

# UDC as a non-disciplinary classification system for a high-school library

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**ABSTRACT:** The paper addresses issues in establishing a user-friendly systematic collection arrangement following a merger of two high school and college library collections classified according to UDC. In the way it was used, this scheme presented some weaknesses with respect to collection usage. Due to the disciplinary nature of UDC, subjects and phenomena are dispersed in the scheme according to the disciplines in which they are the subject of study. At the same time students in a school library often seek interdisciplinary subjects and need access to clusters of documents which according to UDC may be classed in several different knowledge areas. The author illustrates how this problem was resolved by re-arranging the collection according to phenomena. This was achieved by interpreting UDC numbers as if they represented specific phenomena. Thus, by superimposing some local indexing rules onto a disciplinary knowledge organization system it was possible to collocate interdisciplinary subjects under a single class number. Furthermore, by reversing subject numbers and form auxiliaries (atlases, dictionaries, textbooks etc.) which is an option envisaged in the design of UDC, documents were collocated in the way they are most frequently used by students. The author suggests that, in practice, one often needs to overcome the constraints of disciplinary classification and he discusses the approach used in his school library collection.

**KEYWORDS:** shelf arrangement, school library, UDC

## Introduction

This paper does not represent a research or academic study. It is rather a report and account of a practical experience in applying and resolving problems of book classification in our particular library environment. Concerns expressed here are entirely pragmatic. More specifically I will describe the situation, the problems we have faced, and how we have tried to deal with them. I will explain some aspects of the solution we have applied but also point out some of the remaining issues.

## 1. The Lycée Camille Guérin

When translated in English 'lycee' corresponds to both secondary and higher education as it encompasses the three last years of secondary and first two years of higher or college education for certain types of students. In the last two years a lycée offers preparatory courses for university and polytechnic entry exams. These are available for a number of subjects (maths and physics, physics and chemistry, biology, business studies or humanities) that are essential for entering "grandes écoles", engineering, business or teacher education courses.

Our school currently has around 1500 students in attendance split evenly between two levels of programmes mentioned above: secondary and higher education. The teaching staff consists

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of 180 teachers. Included in the teaching staff are two full-time and one part-time librarian. In France, high school (and junior high school) librarians have the same qualification and same professional status as teachers.

School libraries or as we call them in France CDI (Centre de Documentation et d'Information, Engl. Information and Documentation Centres) have a central position in schools. To emphasise the centrality of the CDI role in education even further, when schools are built, libraries are always placed in the centre of the building. Needless to say, with the digitisation and Internet this practice now extends to the computer rooms and Internet access points which are always adjacent to libraries and in the centre of the school building.

The library collections in Camille Guérin has nearly 25.000 books and circa 100 journal subscriptions, as well as resources on optical media (CD-ROMs and DVDs). In addition to his normal library work, a 'documentaliste', as a school librarian is called in France, also performs an important role in teaching. Librarians are responsible for training students in basic information literacy skills such as finding information and learning how to use information retrieval tools. These also include the use of classification, online catalogues, encyclopaedias, creating and correcting references and whenever possible, methods in Web navigation and resource discovery, and finding of relevant and pertinent information. Because of the staff shortage, due to a general trend in reducing staff costs, this important role of a school librarian becomes harder to fulfil.

## **2. Interdisciplinary activities within the curricula**

For several years, even decades, the French educational system has been promoting interdisciplinary activities, providing various training frameworks. For instance, during the last year of secondary education, students have to complete a TPE (Travaux Personnels Encadrés, Engl. Supervised Personal Paperwork), for which they have to create a document on a topic related to at least two disciplines. This assignment includes research of appropriate documents and resources as well as, for science students only, carrying out an experiment. Students are gradually prepared for this kind of work since their junior high school.

It is outside the scope of this paper to discuss the issue of interdisciplinarity which is often described using different and confusing terminology: multi-disciplinary, pluri-disciplinary, trans-disciplinary, inter-disciplinary, cross-disciplinary. Frequently, different authors use the same terminology to describe different things. An excellent book giving more insight into this issue and its relationship to education is written by Roul Pantanella (2000).

## **3. Merging two libraries and the issue of collection classification**

In 2001, a new library was built in the very centre of the Camille Guérin campus. Before the new building, the school had two separate libraries, one for secondary and one for college education. Upon the completion of the new building, collections were merged into a single library. I was appointed librarian and joined the team of five librarians in the year when the process of merging the two collections was about to start. The first step was merging of library catalogue data but with the start of the academic year ahead of us our priority was to process and make available for circulations part of the collection needed by the students which consisted of

10,000 copies. The book processing consisted of assigning of copy identifiers and sticking barcodes and anti-theft devices, while at the same time verifying the acquisition number and corresponding record in the library system. The process was repeated for books from both collections. Although there were slight differences in application both libraries used UDC for systematic shelf arrangement. As we had to manipulate and rearrange books in the new library the issue of classification has become central to our work.

In France two classification systems are used predominantly: traditionally university libraries use UDC and public libraries use DDC. When the CDI was established in Camille Guérin and in order to create closer links to universities, the official recommendation for secondary school libraries was to use UDC. This policy has changed over time and a decade ago the official policy was to move from UDC to DDC. Hence, we had to make a decision. After some deliberation, and in order to facilitate the task of merging the collections, we have decided to stay with UDC. As a reference tool we have chosen the French 7th abridged edition and the decision was that we would align our classification indexes to this edition with a few exceptions and I was put in charge of preparing concordances i.e. mapping tables between the old UDC numbers used in both libraries before and the new scheme. The length of the notation in the new class 8 Languages. Literature and the number of books that library had already classified by the old numbers was an argument against reclassification to new numbers in this subject area. Another class that we considered leaving unchanged was 9 Biography. Geography. History. However, we have chosen to reclassify religion (Broughton, 2000) even though the new class was not available in the French edition and we had to use the Swedish and Spanish abridged schedules online.

In one of our libraries we had notation with inverted combination of main numbers and common auxiliaries of form (0...) Table 1f, for the purpose of grouping by form which was used for dictionaries, atlases and textbooks. We have decided to continue with this practice which is a common approach, as the change of citation order is allowed in UDC if required (McIlwaine, 1995, p.70). Hence, we use (038)802 Dictionary of English, (084)2 Atlas of Religions or (075)53 Textbook of Physics.

#### **4. Classification and shelf arrangement**

It is often said that a classification number when written in the call number is no more than an indication of a book location. But such a book location is not devoid of meaning and may be very important, especially when a library provides open access to shelves. One should not confuse the use of call numbers in closed stacks where books are looked for by library staff only. Although students can search for specific books using catalogues this does not replace the function of free collection browsing supported by systematically organized books.

Being aware of this, we cannot but be concerned about the broad organization of classifications such as UDC which is based on disciplines. Books about the same subject, object, topic, phenomenon, may be scattered among various disciplines. In a library that has to support education orientated to and concerned with interdisciplinarity - organization of a collection according to traditional disciplines may represent a problem.

#### **5. From discipline to phenomenon**

What is a discipline, a school discipline, which is slightly different from a university discipline?

According to Develay (1995) a discipline may be viewed as a triangle. In one corner we have: formal (declarative) knowledge (objects, phenomena, notions); in the second: procedural knowledge (methods, theories); and in the third corner: specific exercises.

Interdisciplinarity when applied to education means either the study of an object / a phenomenon through methods and theories of different disciplines, or, although this may not relate to our problem, to find which methods can be shared. A field of knowledge within a discipline is organized applying different methods and theories, and as pointed out by Szostak (2007), widely used general bibliographic classifications reproduce or mirror this way of organization. Such an approach may be suitable for specialized libraries, with collections covering one discipline or several related disciplines. However, for a general library, similar to the one in our school, this can lead to the above mentioned problem of scattering.

This was the reason why we have decided to apply UDC as if it is not a disciplinary but, what can be now described as, a phenomena classification. Initially, we were simply seeking a practical solution for organizing books as they were needed by our students. It was only afterwards and upon reflection that we have realised the theoretical implications. For instance, normally a book about civilisation and the way of life in France during the 18th century was classified in French history, as was a book about French towns of that same century, which is a logical approach from a discipline perspective. We have, however, moved these, the first to index 39 Cultural anthropology, and the second to index 711.4 Town planning with added facets of place (44) France and time "17" 18th century.

In many instances, we had to "translate" the UDC class descriptions from those representing disciplines to those expressing phenomena. As an example, for the notion of fire, when determining the index to use, we had to work through the UDC vocabulary which still uses discipline terminology, and infer other related meanings: in 53 *Physics*, physical phenomenon (state and motion), 54 *Chemistry*, chemical phenomenon (properties of matter and elements), 62 *Technology* or 66 *Chemical Technology* technological processes, fire disaster (strangely in 614 *Public health and hygiene. Accident prevention*).

Here are some of the new definitions (in French) for classes and indexes, which are written on the shelves:

- 1 Idées et valeurs [Ideas and values]
- 2 Croyances, pratiques et systèmes religieux [Religious beliefs, practices and systems]
- 3 Groupes humains et vie sociale [Human groups and social life]
- 5 Formes, relations, matière et vie [Forms, relationships, subjects and life]
- 6 Techniques
- 7 Arts
- 8 Langues et lettres [Languages and literatures]
- 9 Géographie, histoire [Geography, history]
  
- (...)..." Lieux, époques et événements [Places, ages and events]
- 316.2 Courants de la sociologie [Sociology trends]
- 316.3 Structure sociale [Social structure]
- 316.342 Classes sociales [Social classes]
- 316.4 Processus sociaux [Social processes]
- 316.6 Comportement social [Social behaviour]
- 316.7 Culture et vie sociale [Culture and social life]
- 391 Costume, mode [Dressing, fashion]

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|---------|---|
| 391.6   | Soins du corps [Body care]                                |
| 392     | Coutumes de vie privée [Customs in private life]          |
| 392.8   | Coutumes alimentaires [Eating habits]                     |
| 393     | Rites et coutumes funéraires [Funerary customs and rites] |
| 398     | Folklore, légendes [Folklore, legends]                    |
| 51(091) | Histoire des mathématiques [Mathematics history]          |
| 51-05   | Mathématiciens [Mathematicians]                           |
| 510.5   | Algorithmes [Algorithms]                                  |
| 511     | Nombres [Numbers]   |
| 512     | Calcul algébrique [Algebraic calculus]                    |
| 514     | Formes et figures [Forms and shapes]                      |
| 517     | Fonctions, équations [Mathematical functions, equations]  |
| 519     | Probabilités, statistiques [Probability, statistics]      |
| 52      | Astres, espace [Heavenly bodies, space]                   |
| 523/524 | Etoiles et planètes [Stars and planets]                   |
| 530.12  | Relativité [Relativity]                                   |
| 530.16  | Chaos   |
| 531     | Solides, mouvement [Solids, movement]                     |
| 532     | Fluides [Fluids]  |
| 534     | Vibrations, sons [Vibrations, sounds]                     |
| 535     | Lumière [Light]   |
| 536     | Chaleur [Heat]  |
| 537     | Electricité, magnétisme [Electricity, magnetism]          |
| 539     | Matière, éléments [Matter, elements]                      |
| 7.04    | Thèmes artistiques [Artistic subjects]                    |
| 711     | Aménagement du territoire [Development of territory]      |
| 711.4   | Villes [Cities]   |
| 712     | Parcs, paysages, jardins [Parks, landscapes, gardens]     |
| 72      | Bâtiments, architecture [Buildings, architecture]         |

## 6. The concept of place

Not until the merging of the two libraries was closer to completion were we able to move our indexing policy further in the direction of subject or phenomena classification, using options available in UDC. In the process, the content analysis and indexing policy have become important issues. Content analysis answers the question what is this document about? For instance, a book about “the economic situation in France in the 1920’s” leads to the following questions:

Economic situation: is this a topic or a point of view?

France: is this a facet or the main subject?

1920’s: is this a facet or the main subject?

Before the new approach to classification was introduced, such a book would be placed either at 944”192” History of France in the 1920s or at 338(44) ”192” Economic situation in France in the 1920s. According to our new indexing policy: France was considered to be the document subject, that is studied and described, while ‘economic situation’ and date are perceived as facets. As a result we index this book with the following citation order (44)338”192”.

We were able to apply a systematic principle for cases where the obvious subject of study is a geographical entity.

For instance, for the subject of Italy we may use the following classes

- (450) implicitly geographical description.
- (450)"-" an innovation for "all dates": general historical treatment.
- (450)"14" Italy during the 15th century.
- (450)338 economic situation (date possibly added).
- (450)39 ethnographical description, every day life (date possibly added).
- (450-13) Southern Italy (date possibly added).
- (450.72) Campania (date possibly added).

For the whole world, we use either (3/9) or (4/9) depending whether we wish to include Antiquity.

For practical reasons, books indexed with 944 plus date were not changed, and an equivalence is indicated on the shelves: 944 ó (44). Only the new books, repaired or rebound books have been moved to (44). Where other regions are concerned, the labels have been modified. An unsolved problem remains: how to treat the European Union? For now, it is still at index 339.923 *Economic Unions*. Moving it to 06 *Organizations* is not satisfying. One option is we consider is (4-41) *Europe - Confederations of states*.

## 7. The importance of document analysis

My interest in indexing and my reflection on this practice comes from the period when I was working as an indexer on serial publications for the "Mémofiches" (a collaborative indexing of serials in the field of education). What should not be forgotten when in the process of content analysis and indexing is its purpose: and the main purpose is to describe a document and tell what it is about for the purpose of creating an abstract or an index based on controlled vocabulary, thesaurus or classification. For the "Mémofiches", for instance, we used a descriptive abstract describing the subject, the theme of the document but not the thesis. The purpose of this index was neither to shortcut the reading of the document nor to incite to read it. In my view this indexing policy is wrong.

The result of a document analysis can be formulated in a series of descriptors which indicate the subject, topic, object or phenomenon studied, the point of view or method, date and place if of any importance, and also the physical and intellectual forms of the document. All these elements could be translated into a classification index, but not all of them are necessary. The judgement about the selection of elements that should be recorded is a part of a good content analysis. Another criterion to keep an element or not depends on the set of documents held by the library. Some precisions may be useless if there are only a few documents, and necessary if there are many of them.

An analysis and its translation into a classmark have a purpose, which is: to be understood by the user. That also means that the user is capable of performing a good analysis in order to search and find documents. The function of classification and thesauri is to act as a bridge between the document analysis performed by a documentalist and the analysis made by the information seeker. Therefore, a classmark is not only needed to locate and find books on library shelves, but to communicate meaning to the user.

## **8 Analysis of queries by information seeker**

The way in which an information seeker is analysing his/her query deserves more consideration. Even if at the moment there are a number of tools that are based on natural language, this does not make the need for good query analysis superfluous. This analysis is equivalent to the method used by documentalists or librarians.

An information seeker must define the precise topic about which he/she is trying to retrieve information, as well as some aspects of it. People who are used to performing such analysis have less problems in understanding a classmark, providing the classmark is clear and intelligible. The elements of the analysis should be “readable” within the classification mark and identifiable without a lengthy training. That kind of knowledge could be useful for both shelf browsing and searching a library catalogue.

## **9. Process of implementation of the new indexing policy**

As mentioned earlier in the paper, we have approached establishing the new indexing policy at the beginning of the collection merger and the decisions was driven by a practical need. At the beginning of our project we were not aware of any theory that would support what we were planning to achieve. Our indexing policy was based on a simple reasoning and focused on the question: ‘what is this book about’. Later we were able to establish a link between our practice and the existing theory dealing with the same issue, primarily through the work by Van Slype (1987) but also through reading about the work of Ranganathan, J. D. Brown, Bliss (Begthol, 2004), and finding out about projects such as FATKS (FATHUM) and ILC etc. Literature research helped us finding a theoretical framework that explains, systematizes and justifies our practical approach.

## **10. Some considerations**

### **10.1 Length of index**

When analysing the morphology rules of Esperanto i.e. word formation based on prefixes and suffixes, René de Saussure, proposed a principle of necessity and sufficiency (“neceso kaj sufiĉo”). According to this principle when a suffix or a prefix, in spite being available and correct, does not really add to the meaning, it should not be used. The same principle should be applied when building a classmark.

Classification can also be associated with a principle in cybernetics: the more common information should be coded using less digits than the information that is less common. It is obvious that the high level of precision should be pursued only if this is useful i.e., in large collections of documents with close but different topics and/or facets. When only a few documents exist, the broader classification mark may be used and/or facets may be neglected. Equally, a classmark shared by many documents about the same topic should not be long, allowing the extensions by facets. In fact, the classmark should bear enough meaning as to describe the document in a summarised way, avoiding excess or unnecessary meanings.

### **10.2 Class 8 - Languages and literature**

Because of of the number of courses in humanities in the college programme, our library collection has a large percentage of documents in the field of literature. This was the reason why we have opted not to undertake any significant changes in class 8. Effectively we modified the

classmark for a small number of books only, and kept the system used by the former “college” library as it was.

Literary criticism and theory is collocated as separate from fiction following the standard subdivision for these subjects at 82. For the remainder i.e. for fiction within a certain literature we collocate titles by author, literary criticism about the author and literary studies of his work. We use alphabetical extension A/Z to make distinction e.g. 840HUG would represent books about Victor Hugo and about Hugo’s books. We do not make distinctions between these two different types of literary studies.

The literature in UDC is classified based on the language in which the work was originally produced, hence works of the authors writing in two languages will belong to two literatures e.g. Beckett (work written in English will belong to the body of English literature and those written in French will be collocated with the French literature). A similar case is Kundera whose works belong to both Czech and French literature. In our experience the current system of grouping literature by formal principles rather than attempting to classify fiction according to a theme or genre is more suitable for our students’ needs. This criterion of formal classification is also applied with philosophy, where books by and about certain philosophers get collocated under 1 followed by an alphabetical extension e.g. 1NIE for books about Nietzsche. When the book is an anthology, or a thematic analysis of a philosophical topic (“Ideas and values” as we define this class 1 in our library), it is classified according to the topic.

### **10.3 Specialized libraries**

The experience in the school library as described here may not be valid for specialized libraries, where the risk of scattering of documents is less important and where the grid of discipline is obvious. Even some general libraries in which collections are divided into different units, can operate in terms of knowledge organization as independent specialized libraries. Our policy was very suitable for our library setting in which all books are located in the same space and can benefit from our phenomenon-based ordering system.

### **10.4 Disciplines in a phenomenon-based classification**

There are different ways to place disciplines in a phenomenon-based classification (ISKO Italia, 2008). It is possible to consider the disciplines as independent phenomena, in 00 or 16 or 37. It is also possible to consider them as a facet of the main studied phenomenon (Hong, 2005), by ending, for instance, a facet indicator such as 0 or a .0 . An example would be e.g.

54 Molecules and reactions.

540 Chemistry (as discipline).

## **11. Some issues**

### **11.1 Chinese**

One of subjects taught in our school is the Chinese language. As our system gives preference to the place facet, all non-fiction books are gathered under the class of China irrespective whether these are Chinese or translated. But our system did not give provision for gathering fiction about China. We have resolved the problem by creating a bibliography of all available works which we have made available to students next to the Chinese language section.

### **11.2 Fire**

We have recently received books about fire, flame, and combustion and we found problems in placing them. According to our system each book had to be analysed in order to determine the precise topic, or phenomenon described, and not the discipline in which it can be studied. The question is which of the topics for fire should be used to collocate all books even if they do not describe exactly the same phenomenon. For the moment, our policy is to classify documents with the classmark corresponding to its precise analysed phenomenon. But this approach is still under discussion. Apart from this example we have many such problems with books in the area of engineering.

### **11.3 International relations**

Books about geopolitics and international relations imply facet of place. When the place is related to a single country e.g. Geopolitics of Russia, it is not clear which citation order of facets would be the most appropriate (470)327 or 327(470) with possibility to add a date. We have decided to collocate books under Geopolitics 327(470), determining that the topic is more about diplomacy and geopolitics than Russia. This is open for discussion. The same problem appears in books about population and demography.

### **11.4 American literature**

As mentioned above (10.2) we are classifying literature according to the original language of the work. But we have continued to use combination of the number for English literature and place for e.g. 820(73) American literature. This is however the only situation in which we associate place with literature because of the significance of the subject and the number of books.

## **12. Possible developments**

We can envisage two possible developments:

creation of alphabetic and systematic lists of phenomena related to a UDC index, which is equivalent to a translation of UDC into a new paradigm. It is the problem of an authority list.  
 build tools to train users to navigate in such a classified collection, and to use this knowledge within other systems like search engines and online catalogues, including the traditional encyclopaedias and book indexes

Class by class and section by section, we have to analyse and verify the pertinence of the new indexing policy. Some considerations may influence the continuation of this system. For instance, a change in library staff could lead to a change in classification in spite of the size of the collections. That change could be a move to DDC, as officially recommended, which would be a return to a discipline-based classification. A new librarian less aware of classification research could drive the system little by little back to a disciplinary use of UDC.

## **13. Conclusion**

The experience with classification was not a controlled experiment led by a dedicated researcher. It was a development motivated by a real collection management need and an answer to a practical question: how to organize the collections in given circumstances of the library merger and the interdisciplinary pedagogy applied.

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In order to solve some problems created by the possible scattering of documents in our secondary school and college library, we are using UDC as a phenomenon-based classification rather than as it was intended to be used as a discipline-based classification.

We are aware that all our arguments can be challenged and reversed. This research undertaken in the process of writing this paper will certainly help us go further towards a more efficient system. And we are looking forward to receiving feedback.

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