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UDC: International Medium Edition – English Text. A Critical Appraisal

Chatterjee, A., Choudhury, G.G.: **UDC: International Medium Edition – English text. A critical appraisal**
Int. Classif. 13 (1986) No. 3, p. 137–141, 4 refs.

UDC International Medium Edition – English Text brought out 24 years after the publication of UDC, 3rd Abridged English Edition, has introduced many changes both in physical presentation and the principles followed. These changes have been reviewed here citing suitable illustrations. The significant features added in this edition and the shortcomings which still continue, have been mentioned. It has been pointed out that the new edition will necessitate large-scale reclassification, but will enable the classifier to provide more precise and coextensive class numbers. (Authors)

Abbreviations

UDC(A): UDC, 3rd Abridged English Edition, 1961.
UDC(M): UDC: International Medium Edition – English Text, 1985.

0 Prologue

The British Standards Institution has brought out the English Text of the UDC: International Medium Edition in 1985, which is to replace UDC, 3rd Abridged English Edition published in 1961. The new edition is in two volumes: Volume 1: Systematic Tables and Volume 2: Index. This paper attempts to evaluate the schedules of the International Medium Edition – English Text drawing comparison with the 3 rd Abridged English Edition. The study does not include the index of UDC(M) as it was not available in print up to the time of preparing this paper.

1 Introduction

The magnificent edifice of the UDC built by Paul Otlet and Henry LaFontaine on the solid foundation of Melvil Dewey's Decimal Classification, has undergone expansion, modification and renovation several times during the last 80 odd years and in the process has developed from a 'Bibliographic repertory' into 'a numerical system for the classification and retrieval of documents of all kinds' (4). The 'maxi' and 'mini' editions of the scheme prevalent so long have since given rise to a new 'midi' edition much to the relief of the medium and small sized libraries who have been struggling to cover the ever-expanding horizon of the printed world by the abridged edition for about two and a half decades. The new elegantly produced UDC(M) is obviously the culmination of the continuous revision that has been carried out and notified through the official 'Extensions and corrections to the UDC', published annually.

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2 Physical changes

The first edition of the UDC in French, published between 1904 and 1907, contained about 33.000 subdivisions. The number of subdivisions went upto about 140.000 in the third complete edition, published in German between 1934 and 1951. This edition was in seven volumes of tables and three volumes of index. The third (and perhaps the last) abridged English edition, published in 1961, was in one volume and contained around 14.000 subdivisions. The present2-volume Medium Edition English Text, containing over 40.000 subdivisions, tries to find a balance between the two extremes. The layout of UDC(M) is more systematic than that of UDC(A) and follows a definite pattern. Each entry consists of three sections: the class number, the class description which clarifies the scope of the class, and various amplifications which include notes, cross references (denoted by the symbol (arrow) instead of *see* and *see also*), number building instructions, and examples of compound numbers.

3 Underlying principles

UDC emerged out of a practical necessity and there seems to have been no principle working in the minds of its innovators, except that it must be compatible with the purpose for which it was developed. As such, UDC is an out and out practical classification. Nevertheless, in UDC(A) the following basic principles were claimed to have been evident:

1) It is a *classification* in the strictest sense depending on the analysis of idea contents.
2) It is a *universal classification* which covers every field of knowledge as an integrated pattern of correlated subjects.
3) It is a *universal decimal classification* constructed on general to particular principle applying decimal divisions (1).

All these principles seem to be valid in UDC(M) as well, but it is doubtful if these can at all be called 'principles' in the true sense of the term. Curiously, UDC(M) has not reiterated these principles, but has instead mentioned about a few main characteristics of the scheme:

(a) That it is a general classification covering the universe of information.
(b) That it is a documentary classification.
(c) That it has been developed into a faceted classification from an enumerative one.
(d) That it was designed for bibliographic use but has proved eminently suitable for library use.
(e) That it is an aspect classification in which a phenomenon is classed according to the concept or discipline in which it is considered (4).

Some of these characteristics are found in other schemes as well, but what makes the UDC a widely used scheme is its unique combination of simplicity of an enumerative scheme and synthesis of a faceted scheme.

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4 Integrity of nnmbers

While a new edition of a classification scheme is always expected to keep pace with the growth of subjects, it is also desirable that the numbers already in use in the previous edition to denote certain definite ideas are allowed to continue to denote the same ideas as far as possible so that minimum reclassification is necessary when the new edition is adopted.

41 Main class numbers

Such integrity of numbers has been maintained in UDC(M) for all main classes except for main class 4 Philology. In UDC(A) placing of books on philology under main class 8 Literature was optional, but in UDC(M) the main class 4 has been abolished and the number has been kept blank following its cancelletion in 1963 (2), and Philology has been permanently shifted to main class 8, necessitating reclassification of all existing books on Philology in a library. But surprisingly the explanation given for such a change is not the 'better collocation' that it has actually achieved, but 'to make room for future development' (4), which indicates the possibility of using the class number 4 in a different connotation in future which will further affect the notational integrity of the main class numbers of the scheme.

42 Sub-class numbers

Such blanking of numbers or 'starvation system', as Ranganathan calls it, has also been followed in other parts of the schedule as is evident from the fact that many numbers used in UDC(A) have disappeared in UDC(M), e.g. class numbers 38/388, 513, 515, 629.13, 668, 681.4, 729, 92/928, etc. Again, many blank numbers of UDC(A) like 336.4, 573, 681.3, 681.5, 681.7, 902/904, etc. have been used in UDC(M) as rich numbers (i.e. to denote some ideas). Further, class numbers for several concepts have also been changed in UDC(M), e.g. class number of General Biology has been changed from 574 to 573, for Forestry from 634.0 to 630, for Archaeology from 930.26 to 902, for Biography from 92 to 929, for Genealogy from 929 to 929.5, etc. Even connotations of some class numbers have been changed without following the starvation system, thus violating UDC's own policy, e.g. class number 339 which denoted Distribution, Consumption, Conservation of Wealth or Goods in UDC(A), now denotes Trade, International Economic relations, World Economy, Global Economy. Similarly, class number 574 denotes General Ecology instead of General Biology. All these changes have considerably affected the integrity of numbers in the scheme and thereby created problems for the libraries following the scheme.

5 Notational features

UDC divides the universe of knowledge into ten main branches and denotes them by decimal fractions .0 to .9 and then goes on dividing each number on decimal (sometimes centesinial) principle, but the initial point and the Dewey Decimal Classification (DDC) convention of minimum three-digited numbers are disregarded.

The speciality of UDC lies in the use of zeros. It uses one zero and two zeros as connecting symbols (or facet indicators) for numbers of special auxiliaries. What is more significant is the simultaneous use of zeros as rich digits (i.e. for denoting some specific ideas). UDC(A) used zeros as rich digits, in a limited way, e.g. 30 Sociology. Sociography, 550 Geophysics, etc. UDC(M) has further expanded the use of the zero as a rich digit in its schedules. Some new instances where UDC(M) has made such use of the zero are 630 Forestry, 80 Linguistics and for different languages, e.g. 802.0 English, etc. Such use of the zero was necessitated by the inherent limitation of the notational base of the UDC and was possible due to abandoning of the system of minimum three-digited class numbers of the DDC.

51 Connecting symbols

From the very beginning UDC has been using several connecting symbols which were introduced so as to bring the quality of facetedness into an enumerative base. The following symbols were available in UDC(A):

+ / : = (0) ( ) (=) " " .00 − .0 and '

Besides, square brackets [ ] were also being used which denoted subordinate concepts and lent itself to intercalation (1). Another symbol which was used in a restricted way was asterisk (*) which was to be prefixed to non-decimal numerical sub-divisions. In UDC(M) all these symbols have been retained.

511 Algebraic subgrouping

The square brackets were put to new use in 1974 (3) for algebraic subgrouping which has been adopted in UDC(M). As a result the connotational problem created by the practice of adding numbers from common auxiliaries usually at the end of a class number or with any single component of a compound class number has been obviated to a great extent, e.g. the subject 'Renovation of plastic factory' will be represented by the class number 725.4:678.004.69 according to UDC(A), which, if interpreted componentwise, will mean 'industrial building in relation to renovation of plastic'. Even an alternative number 725.4.004:678 cannot convey the correct connotation. But if the class number is constructed as [725.4:678].004.69 the connotation will be clear as the number will neither indicate renovation of plastic nor renovation of industrial building, but renovation of building for plastic industry.

512 Fixation of order

The constituent parts of UDC compound numbers are reversible to facilitate use of alternative access points in bibliographies, indexes and catalogues. But where such reversal is not required, as in the case of book classification for self arrangement, the order of the component parts may be fixed. Use of the double colon (::) for this purpose was recommended in 1974 (3), and has now been incorporated in UDC(M). But there seems to be no real need for this provision, since a class number with a single colon may be treated as reversible or not reversi-

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ble depending on the purpose for which the number is used.

52 Phase relation

In spite of the fact that UDC(M) has introduced many new features, it has not been able to distinguish notationally the various types of phase relation. The Colon (:) is still the only symbol to show the relationship between two classes. Thus "when UDC numbers are linked by colon, it merely shows that the subjects denoted by the numbers are related to each other in some way; it does not specify which influences the other(s), nor show the nature of the influence exerted – in short, it does not denote the phase of the relation" (4). For example, the class number 025.43:681.31 does not indicate whether it denotes 'thesauri on computers' or 'use of computers for construction of thesauri'; it simply means 'thesauri in relation to computers'. However, the preferred order of phases can be fixed by use of double colon or square brackets.

6 Degree of synthesis

The UDC is claimed to be a faceted classification developed out of an enumerative classification. This claim is based on its number building capacity, which has been considerably increased in UDC(M). The synthesis is achieved by 'As' instruction and use of auxiliaries, common and special.

61 'Subdivide as' instruction

The 'As' instruction, which has now been renamed as 'Subdivide as' instruction denoted by the symbol ≅ has been used more extensively in UDC(M). Such instruction appears almost on every page of the schedule under main numbers (e.g. 611.81 ≅ 616.831,) special auxiliaries (e.g. 675.025 ≅ 675.055), common auxiliaries (e.g. "5" ≅ "4") and even auxiliary numbers are derived by the same device from main numbers (e.g. –036.4 ≅ 678.4) or vice versa (e.g. 914/919 ≅ (4/9)) and numbers from the main schedules are used to divide their respective sub-divisions (e.g. 659.28 ≅ 659.2). These provisions have obviously increased the synthesising capacity of the scheme to a great extent.

62 Auxiliaries

The most outstanding feature of UDC is perhaps the large number of auxiliary tables which have brought facetedness in its structure. UDC(A) had nine Common Auxiliary tables and three types of Special Auxiliaries. In 1974 two more auxiliary tables were introduced (3). UDC(M) has thoroughly revised, enlarged and reorganised the existing auxiliary tables of UDC(A) and has also incorporated the auxiliaries added later. The chief developments in auxiliary tables, as found in UDC(M) are as follows:

1) The number of Common Auxiliary tables has been increased from nine to eleven by addition of two new tables, viz. Table I(k) –03 Common Auxiliaries of Materials and Table I(k) –05 Common Auxiliaries of Persons and Personal Characteristics. It may be pointed out that –05 divisions were also used for Persons in some classes of UDC(A), but only as Special Auxiliary numbers (e.g. in class 3 Social Sciences and 616 Disease).
2) The Common Auxiliary tables have now been grouped into two categories, viz., Independent Auxiliary Tables and Dependent Auxiliary Tables. The Common Auxiliaries of Language, Form, Place, Race and Time are Independent Auxiliaries since these may be added to any number from the schedules (e.g. 630(540) Indian Forestry), as also may be used independently when so required. For example, for classifiying maps where only place facet is important, the Common Auxiliary numbers of place may be used independently. The Common Auxiliaries of Point-of-view, Materials and Persons are dependent auxiliaries as these can never be used independently. An independent auxiliary number when used alone or cited in the beginning of a class number, is filed before a main number.
3) The symbol (*) was used in an example in UDC(A) as a connecting symbol for attaching non-UDC numbers to any UDC number (1). Its use was clearly recommended in 1963 (2). In UDC(M) the use of this symbol has not only been recommended, but even adopted in some parts of the schedule as in 630 Forestry where numbers have been taken into the UDC schedule itself from the Oxford System of Decimal Classification for Forestry, e.g. 630 * 2 Silviculture.
4) The connecting symbol hyphen (–) was earlier used for Special Auxiliary numbers in specific schedules and rarely in Common Auxiliary tables as in case of zones and regions under Common Auxiliaries of Place. Now Materials and Persons divisions having been brought under the purview of Common Auxiliaries with hyphen as the connecting symbol, this symbol has become the connecting symbol for both common Auxiliaries and Special Auxiliaries, e.g. 51–3 Computation techniques in Mathematics, where –3 is a Special Auxiliary number and 51–05 Persons concerned with mathematics, where –05 is a Common Auxiliary number for Persons.
5) Another kind of Special Auxiliary (not designated so, but suggested by its nature), is directly added to a class number without any connecting symbol. It was available in UDC(A) in a limited way (e.g. in 8 Literature and 661.8 Metallic compounds) and has been retained in UDC(M) as a regular device and used more frequently in some classes. The device has also been named as 'Final Digit Device'.
6) UDC(M) has also introduced another device of constructing numbers for new subdivisions by combining the numbers of two existing subdivisions, e.g. in Common Auxiliary Table I(k) –05 Persons and Personal Characteristics, the number for the concept Father can be constructed as –055.52–055.1 by combining the numbers of two existing subdivisions –055.52 Parents and –055.1 Male. This device is tantamount to the Super-Imposition Device enunciated and used in Colon Classification by Ranganathan.
7) Common Auxiliary numbers from one table are sometimes used for further specification or divisions of existing subdivisions from another Common Auxiliary table, e.g. in table I(k) –05, the subdivision –054 Persons according to ethnic characteristics, etc. is further divided by using numbers from tables I(e) and I(f). Thus the number for coloured persons will be –054(= 9).

7 Significant additions

UDC(M) has also introduced some other significant additional features to the great relief of the classifiers. It is now possible to construct class numbers more precisely with the help of these additions.

71 New numbers

Although it is difficult to estimate exactly the number of new isolate numbers added in UDC(M), upon verification of the whole schedule it appears that the Editorial Board paid due attention to the new developments taking place in the universe of subjects. Consequently, necessary schedules for the newly emerged and develop-

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ing topics have been prepared, as may be seen from the following illustrations:

1) Almost nothing was available on computer and computer technology in UDC(A). The only place where documents on these fields could be accomodated was 681.142 Equation solving machines, Computers. There was, however, a footnote under this number which stated that a new schedule for computers would be introduced at 681.3. UDC(M) has incorporated new numbers for computer and its technology at two places under 519.6 (Programming) and 681.3 (equipment).

2) UDC(A) did not have any provision for the subject "automatic control engineering" which encompasses modern developments in the field of Technology and automation. UDC(M) incorporates this under 681.5 Automatic control engineering.

3) Similarly, space science was a neglected area in UDC(A). Documents on all aspects of space science were to be classed under 629.19 Astronautics, Space vehicles, stations, etc. But a footnote under the above number indicated that a new air/space schedule was under preparation. UDC(M) has incorporated this new schedule at 629.7 which is quite exhaustive.

72 Specificity of class numbers

UDC(M) has taken certain measures which enable a classifier to provide more specific numbers to his documents as compared to UDC(A). There are instructions at many places in the form of notes for bringing required specificity in class numbers. Frequent enumeration of special auxiliaries also helps in constructing specific class numbers.

721 Typical example

The Chemistry schedule of UDC(M) is a typical example of the extent to which the specificity in class numbers can be achieved. The schedule for Inorganic Chemistry at 546 incorporates two very important tables, viz., 'Elements in the order of their atomic number's and 'Elements in the alphabetic order of their symbols', in which the corresponding UDC number for each element is also given. These tables provide immense help to the classifier to construct class numbers for chemical compounds and complexes. Necessary instructions have been given detailing the method of constructing such class numbers by using the connecting symbol apostrophe ('), e.g. 546.561'131 Cupric chloride (derived by joining the numbers for Monovalent copper 546.561 and Chlorides 546.131), and for isotopes by using the connecting symbol asterisk (*), e.g. 546.791*238 Isotope of uranium (with mass number 238). In the schedule for Organic Chemistry at 547, the compounds have been enumerated and the corresponding formula for each compound has been mentioned which is an aid to the classifier. There is also a provision for construction of numbers for compounds by using apostrophe ('), e.g. 547.1'128 Silicones (derived by joining the numbers for Organic chemistry in general 547.1 and Silicon 546.28) and even by directly adding the condensed formula with class number 547, e.g. 547CH_4O Methyl alcohol.

73 Class heading

UDC(M) seems to be more careful than UDC(A) in the choice of headings of main classes and the terms to represent subdivisions. The headings of main classes and subclasses are now more expressive bringing out the full scope of the classes concerned, e.g. the heading for main class 3 was simply 'Social Sciences' in UDC(A), but in UDC(M) the heading is 'Social Sciences. Statistics. Politics. Economics. Trade. Law. Government. Military Affairs. Welfare. Insurance. Education. Folklore.' In choosing the terms to represent subdivisions, UDC(M) seems to have followed the Canon of Currency (enunicated by Ranganathan). Accordingly, many existing terms of UDC(A) have been replaced in UDC(M) by terms which are current among the specialists, e.g. the term 'Internal Politics' has been changed to 'Home Affairs', 'Virus' under 'Bacteriology' to 'Virology' and so on.

8 Continued lacunae

Nevertheless, some of the lacunae found in earlier editions of UDC still continue in UDC(M). These relate mainly to bias and scattering.

81 Bias

Dewey Decimal Classification, on which UDC is based, showed certain distinct bias towards American subjects and Christian religion. UDC removed this bias to some extent but could get rid of it completely. UDC(M) has not also been able to do much in this direction. The most awkward looking bias that still persists is in class 2 Religion, where the major portion of the schedule is still devoted to subdivisions relating to Christian religion. Besides, several class numbers which are specially relevant to only the English speaking world have been included in this edition though they are not parts of the official international selection, e.g. 141.814 Pre-Marxian English socialist doctrines (4).

82 Scattering

In some subject areas the provisions of the scheme result in scattering of related materials, which causes difficulties to classifiers in the matter of selecting the appropriate class number. Two examples from 62 Engineering are cited below to show such scattering.

620.4	Power stations (Class here only general studies. Class information about particular kinds of power station at the number for the subject)
621.311	Power generation and supply. Power stations.
621.311.2	Power stations according to type of prime mover (under this number various types of power stations have been enumerated including hydroelectric power stations with class number 621.311.21)
621.221	Hydraulic power plants in general

These class numbers show that while general works on power stations are to be kept under 620.4, works on particular types of power stations will be classed under 621.311.2. Further, documents on hydraulic power plants may be kept at two places, viz., 621.311.21 and 621.221. Surprisingly, Nuclear power plants have not been brought under 621.311.2, but have been placed

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under 621.039.577 which will isolate documents on nuclear power plants from other types of power plants. Similarly, 69 Building construction and building materials have been unhelpfully separated from 624/625 Civil Engineering though the former is an integral part of the latter subject. Such provisions are likely to create confusion and cause cross classification in libraries.

9 Conclusion

The foregoing analysis has clearly brought out the fact that UDC(M) is in every respect an enormously improved version of the scheme, and is able to provide more precise and coextensive class numbers. But at the same time a good amount of changes in class numbers will necessitate large-scale reclassification in some areas which will not be to the liking of the librarians due to the labour and cost involved in such a reclassification. Besides, the continued bias as seen in the scheme is bound to cause a reflection on its claimed 'universal' character. It is hoped that the future edition will take care of the defects stated above to make it an impeccable tool of the librarian.

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JUST PUBLISHED

Die Klassifikation und ihr Umfeld (Classification and its Environment)

the Proceedings of the 11th Annual Conference of the Gesellschaft für Klassifikation eV (German Society for Classification), Münster, 18-21 June 1986, ed.by

Dr.P.O.DEGENS, Dr.H.-J.HERMES, Prof.Dr.O.OPITZ
416 p., DM 90.- (hard cover), DM 85.- (soft cover)
ISBN 3-88672-017-9 and 3-88672-016-0 resp.
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