CLASSIFICATION AT THE CROSSROAD

Using the criteria of facet analysis, facet formula and fundamental categories, a comparative and critical appraisal of the traditional general classification and newly emerging special classification schemes, with their roots in faceted classification, is conducted. The efficiency of the latter schemes from the viewpoint of their information retrieval capacity is also evaluated. Judging from the present state of development of general classification, it is concluded that the evaluation of a general universal classification scheme, using faceted structure as its base, is still a remote possibility.

Introduction

The user of classification schemes is at the crossroads of newly emerging special schemes, with their roots in faceted scheme, and the traditional tree-of-knowledge general classification schemes. The predicament in which he finds himself arises mainly out of a limited ability of the traditional schemes to designate accurately specific concepts of the advancing frontiers of new and specialised subject fields. The thought that assails the users is whether the traditional schemes will survive the onslaught of special schemes or give in to it. The capacity of special classification schemes to adequately designate compound subjects emanates from its being tailored to the requirement of a particular subject field. Its advantages are claimed to be many and drawbacks few.

Faceted Scheme

A faceted classification scheme, it is claimed, incorporates minute details of a subject field and provides co-extensive classification numbers with shorter notations by flexible combination of terms of its schedule. In combination with subfacets, even more precise subject classification is possible through the prescriptive combination order for facets and subfacets in the scheme. All the aspects of a special subject field, which are dispersed in UDC schedule due to their subordination to different aspects, are brought together in a faceted scheme. The list of terms, produced through facet analysis, is helpful both at the pre-coordination and post-coordination stage for search mechanism, while the hierarchical arrangement of facets within their respective categories facilitates generic search.

This is no wonder because it has learnt from other schemes and tried to avoid pitfalls that are inherent in them.

Even then, a combination of various special classification schemes, individually covering all the disciplines, cannot form a general classification scheme. But, the specific areas of enumerative classification schemes can be developed to any minute detail to provide detailed schemes for classifying specific subjects. The snag, however, is that the complete English editions of UDC are still not available and so is the case with special subject editions of UDC scheme.

The present tendency to depreciate the traditional enumerative systems of classification in favour of faceted schemes needs to be evaluated by going deeper into the implications involved in the structure of both the systems.

The Classification Research Group (CRG) of U.K., formed in 1952, is responsible for the faceted scheme which is supposed to break a new ground, uninhibited by the limitations of the existing classification schemes. The principle of the scheme is based on the facet analysis of Ranganathan to whom the debt has duly been acknowledged by them. They have already built some faceted classification schemes on specialised subjects. The Universal Decimal Classifi-
cation scheme is, in fact, the first analytico-synthetic scheme which displays faceted structure. Colon classification (1933), in which facet analysis has found practical application to a minute detail, is said to have, in turn, drawn its inspiration from UDC scheme [5].

The details of the faceted scheme need no further elaboration here as much has been written elsewhere on this subject [5]. The salient point that needs to be discussed is whether it is capable of superceding the enumerative schemes in future.

The Difference

Contrary to the enumerative classification list wherein basic ideas are used to build up composite subjects from top to bottom, the listed basic terms in a faceted classification are made to derive composite terms from bottom to the top; but, the difference between analytico-synthetic and faceted classification seems to be rather overlapping. According to Ranganathan, it is the use of postulates and principles in an analytico-synthetic scheme that differentiates it from the faceted scheme. Thus, every analytico-synthetic classification is faceted while the reverse may not be the case. But, these postulates also introduce an element of rigidity in colon classification as will be presently discussed.

The Criteria

A classification schedule is now supposed to conform to the stipulation that it should follow the logical process of division by successive characteristics, all different from one another. According to each process of division, a class should be divided by one characteristic at a time and exhausted before another is taken up till the smallest group is reached. An array of coordinate divisions, thus produced at each step, are arranged into a helpful order which may differ at each of the successive stages. This facet analysis or the process of analysis of specific subjects into their constituent elements of facets by application of different characteristics also gives rise to subordinate divisions simultaneously which should proceed in a chain of decreasing extension and increasing intensity.

These co-ordinate divisions are precisely divided into categories or facets for subsequent co-ordination to formulate an enumerative schedule like Dewey Classification scheme (DC) (1885), whereas in faceted schemes, they are kept separately for co-ordination according to conceptual requirement. It can, however, be asserted without much contradiction that it is difficult for a general classification scheme to conform to such rigorous standard of facet analysis.

That the UDC does not strictly follow this principle cannot be denied. A glance at its schedules shows that sometimes the same characteristic may repeat itself resulting in cross classification, e.g., in the divisions of 622 Mining & Mineral dressing, and also at 656 Transport services. To criticise the UDC scheme for its failure to consistently adhere to the principles of facet analysis, which were derived long after the advent of DC, will be like putting the cart before the horse.

But, in all fairness to D.C., it may be conceded that there is little that can be considered as a standard for judging the correctness of hierarchical pattern in a tree-of-knowledge classification. The concept of hierarchy, as prevalent in all classification schemes, is only relative because they, inspite of all the logical reasoning, reflect diverse, if not arbitrary, viewpoints of their creators and as such, they cannot be considered as absolute in any sense of the term. What is classified is only the literature on subjects and the so called hierarchy, that one encounters in most of the schemes, is artificial.

UDC appears like an attempt at a compromise between the porphyrial tree-of-knowledge classification and the modern analytico-synthetic classification.

Decimal Classification, being the base of UDC, is often put to blame for such inconsistencies of the latter scheme, but DC, developed as a practical tool for book classification, could have hardly anticipated its use in analytico-synthetic scheme, and to judge the efficiency of such a scheme now by the criteria of facet analysis is hardly fair.
A Thesaurus

The enumerative scheme like DC, no doubt, consists of subjects whose facets originated through different characteristics of division and, therefore, facet analysis is implicit in it to some extent. The modern faceted scheme only makes the facet analysis explicit.

No doubt that in comparison to enumerative classification schemes, a faceted classification can provide co-extensive class numbers with shorter notations for highly specific subjects. This is achieved through provision for alignment of two or more terms in as many ways as may be necessary to designate specific subjects. It includes generic terms within its categories to facilitate generic survey. In that way, a faceted classification is like a thesaurus or a list of standard terms, systematically sorted and arranged into appropriate categories, for use in combination to describe subject contents of a document. It seems to operate somewhat on the pattern of uniterm indexing whose links and roles seem to correspond to its relational operator. But, while the faceted classification, with its well-ordered constituent elements, provides a multi-conceptual display to describe a subject content explicitly, concept coordination in uniterm indexing lacks a purposeful descriptive in the arrangement of its subject headings. One is, however, left with an uneasy feeling that the faceted scheme, with its faceted notation, is probably veering more towards subject analysis and codification than classification.

Fundamental Categories

In faceted classification, the subject terms representing a particular discipline are sorted through facet analysis into a group of mutually exclusive and homogeneous facets or categories.

In colon classification, these so-called fundamental categories are pre-fixed as PMEST or personality, matter, energy, space, and time. This limited number of fundamental categories, reflected in the facet formula PMEST, imposes a hindrance to classification of subjects with more facets and this could be overcome through the Postulate of Levels and Rounds to fundamental categories of Colon Classification (CC). So, limiting the number of fundamental categories to five, as in the earlier editions of CC, a larger number of facets in a subject can be accommodated in it by repeating some of PMEST round and round. It cannot be helped if this idea appears to be a complex one to many users.

Facet Formula

The limitation in facet formula of CC originated from the misconception that the facets of subject are dependent or belong to the basic class which, as has now been lately realized, are facets of the subject itself. Since all the facets of a subject belong to the subject itself, basic class is only a facet relative to it.[3]

So, instead of following this devious route of philosophical approach as in CC, faceted classification has dismissed the limitation imposed by PMEST and decided to select that number of fundamental categories for a specific subject field as the situation may warrant.

Although faceted classification does not prescribe any facet formula like PMEST to form any pre-coordinated heading, the sequence of facets, when in combination in the citation order, is expected to follow their sequence in the schedule as a matter of convenience. This similarity in the pattern of the facet formula with that of CC is discernible; but more flexibility in the order of combination of facets in UDC numbers is worth noticing. Its reason lies in the absence of any prescribed rigid facet formula for UDC, where even the auxiliaries can be brought forth as entry elements with the help of facet indicator device. But, the specific relationship in which the terms combine with one another to designate a synthetic concept is not explicit in UDC due to non-provision of any relational operator, although the common auxiliary 'point of view' presents a vague attempt in this direction.

The Limitations

The earlier limitation of enumerative schedule like DC is again reflected in faceted scheme. DC has been compartmentalised into limited subject fields, each of which has been developed to a minute detail but it provides no interlinking device whereby facets of any subject field can be related

Vol 16 No 1 March 1969
or combined with that of another for classification of complex subjects.

In faceted schemes, the main classes are expanded to certain limits and then closed abruptly. They are mutually exclusive classes with no prescriptive combination order for classification of composite subjects comprising of elements from different main classes of the schedule.

But this limitation has been eliminated in UDC wherein auxiliaries help to combine and synthesize elements from different classes and divisions to designate complex concepts, although the arbitrary nature of symbols of auxiliaries is open to criticism.

This is important in view of the fact that subject barriers between various disciplines in science and technology are gradually breaking down giving rise to a number of marginal and specialized subject fields. Even if such subjects could not be anticipated and included in the regular UDC schedule, yet it is possible to designate them by generic terms. But such marginal topics cannot be readily incorporated in the faceted classification schedule due to its coverage of restricted subject fields.

Generic Survey

In faceted classification, the terms within each facet are sought to be arranged hierarchically according to principles of general classification. But, generic relationship cannot be built in the scheme as intrinsically as it is with DC. However, sometimes, one comes across pseudo-hierarchical relationships resulting from faulty subordination in the notation of such tree-of-knowledge classification. They give rise to 'false links' and 'unsought terms' when some class numbers (for example, 621.328) is chain indexed. Yet, a general hierarchical pattern is interwoven with the its notation which, in turn, gets reflected in the scheme as a whole.

Genus-species relationship can be displayed in a faceted scheme by provision of generic terms in schedule, but they, apart from being an artificial measure, are not adequate for generic survey.

The Evaluation

The efficiency of a classification system can be evaluated against its capacity for information retrieval for which it is meant.

Aslib-Cranfield Research Project (First Report, 1961) has established that the performance of faceted classification is 73.8 ± 2.5 per cent, being inferior to that of UDC which is 75.6 ± 2.5 per cent. Single entry classified file and chain index was indicated to be the reason for the weakness of information retrieval capacity of faceted scheme. But the root lies even deeper. The indexing and searching process is liable to be lengthened by use of notational symbols in place of natural language [5]. This inadequacy of its information retrieval system through a helpful index can be remedied by using a supplementary alphabetical file containing rotated verbal headings in a pre-coordinated system. The single-entry classified file has to be tolerated since introduction of multiple-entry system to it will mean the alteration of the citation order of the facets constituting the subject concept. An information retrieval mechanism employing UDC scheme has an element of flexibility in it due to the easiness with which it can be used in conjunction with multiple-entry system.

To Conclude

The CRG is attempting to create a general classification scheme. But, since the basic principles of a general classification scheme are yet to be placed on a firm ground, a mere juxtaposition of special classification schemes will not be conducive to such a scheme for reasons already mentioned before and also there is hardly any indication that the project is likely to succeed.

Not to speak of a general scheme, even a special classification scheme, covering a limited subject field, is difficult to construct. It cannot take in marginal topics of interest and is not capable of introducing new indexing terms in its list. The fact that it is less structured than WRU (Western Reserve University) code does not secure any particular advantage to it, because the highly structured WRU code, with its generic coding, provides more facilities for generic search than a faceted scheme [5].
Through an objective analysis of the points advanced in favour of faceted classification scheme, one is constrained to think that the foregone conclusion in some quarters about the supposed redundancy of the traditional enumerative schemes does not coincide with the reality. The indications are that the traditional classification schemes enumerative or analytico-synthetic, are likely to hold the ground for many years to come.

References


