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Education in Documentation*
(Education in library science. 2)

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[The definition of the term 'Documehtation' given by the Indian School of Thought is discussed; and it is shown how it has removed the semantic confusion round the term. The objectives of "Education in Documentation" are enumerated; and the subject is discussed in the context of Indian conditions under the following headings: 1 Magnitude of demand; 2 Levels of education; 3 Entrance qualification; 4 Course-contents; 5 Method of teaching; 6 Research in docu-

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mentation; and 7 Education for teachers of documenta-
tion. The achievements of DRTC in the field of
education in documentation are referred to.]

0 Introduction
01 ROLE OF SEMANTIC CLARITY
Documentation aims at achieving some distinct immediate
utility. It is essentially an applied subject. The achievement
of a standard degree of perfection in programming any facet of
an applied subject is largely dependent on the semantic clarity
of the term denoting the subject concerned.

02 SEMANTIC CONFUSION AROUND THE TERM 'DOCUMENTATION'
Since its first use in 1905 by Paul Otlet (5) much of semantic
confusion has accumulated around the term 'Documentation'.
This confusion is largely due to the semantic controversy among
the different authorities defining the term. A I Mikhailov and
his associates have taken note of this controversy (2). In order
to avoid the semantic confusion, they have recommended the
adoption of the term 'Informatics' suggested by J G Dorfman
and A A Kharkevich. Unfortunately, Mikhailov and his asso-
ciates have not taken note of India's work in this field. In fact,
India's work hardly leaves any scope for semantic confusion.

03 INDIA'S APPROACH
031 Nature of Social Pressure
India's approach has to be understood in the context of
the nature of the social pressure that has led to the extension of
librarian's work to include Documentation. This has been dis-
cussed in detail by the different authorities on Documentation.
There is hardly any disagreement among them. The essence of
their discussion may be summarised as follows:
Nascent ideas embodied in a document — that is, not merely
in a whole volume but even in a part of a book or an article in a
periodical — are essential in the persuit of research. The proli-
feration of documents is now at an exponential rate. Even in a
narrow field, it is now beyond the time-capacity of a specialist to
scan through all the documents to pick out the items relevant to
his work. Research time is too valuable to be frittered away in
such work of scanning and searching. Even if it were possible
to know the relevant documentrs, it may be difficult to procure the
originals of all of them, for economic or other reasons. Further,
some pertinent documents may be in some language not known
to the specialist. This situation creates barriers of different kinds
against the access to pertinent nascent ideas; and these barriers
are the barrier of large number, the barrier of finance, and the
barrier of language. But each specialist must have his documents.

To make it possible, these barriers are to be removed or overcome; and in this process, society cannot afford to waste any research potential. Therefore, the specialist must have a partner who, by his training and expertise, will be able to remove these barriers. That partner is the Librarian. Documents and the subjects embodied in them are the primary concern of this partner. This new function taken over by the partner in the library profession is "Documentation". Wherever necessary, it includes the supply of reprographs and translations of original documents also (14).

032 *Definition of Document*
As stated above, the term 'Document' here should not be understood in its ordinary sense. It is defined as "Record or work on paper or other material, fit for physical handling, transport across space, and preservation through time (6)". This definition, again, is to be understood in the light of the Equation of Document — that is, Document = Systematised Idea (Subject) + Expression + Embodiment (11).

033 *Library Science and Documentation*
In essence, as explained in Sec 031, the term 'Documentation implies only the extension of Reference Service to micro subjects and to the micro documents containing them, and for this purpose extending subject analyticals in the catalogue, to micro documents whether found in books or in periodicals. The extension of library service includes also the supply of reprographs and translations wherever necessary. The trend towards this extension in function has been all along evident in the steady increase in the subject analyticals in catalogues and bibliographies. Since World War II, social pressure has led to emphasis on nascent micro ideas, found in any publication—such as, a book, periodical, monograph, standard, patent, and a report — on the side of the unit of service, and similarly to emphasis on specialist readers on the side of persons served. It is but natural that the library profession, which is always sensitive to social needs, should have made this emphasis in its work. As "Documentation" is thus a new speciality in library service, it is subject to all the Five Laws of Library Science. In conformity to the new social needs, the term 'Book' in the Five Laws of Library Science has been generalised to mean the term 'Document' forming part of a book, article in a periodical, and every other kind of micro document. In respect of Documentation, these Laws are capable of furnishing interpretative explanations of all the empirical facts of experience and of the techniques found necessary in experience. With reference to these Five Laws, it has been found helpful to define "Docu-

mentation" in general terms as follows :
1 Promotion and practice of bringing the nascent micro
subjects into use by specialists (Law 1),
2 Pinpointedly (Law 2),
3 Exhaustively (Law 3), and
4 Expeditiously (Law 4), in spite of the
5 Ever-increasing cascade (Law 5) of specialised nascent sub-
jects communicated through an ever-multiplying number of micro
documents (13).

04 RAISING A MAN OF STRAW
    The attempt to perpetuate the concept that the librarian's
function ends with dealing with whole volumes — their acqui-
sition, classification, descriptive cataloguing, and circulation — but
that the documentalist's function is dissemination of ideas inside
the documents and then to state the library profession is different
from the documentation profession reminds one of the old sayings
about "Raising a Man of Straw to Hang Him". In the early
years, when the need for serving to specialists the micro ideas in
documents gained importance, a historical factor came into play.
A person in charge of a learned library — such as, university
library — did not regard himself as belonging to library profes-
sion. The scholars were self-helpers. All the clerical work
of the library was left to the care of a person called "Librarian".
Naturally, he had only sub-university qualification. Such libra-
rians were found sufficient to serve the generalist readers in public
libraries. There was an interregnum before the library profes-
sion began to attract university man capable of serving specialis ts
During this interregnum, some of the specialists themselves had
to discharge the newly developed library function. This historical
cleavage in the West has run into national and international levels.
It has been keeping the old and the new functions of the library
profession deliberately apart. Thus the bad tradition of diffe-
rentiating the two functions and imagining them to belong to two
different professions has set in. As it is well known, bad tradi-
tions die hard, and recent bad traditions die harder still. As if
to perpetuate this bad tradition, the term 'informatics' has been
invented (See Sec 02) and a book with this title has been published
in 1969 asserting that the library profession and the documentalist
profession are two different professions (3). Fortunately, India
was in its cultural rest phase when this bad tradition began in the
West. When its current renaissance began, it had a clean slate
to write upon. It was able to see clearly without any handicap.
This enabled it to see that Documentation is by its very nature a
function of the librarian. This has been continuously asserted
by S R Ranganathan on behalf of India. It is hoped that the

other countries will soon realise the validity of this assertion. The present paper assumes its validity.

05 OBJECT OF EDUCATION IN DOCUMENTATION
On the basis of the semantic clarity arrived at in the earlier sections, the object of Education in Documentation may be broadly defined as follows:—
Education in Documentation should be devoted to
1 Teaching the knowledge and skills needed in the promotion and practice of serving the specialists with the nascent ideas embodied in micro documents in conformity with the Five Laws of Library Science, and
2 Developing new and improved methods and techniques for the purpose mentioned above.

06 SCOPE OF THE PAPER
This paper makes an attempt to discuss the following facets of the subject "Education in Documentation":
1 Magnitude of demand;
2 Levels of education;
3 Entrance qualification;
4 Course-contents;
5 Method of teaching;
6 Research in documentation; and
7 Education for teachers of documentation.

1 Magnitude of Demand
Education in Documentation is essentially a professional one. In planning professional education the first essential step is to estimate the anticipated demand for it for the nation as a whole. Any training in excess of demand would be a national waste and also lead to unemployment in the profession and the lowering of its salary scale. This is being experienced today in the Engineering profession. Documentation is needed for increasing productivity only in research, industry and Government department. The recognition of this value of documentation is beginning only just now in our country. The recognition is in decreasing sequence in the three sectors mentioned above. In this circumstance, it is difficult to estimate the magnitude of the demand of the present and of the immediate future. Actually, the demand has to be created by demonstration. Apart from research in documentation, this has been one of the objectives of the DRTC (= Documentation Research and Training Centre), Bangalore, established by the Indian Statistical Institute in 1962, with the concurrence of the Government. After some teething trouble, the smooth development of the training and demonstration

at the expected rate is now ensured. The virility of the renais-
sance of the Indian society is expected, to make the true demand
for documentation to grow.

2· Levels of Education

The relation between Library Science and Documentation;
as shown in Sec 03 of this paper, suggests that while a library
scientist is a general practitioner, the documentalist is a specialist
practitioner within the same profession. This fact throws some
light on the determination of the levels of education in documen-
tation. To satisfy the requirements of a full-fledged profession
of specialists, the members of the profession require to be cate-
gorised according to their degree of responsibility. Such an
approach will, naturally, recognise the following categories of
specialist professionals:

1   Junior specialist professionals;

2   Senior specialist professionals; and

3   Leaders of the specialist profession.

Education in documentation should necessarily aim at producing
these three categories of professionals. In that case, it should
recognise the following two distinct levels of education:

1   Level 1 (for the junior specialist professionals); and

2   Level 2 (for the senior specialist professionals and for the
leaders).

There are the following two ways of introducing the courses for
the two levels of education:

1   By incorporating special courses into the existing programme
of education in Library Science (Way 1); and

2   By organising separate programme of education in documen-
tation (Way 2).

The demand is now too low to allow Way 1 to be brought into
force. For the time being Way 2 should also take the responsi-
bility for the training of junior professionals. From the edu-
cational point of view also, this is proper, because we have no
means of deciding the future capabilities of the entrants to the
course of training.

3 Entrance Qualification

By assumption, a documentalist is a specialist librarian
with the duty of serving a specialist reader with nascent micro
ideas in his subject of specialisation. Therefore, the entrance
qualification to a course in documentation should include:

1   Knowledge of library science in general indicated by a
B Lib Sc degree; and

2 Specialisation in some science — pure or applied, and natural or social — indicated by a post-graduate degree or a professional degree.

At this early stage a market for a documentalist has not yet been formed in our country. Therefore, a person with this double qualification may not elect to take this course. So, some temporary compromise should be made; and for this purpose a personal interview is necessary for the selection of the candidates. This may not be necessary, however, if a research institution or an industrial house or a Department of Government deputes a person with either of the two qualifications *plus* aptitude for documentation as found out while he was in its employment.

4 **Course-Content**

41 TRANSITORY MEASURE

It has been already stated in Sec 033 that Documentation is only an advanced specialised version of Library Science. This implies that a documentalist should have as a minimum a good Bachelor's Degree in Library Science. But as a transitory measure, post-graduate students and members of other professions — such as, engineering — without a B Lib Sc degree, may have to be admitted to the documentation course. An intensive accelerated training in the following subjects of the B Lib Sc course should be given to them, during the first two months:

1 Library classification — theory and practice;
2 Library cataloguing — theory and practice;
3 Reference service; and
4 Library management.

42 CORE SUBJECTS

The following are the core subjects in the documentation course proper:

1 Documentation Work.— Preparation of documentation list in anticipation or on demand. For this work great competence should be developed in the students in the

11 Intensive facet analysis of depth subjects;
12 Establishment of class numbers and feature headings of great depth; and
13 Provision of necessary alphabetical index entries for subjects by advanced method of Indexing.

2 Universe of Subjects.— Its structure and development, and modes of formation of subjects, such as Fission, Denudation, Lamination, Loose Assemblage, and Fusion. Study of these will require acquaintance with history of sciences. This subject is needed as the foundation for the study of depth classification.

3 Documentation Service.— Trilogue between the documentalist, the specialist reader, and the catalogue (documentation

ibt). For this work great competence should be developed in
the students in the

31 Psychology of facet analysing the readers' query along
lines similar to those of facet analysing the subjects;

32 Browsing of the appropriate region in the classified
part of the catalogue along with the reader, in order to increase
the precision of the query; and

33 Thereafter leaving the reader to choose his own docu-
ment, with occasional discussion with him until he is in full pos-
session of what he needs.

4 Abstracting work.— Indicative, informative, and abstract
with slant.

5 In-term project.— Preparation of a classified documenta-
tion list for a specific subject covering a specified period. This
will also require the design of the necessary schedule for depth
classification.

6 Special problems in the management of a specialist library.

7 Post-course project in trend report on a specific subject.
This work has to be done while in active service as a documentalist
in the institution which deputed him or employs him. A period
of about 6 months may have to be allowed to complete this project.

Detailed discussions on the core subjects, mentioned above,
have been made by S R Ranganathan, A Neelameghan, and
G Bhattacharyya in different places (4, 7).

43 AUXILIARY SUBJECTS

A course in documentation may also include the following
auxiliary subjects:

1 Elements of Statistical Calculus — Probability, Frequency
Distribution and Curves, Averages — mean, median, mode —,
Standard Deviation, Correlation, and some elements of Opera-
tions Research. In Library Science in general, and Documentation
in particular, we have to deal with large numbers. Hence the
need for acquainting the students with statistical concepts. These
subjects should be developed with a bias to Library Science.
'Librametry' is the term used to denote the application of sta-
tistical calculus to this field of knowledge. Librametry is of
great help, if not indispensable, in doing research in the field;
and Documentation is a new field in which a good deal of research
has to be made. Therefore, this part of the course in Docu-
mentation will be of much use to those few students who will engage
themselves in research.

2 Programming for electronic document finding system.—
Today electronics is becoming all-pervasive. There is much scope
for its application in the library field in general and in docu-

mention in particular. It may be that the use of electronic system for document finding is not likely to become viable in our country for some years. This may be due to the work load in document finding being so small as to create many idle machine hours. It may also be due to the poor finances of our country not allowing priority for either electronic research or for the use of electronics on a scale large enough to include document finding. However, our librarians should not remain ignorant of what is likely to come tomorrow. The documentalist section of the librarians is perhaps the most fitted to do this subject even if it be only in anticipation of application at a later time.

44 FRINGE SUBJECTS

A course in Documentation has to include the following fringe subjects:

1 *Translation Service.*— Translation is work for a specialist of its own. Therefore, it is not the actual work of translation that should be included in the course for documentalist. It is sufficient if the course trains the documentalist to manage the entrusting of the work of translation to competent translators and to serve the specialists with the translation in an expeditious and efficient way.

2 *Reprograph Service.*— The production of reprographs is work for technicians in that art. Therefore, it is not the work of producing reprograph that should be included in the course for documentalist. It is sufficient if the course trains the documentalist in managing the reprograph section, if any, of the library, or otherwise, in getting the reprograph work done on contract.

3 When electronic document finding system comes into use in our country, programming for it may also have to be transferred from the group of auxiliary subjects to that of fringe subjects. The documentalist will have only to manage and supervise the work of the programmer (10).

5 Method of Teaching

The objective of teaching documentation "should be to energise each student to reach his own fulness, at his own speed, along his own lines, in the context of the team life he leads in the training institution (9) ".

To attain this objective, the methods of teaching adopted should provide enough scope, opportunity, and atmosphere for self-study, self-expression, and self-development.

Documentation cannot be learnt merely by listening to lectures or by reading books on it. To attain the objective of education in documentation, the students and the teachers alike should adopt the seven-fold method of

1 Apprenticeship ;   5 Essay work :
2 Occasional lecture ;   6 Tutorial work ; and
3 Discussion ;   7 Project work (8 12).
4 Practical work ;

These are now recognised to be helpful methods of education
at all its levels.   These are particularly important and appropriate
in a professional course — such as, Documentation — as the
students are mature graduates.   For this reason, it is also necessary
to include Weekly Colloquia among the methods of training
documentalist.

6 Education for Teachers of Documentation

For a long time training in the methods of education was
confined to the teachers in schools. It was believed that the
knowledge of the subject was by itself sufficient to teach in
colleges and particularly in professional colleges. We have now
an enormous increase in the number of colleges and professional
colleges.   This has two implications:

1 The average self-educability of the students is now much
less than before; and

2 The innate teaching capacity of the teachers is also now
much less than before.

This is the result of the teachers as well as the taught having to
be drawn from the lower intellectual strata than before. There-
fore, a formal training in teaching methods has become a necessity
in every subject. Library Science including Documentation is
no exception to this. Overlooking this fact is resulting in a huge
educational wastage. It is wellknown that the recognition of
wastage in education is a deferred one and not an immediate one.
In the library profession, we are already experiencing the poor
quality of the graduates in library science being produced after a
large increase in the number of library schools and in the number
of students admitted by most of them. Poor quality in documen-
talists will cause more of national loss than that of ordinary libra-
rians. For, it will lower productivity in research and in industry.

61 TEMPORARY REMEDY

A temporary remedy for the absence of provision for training
of teachers in Library Science and Documentation may be for
the younger teachers to get the necessary training by associating
themselves with capable experienced teachers. The opportunity
for this may not be easily available to all the aspirants. They.
can at least train themselves by voluntarily studying books on
educational methods and educational psychology. Another
method is for the teachers in a Library School to discuss among
themselves their teaching problems once or twice a week. A

method followed in DRTC in this matter is worth mentioning. When one teacher would be engaged in a class, the other teachers would attend it. Later on they would sit together for what is termed 'post-mortem examination'. The good points and the bad points in the method of teaching would be discussed freely and frankly without any reserve.

62 PERMANENT REMEDY
The number of Library Schools in the country and the deterioration in the quality of their products would call for a permanent remedy. That will be a national provision for training a few teachers of Library Science including Documentation each year. This can be done in one of two ways:
1 One of the institutions in India conducting advanced courses in library science/documentation may open a course on "Teaching Library Science"; or
2 One of the Teachers' Colleges in India may offer courses on "Teaching Library Science".
Initially, a few working teachers in library science may be admitted to such a course on the basis of their respective academic and professional achievements. At a later stage, a limited number of practising librarians, desirous of taking up teaching of library science as a career, may also be admitted.
The need for opening a course on teaching library science was thought out in 1958 (15). But nothing substantial has taken shape until now.

7 DRTC (Bangalore)
The DRTC has been trying to implement most of the ideas mentioned above (1). It is continuously improving its methods of teaching. Being a residential institution, the teachers and the taught live intimately. There is a good deal of team work. During the last eight years it has produced over 300 research papers, done by the teachers as well as the students — present and old. Its papers generally appear in the following two media:
1 *Proceedings of the annual seminar, DRTC*, (1963–   )
2 *Library science with a slant to documentation* (1964–   )
3 *Papers and proceedings of the mid-year seminar, DRTC* (1970–   ).
An account of the proceedings of the DRTC weekly colloquia appears in the *Herald of library science* (1962–   ).
Three persons teaching Library Science in different library schools