joseph Miller (H.W.

Wilson), Larry Olszewski (OCLC), Michael Panzer (OCLC), Federica Paradisi (Italian National Central Library, Florence), and David Williamson (Library of Congress). All opinions expressed and any omissions or errors remain the responsibility of the authors.

FURTHER READING

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