

PAPER 11

INFORMATION AND DOCUMENTATION RESOURCES

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1. Introduction

Information and documentation are frequently talked of in optimistic terms when new international organisations are established and when cooperation between institutions is discussed. National and international organisations of distance teaching institutions invariably include a reference to information exchange in their list of objectives. In practice, the work which has been done often does not match the good intentions which have been expressed. Some initiatives have achieved tangible outcomes in the form of a documentation centre, a database, a directory, or a journal, but the development of information and documentation services in many parts of the world has been hampered by several crucial factors, including lack of adequate, permanent funding, lack of appropriately trained, experienced staff, and absence of a clear conception of where work should actually begin and what its objective should be.

This report sets out to identify the forms in which distance education documentation and information appears; the use which is made of it and by whom; resources which exist throughout the world and, more specifically, in countries of the Commonwealth; and the problems faced by documentalists working in the field both on their own and in attempting to collaborate with colleagues in other institutions and other countries. References will be made throughout to the experience of the International Centre for Distance Learning (ICDL), which is based on the campus of the Open University.

1.1. The published, semi-published and unpublished forms of the literature of distance education

The principal difference between the literature of distance education and the literature of education generally is that a large proportion of the documents relating to distance education are unpublished or semi-published. This 'grey' literature emanates primarily from international agencies, national government departments, individual university and college departments, and other distance teaching institutions and projects. It includes position papers, research reports and surveys. Many documents are produced for internal institutional use, but frequently their status is not confidential; they are available for public distribution or sale. The 'grey' literature creates a major problem for anyone attempting to identify, collect and record documents relating to distance education since it is rarely included in the existing bibliographical services and is therefore very difficult to trace. Yet it frequently provides invaluable data which has not been specially prepared for external publication and may present a truer picture of the workings of the institution than an 'official' publication in addition to setting out more detailed information than is available elsewhere. A

paper prepared for planning purposes may be unavailable outside the producing institution, but the status of research reports is often such that they are freely available for distribution.

The small proportion of distance education literature which appears in the form of commercially published books is dominated by UK publishers, in particular Croom Helm and Kogan Page, who have identified a market and cater extensively for it. Several series of publications are produced by distance teaching institutions, notably the International Extension College's Broadsheets on Distance Learning, the Open University Distance Education Research Group's DERG Papers and the Fernuniversität Zentrales Institut für Fernstudienforschung's ZIFF Papieren. Deakin University, Australia, and the Open Universiteit, Netherlands, have recently launched occasional papers series. Publications in each of the series mentioned above are sold, with the exception of ZIFF Papieren, which are available without charge.

The number of journals devoted specifically to distance education, excluding house journals, is relatively small despite the recent extensive growth of this type of education. Most of these journals are published by regional organisations of distance teaching institutions; details appear in section 2 of this report. But although the number of distance education journals is small, more and more articles relating to distance education are appearing either in journals with a more general focus on education, or with the teaching of particular subjects, or with the use of media. Examples include Higher education and the British journal of educational technology; the Journal of biological education and the International journal of mathematical education in science and technology; and Media in education and development and the Journal of educational television. Another increasingly common trend is the publication of special distance education issues of journals. Recent examples include Programmed learning and educational technology (vol.23, no.1, February 1986, 'Helping adults learn at a distance'), Vocational training (no.15, September 1984/II, 'Distance learning') published by CEDEFOP, the European Centre for the Development of Vocational Training, and a forthcoming issue of the Unesco journal Prospects. The proliferation of open and distance learning is being paralleled by an expansion in the quantity of literature being produced; the very nature of distance education, and in particular its wide applicability, ensure that this will become progressively more scattered and more difficult to trace.

The general expansion of distance education is also reflected in the increasingly large number of conferences, seminars and workshops which are being arranged, concerned with distance education in general, with specific aspects of distance education, or with provision general or specific in particular regions or countries of the world. The largest of the conferences, the World Conference of the International Council for Distance Education, attracts hundreds of participants and hundreds of papers from all over the world. Many much smaller events are held which aim to

address particular local problems. Whatever the focus, function or size of the gathering, it is almost certain to stimulate the production of papers and perhaps of a collected volume of some kind. This type of literature is particularly important since conference papers frequently provide both information and perspectives which are not readily obtainable elsewhere. This is especially true of institutions which teach in languages which are only used in the countries in which they operate. Conference, seminar and workshop papers, which must usually be produced in English or in another widely known language, can be invaluable sources of otherwise scarce data.

Two additional categories of documentation are also likely to be represented to a greater or lesser degree in a collection specialising in distance education. These are official publications such as prospectuses, courses handbooks, annual reports, and samples of course materials. The collection of course materials on a large scale presents a series of problems, the most obvious of which is that of providing adequate storage space, quite beyond the resources of any existing documentation centre or library in a distance teaching institution. Similarly, a comprehensive, regularly updated collection of prospectuses is very difficult to maintain. Not many distance teaching institutions and projects have mailing lists; effective updating is a yearlong process.

Databases and directories which do not relate to the literature tend to focus on general information about distance teaching institutions in particular countries or regions and, increasingly, on courses which they offer. Descriptive information is of use both to students and potential students seeking courses of study and to staff concerned with expanding their own institutions' offerings. Since institutions are required to match their programmes to students' needs, and since economic constraints are universal, interest in other institutions' course provision is on the increase. The intention may be to purchase, to adapt, to seek to collaborate, or perhaps simply to provide a catalyst to course writers.

1.2. The status of information and documentation work

Recent years have seen tangible evidence of the increasing recognition of the importance of information and documentation work in distance education. Several international organisations have provided significant financial support, and others have expressed their interest in terms of constitutional resolutions. ICDL was set up in 1983 through funding from the United Nations University and with the cooperation of the Open University and of the International Council for Distance Education (ICDE), which has also contributed financially to ICDL in 1986. Following a resolution passed at its 1985 Thirteenth World Conference, the Council has granted ICDL the sum of C\$3,000 for the period 1986-1988. The resolution reads: "That the Executive Committee promote the continued development of the International Centre for Distance Learning so as to make institutional/bibliographical data readily available throughout the world (as hard copy or in disk form) and support the Centre so as to ensure its continuing sponsorship by

the United Nations University." The sum is small, but its significance is considerable since it represents a commitment to the Centre of a substantial proportion of the Council's total funds, and is the first and only financial contribution made by the Council towards the continuance of any organisation. During 1986, the President of the Council has proposed that, in the event of the Centre's external funding coming to an end, the Council should seek to continue its functions through the medium of a permanent Council secretariat. ICDE is one of several international organisations of distance teaching institutions which have incorporated into their constitutions resolutions relating to information and documentation; other examples are included in section 2. ICDE's constitution includes one objective which specifically refers to information, "(d) to exchange publications, lesson material and other information respecting the growth and organisation of distance education." Two others can only be achieved where an information and documentation base exists. These are "(a) to promote knowledge and improvement of distance education throughout the world" and "(b) to conduct and promote research and scholarship on distance education."

In addition to its funding of ICDL, The United Nations University has expressed an interest in the concept of regional resource centres. Lord Perry has undertaken some preliminary investigations on the University's behalf in India, South America and South East Asia and has elicited several favourable responses. The role of the regional resource centre would be to collect sets of course materials produced in the region and make them available to visitors from new institutions and from institutions proposing to extend their course programmes.

The second notable development is the creation of new documentation centres and documentation collections by a number of distance teaching institutions in different parts of the world; details are included in section 2.

1.3. Bibliographical coverage of distance education

Many countries of the world operate national bibliographical services, which regularly publish references to documents published within their own country. All are produced in printed form, and some are also computerised and accessible on-line. Some include specialised databases on education; examples are the British Education Index and the Australian Education Index. The national services are useful sources for references to commercially published documents, and the specialised databases contain many references to journal literature. But distance education literature by its nature does not lend itself to good coverage through this type of service. The 'grey' literature which predominates is not usually included in national bibliographical services. In the UK, the British Library is attempting to fill this gap through its SIGLE file, a European 'grey' literature file available, like the British Education Index, through the BLAISE system. But to date, SIGLE contains a mere handful of references to documents relating to distance education. 'Grey' literature is by its nature elusive, and no database can include references to documents of whose existence it

is unaware. This is one of the problems facing the American-based ERIC (Educational Resources Information Center) database, which is the world's major educational bibliographical service, specialising in 'grey' literature, particularly research reports, and journal literature. Only a small proportion of the 'grey' literature of distance education is covered in ERIC. There are two principal reasons for this partial coverage. The first is that unless documents are sent direct to ERIC clearinghouses, it is very difficult for ERIC staff to discover what is being produced. ICDL assists the discovery process by regularly sending its New accessions list, which contains details of new documents received and how to obtain them, to clearinghouses, each one of which is based in an American college or university and has the responsibility for collecting documents relating to a particular type or level of education. There is evidence to show that at least one clearinghouse follows up references in the lists.

But not every institution is prepared to supply its publications to ERIC, since an institution's own sales may be adversely affected through the functioning of the ERIC Document Reproduction Service. ERIC not only collects documents, it makes available report literature in hard copy and/or on microfiche on request. For each document included in the database, a permission release must be completed by the copyright holder, specifying the level of release, i.e., whether it may be reproduced in hard copy and on microfiche, whether reproduction is to be limited to microfiche, or whether no form of reproduction is to be permitted. It is ERIC policy to be highly selective in the cases of documents which it is not able to reproduce, so that a record of such a document may never be included in the database. ERIC states that the inclusion of a document record in its database will stimulate institutional sales, but in practice this does not appear to be the case, and ERIC's conditions for accepting a document in some instances discourages institutions from submitting their publications.

Personal communication with the director of one the clearinghouses has revealed the second reason for ERIC's partial coverage of distance education, which is quite simply that some clearinghouse directors are interested in distance education and others are not. The degree of interest is related to the individual's perception of distance education. A different interpretation of the term tends to be current in the United States from that which is familiar in almost every other country; that which is regarded as 'distance education' in the United States is not necessarily seen as such in other countries, and vice versa. A closely related factor is the relatively low esteem in which distance education is perceived in the United States is held in that country. It seems most unlikely that ERIC's coverage of distance education will ever reach a satisfactory level in terms of the proportion of the literature which is included.

Criticism can justly be levelled at the treatment of the distance education literature which does find its way into the ERIC database. The ERIC thesaurus includes almost no distance education-specific descriptors, and those which are available are applied indiscriminately. Examples exist of UK Open University research publications which are indexed under the descriptor

'distance education' but not under 'open universities', and of others which are indexed under 'open universities' but not under 'distance education'. In themselves these are relatively trivial instances of inconsistency, but they are symptomatic of a much wider lack of standardisation which induces lack of confidence in the system as a whole. The experienced user feels it necessary to search under every possible related descriptor to try to ensure that the database has been properly searched.

Searches of several international databases were undertaken in early January 1987. The ERIC database, which includes the Current index to journals in education in addition to report literature, has 570 entries under the descriptor 'Distance education' and 394 under 'Open universities'. These represent a total of 868 documents and articles. 104 reports and 49 articles were added to the database during 1986. The French-based Questel Francis-S database contained 159 entries under the term 'Enseignement à distance', many of which date from the early 1980s. The BLAISE SIGLE file mentioned above contained only 14 entries under 'Distance education', nine of which were for documents sent to SIGLE by ICDL. Finally, the European Space Agency EUDISED database of European-based research projects contained 77 entries under 'Distance study' and 42 under 'Correspondence education'.

1.4. Progress towards a bibliographical service for distance education

The inadequacies of ERIC and the absence of any other international database in the area of distance education are universal causes of concern amongst librarians and documentation specialists responsible for building collections of distance education literature. This concern was clearly expressed at a meeting convened by Angela Castro of Deakin University Distance Education Unit, Australia, and Keith Harry of ICDL during the Thirteenth World Conference of the International Council for Distance Education at Melbourne in August 1985.

There was general agreement concerning the need for an international database on distance education literature and that means for creating it should be investigated. An informal working group was formed, comprising representatives of Deakin University, ICDL, Athabasca University, Canada, the Open Learning Institute, Canada, the National Extension College, UK, Armidale College of Advanced Education, Australia, the Deutsches Institut für Fernstudien an der Universität Tübingen, West Germany, the Universidad Nacional Abierta, Venezuela, and the Universidad Nacional de Educación a Distancia, Spain. Keith Harry was given the responsibility of circulating information to group members on two specific issues, the identification of a common format for the cataloguing of distance education documentation, and the identification of a thesaurus suitable for use in subject indexing. The format specification was also discussed at a subsequent meeting held at the Open Learning Institute, Vancouver, Canada, in May 1986, attended by Keith Harry and the Librarians of Athabasca University and the Open Learning Institute, and a generally acceptable format has been adopted. It was generally agreed that the thesaurus compiled from the ERIC Thesaurus for the

use of indexers working on the Australian Education Index was acceptable as a general framework into which distance education-specific descriptors might be introduced. The Librarian of the Open Learning Institute agreed to attempt to compile a list of distance education descriptors, but this task has proved more difficult than was originally envisaged. A solution to this problem will be evolved in 1987. During the latter half of 1986, the Open University Academic Computing Service has designed and developed a system for the computerisation of the catalogue of ICDL. In January 1987, the system will be available for piloting. It is an extremely sophisticated, powerful and flexible system which will not only cope with all the requirements of the Centre but will also permit the introduction of entries from other databases.

1.5. Who are the information users, what are their needs, and how are they met?

No mention has been made so far in the report of the users of distance education literature and their needs except in the broadest terms. Every collection has its own particular functions within the institution which it serves, but ICDL is in the unusual position of being totally externally funded, so that it has an extensive external clientele in addition to users from the home institution, the Open University. The following paragraphs categorise the Centre's users, describe their demands, and indicate those areas where resources require strengthening.

The Centre is located on the campus of the Open University although it has been funded by the United Nations University since 1983. Many of the visitors to the Centre are University staff. Their information needs are many and varied, including:

- seeking information on institutions and countries to which visits are planned;
- requiring briefing on institutions and countries from which visitors are expected;
- seeking information to assist in writing Open University course materials, reports, books, papers and theses;
- seeking information for University committees;
- requiring updating on developments overseas in particular aspects of distance education or in the use of particular technologies;
- requiring updating on the progress of distance education in particular regions, countries or institutions.

Many University staff also contact the Centre by telephone, via the internal mail, or through the University's electronic mail system. Their enquiries may fall into any of the categories enumerated above, or may consist simply of requests for names of possible contacts in other institutions or for addresses. The

Centre also fulfils the function of a reference library on education overseas for the University generally since it has a stronger overseas education reference collection than the main Open University Library.

The Centre also receives between 50 and 60 visitors each year from outside the Open University, some of whom make one or more return visits. Their interests are often similar to those of Open University staff, but many also require detailed information concerning the literature available on certain aspects of distance education and on the teaching of specific subjects in other distance teaching institutions. Neither of these categories of information is available on a comparable scale elsewhere. Each year, several postgraduate students are amongst the visitors to the Centre; their needs are usually intensive within a specific area of distance education or within a particular geographical area.

Many requests for information, far more than half of those dealt with in the course of a year, are received by post, telephone, telex or electronic mail. The people from whom requests are received can be roughly grouped as follows:

- professional colleagues requiring specific bibliographical information;

- potential students wanting information on courses in particular subject areas, sometimes in their own country, sometimes from institutions teaching internationally;

- postgraduate students, often interested in a specific aspect or process of distance education in terms of Open University practice, the practice of other distance teaching institutions, and the existing literature on theory and practice;

- researchers, often academic staff of other distance teaching institutions, writing papers or books, requiring information on the existing literature in their area of study;

- staff of conventional, on-campus institutions charged with developing distance taught programmes, requesting information on distance education at a general level, on particular areas such as course development and the use of media, the focus of the request dependent upon the stage reached in the programme. Information is also commonly requested on which institutions already teach in particular subject areas;

- staff of distance teaching institutions responsible for introducing new courses or new media into an existing distance taught programme.

Certain generalisations can be made concerning the Centre's responses to enquiries:

- some enquiries from inside the University, from visitors, or on the telephone from internal or external enquirers can be answered in a word or a sentence or at greater length without

recourse to reference books or to any other source. Each of the two full-time members of the Centre's staff has worked in the international area of the University since 1978, has met visitors from all of the major distance teaching institutions, is aware of current developments in the Open University and overseas, and has extensive knowledge of the literature of distance education

- the Centre acts as a clearinghouse for enquiries received by the University from overseas which are redirected by the Centre within the University and sometimes outside

- factual enquiries concerning addresses of organisations and institutions are answered from the Centre's extensive reference collection

- documents can be borrowed by University staff and in some instances by other visitors to the Centre

- documents can be loaned to institutions overseas with the cooperation of the Open University Library via the inter-library loan system. Requests for the loan of specific documents are sometimes received through the University Library

- copies of some documents, usually Open University publications, sometimes spare copies of publications from elsewhere, are distributed from the Centre

Each of the categories of response listed above concerns enquiries for a specific piece of information or a copy of a specific document. These are generally straightforward, and it is possible to utilise the resources of the Open University Library in addition to the Centre's own stock. Other categories of enquiry entail more complex responses:

- Literature searches are undertaken using the Centre catalogue and existing bibliographies, and through scanning reference lists of relevant books, journal articles, reports, and other available documentation. Annotated lists of references are drawn up and supplied together with information on how to obtain copies of documents.

- Responses to enquiries concerning factual information on distance teaching institutions are supplied wherever possible in the form of printouts from the Centre's computerised database. In cases where the database cannot provide sufficiently specific information, supplementary searches are made through the collection of directories and prospectuses.

Responses to enquiries in these two categories are very carefully considered, and replies are drafted bearing in mind the specific need of each enquirer as far as this can be judged. Potentially significant factors include the status of the enquirer, for example whether he or she is a student, or an academic or administrative staff member from a conventional institution or from a distance teaching institution, an institutional or a departmental head, and the country and area in which his or her institution is located. Such factors are important in gauging the quantity and the level of information which can usefully be

supplied, the likelihood of local access to recommended literature, and the difficulty of acquiring documents from other countries.

The extent and nature of use of ICDL have both changed markedly as its clientele has changed. The function of the original unit was to serve the staff members of the Open University Centre for International Cooperation and Services (1978-80). During the period of funding by the Steering Committee for the International Institute for Distance Learning (1980-81), the principal users were the 15 member institutions. Between 1981 and 1983, when the Open University funded ICDL, a great deal more effort was devoted to making the Centre better known within the University. Since 1983, there has been a considerable increase in the number of enquiries received both from inside and outside. The major part of ICDL's work is now done for individuals and institutions outside the UK. The number of enquiries dealt with during 1986 was between 1,250 and 1,500. A precise figure is very difficult to arrive at, for several reasons, and can be highly misleading without some qualification. Several attempts have been made in ICDL during the last eight years to count enquiries, but none has been regarded as providing an accurate reflection of the work undertaken. For example, a single enquiry may be answered in a few seconds without reference to any document; another may take several hours work using a selection of documents. An enquiry cannot be counted as a standard unit. It is sometimes difficult to determine what should count as an enquiry and what should not. Questions are often asked in casual conversation around the University which very closely resemble enquiries received from outside the University. Can they be regarded as enquiries? Similarly, visitors to ICDL frequently stay for more than one day and generally ask a great many questions. Are any of them true enquiries? They are not regarded as such in the figures arrived at for ICDL usage in 1986.

ICDL has received a great deal of favourable feedback from responses to enquiries from outside the Open University. One of the most encouraging signs is that external enquirers tend to use the information service a second and a third time, and that new users approach the Centre on the recommendation of existing users. Much has inevitably been learned from the users who actually come to the Centre. Weaknesses in collections and systems are rapidly exposed by users with widely differing interests and perspectives. As much as possible has been done to remedy shortcomings, but several cannot be cured immediately. The two major areas for improvement which will be tackled during 1987 are the production of a computerised catalogue, which will enable very quick and specific searches by subject, and the expansion of the existing computerised database to include more information and its transfer to a newly designed system which will allow much more flexible searching. The Centre's information resources will be revolutionised by these two developments.

2. Worldwide survey of documentation and information resources

The aim of this section is to paint a picture of the extent of resources worldwide so as to provide a context for section 3, which is focused on the countries of the Commonwealth. It will become clear that a very substantial proportion of the world's resources are in fact to be found in the Commonwealth. The arrangement is topic by topic; this section, in addition to providing an overall picture, acts as a key to the Commonwealth section, which is arranged geographically. It should be noted that only the names of documentation collections, databases, directories and other resources in Commonwealth countries are given in this section; additional information is presented in section 3.

- Documentation collections. The libraries of many distance teaching institutions collect literature on distance education to a greater or lesser degree. Only those collections which are known to be separately maintained, administered or recorded are listed below.

- **Africa**. None known.

- **Asia**

- India. Indira Gandhi National Open University (planned).

- Thailand. Sukhothai Thammathirat Open University. Substantial accommodation is set aside for a documentation centre, but as yet no plans are known. In 1983, the University was designated by Unesco the Lead Institution for the Consortium on Innovation in Higher Education for Asia and the Pacific. It seems likely that future activity in documentation and information will be linked with the Consortium.

- **Australasia**

- Australia. Deakin University. Distance Education Unit collection.

- **Europe (Eastern)**. It seems certain that documentation collections exist as part of university library collections, but no separately maintained collections are known.

- **Europe (Western)**

- Denmark. Aarhus Technical College (separate collection planned).

- Netherlands. Open Universiteit (separate collection planned).

- Spain. Universidad Nacional de Educación a Distancia (separate collection planned)

- UK. ICDL, International Extension College, MARIS, Open University.

- West Germany. Deutsches Institut für Fernstudien an der Universität Tübingen (DIFF). The DIFF Library collects widely in distance education and is particularly strong in German-language materials and in pre-current and historical documentation.

- Middle East

- Jordan. al-Quds Open University Project (separate collection planned).

- North America

- Canada. Athabasca University, Open Learning Institute.

- South and Central America

- Argentina. Asociación Argentina de Educación a Distancia. A collection has been begun, but no further details are yet known.

- Colombia. Ministerio de Educación. The existence of a documentation centre has been mentioned in Ministry publications for several years, but efforts to obtain further information have so far been unsuccessful.

- Venezuela. Universidad Nacional Abierta. A documentation centre exists, and publications have been received from it, but details of size and nature of operation, although requested, have not been obtained.

- Databases

- **Africa.** None known.

- **Asia.** None known.

- Australasia

- Australia. Deakin University Distance Education Unit DEDATA database.

- **Europe (Eastern).** None known.

- Europe (Western)

- UK. ECCTIS, ICDL, MARIS-NET.

- West Germany. Fernuniversität. A computerised system operates which contains references to 4,200 internal documents. A separate system contains data collected in the first stages of

an international project for which information is still being collected.

- **Middle East.** None known.

- **North America**

- Canada. Western Canada Committee on University Distance Education database.

- **South and Central America.** None known.

- **Directories**

- **International.** International bibliography of distance education magazines, journals and other periodicals- IBIDEM. A bibliography and location list prepared by R.Manfred Delling of DIFF, West Germany, who is currently collecting data for an updated edition.

The Commonwealth Secretariat has published two directories of distance teaching institutions.

- **Africa.** None known.

- **Asia.** Two directories have been produced by the Unesco Regional Office for Education in Asia and the Pacific. They are Directory of institutions of higher education in Asia and the Pacific engaged in distance education (1982) and Resource materials used in distance teaching by higher education institutions (1984).

- India. Association of Indian Universities 1984 Handbook of correspondence courses.

- **Australasia**

- Australia. Directory of tertiary external courses in Australia 1987.

- **Europe (Eastern)**

East Germany. The central authority for distance teaching in East Germany, the Zentralstelle für das Hochschulfernstudium des Ministeriums für Hoch- und Fachschulwesen, located in Dresden, publishes an annual directory entitled Hinweise für Studienbewerber zum Hochschulfernstudium. The directory gives details of the distance taught courses offered in 20 universities.

- **Europe (Western)**

- Italy. The Associazione Italiana Scuole per Corrispondenza produces an occasional membership list, the latest of which contains the names and addresses of 120 institutions.

- Netherlands. The Ministerie van Onderwijs en Wetenschappen publishes a directory of distance teaching institutions, publicly and privately funded, entitled Studie-mogelijkheden in het erkende schriftelijk onderwijs. Details are included of courses offered by 40 institutions.

- Spain. The Asociación Nacional de Centros de Enseñanza a Distancia, Madrid, publishes an annual list of members, the most recent of which includes more than 70 privately funded institutions.

- UK. Open Tech Directory, Open learning opportunities in Scotland.

- West Germany. An annual directory entitled Ratgeber für Fernunterricht is published by the Staatliche Zentralstelle für Fernunterricht der Länder der Bundesrepublik Deutschland, based in Köln. Many of the 120 institutions listed are privately funded colleges.

- **Middle East.** None known.

- **North America**

- Canada. Canadian university distance education directory, University education at a distance: opportunities in Ontario, Sourcebook on telecommunications and distance learning in Canada.

- United States. National Home Study Council directory. A folded sheet listing all the NHSC accredited correspondence schools, with a brief subject guide.

Peterson's The independent study catalog: the NUCEA guide to independent study through correspondence instruction 1986-1988 lists more than 12,000 high school, college, graduate, and noncredit courses offered by over 70 colleges and universities, and includes a detailed index arranged by subject.

A useful, although inevitably increasingly out-of-date, guide to American programmes utilising audio-visual media is R.J.LEWIS (1983) Meeting learners' needs through telecommunications: a directory and guide to programs, Washington, D.C., Center for Learning and Telecommunications, which presents detailed accounts of 70 programmes, some of which employ distance education and open learning techniques.

- **South and Central America.** None known.

- **Other resources**

- **International**

- Research studies. Two separate projects based in the Open University have collected data which is of direct relevance to this report. The first, the Distance Education Information Project, was undertaken in the Faculty of Educational Studies. The broad objective was to ascertain the information needs of

practitioners in the distance education field. The methodology adopted was to write to ask heads of institutions to nominate a number of contacts in different areas of the institution. A set of vignettes was then compiled, based on functions and activities undertaken in the Open University. Vignettes were sent to nominated staff members in other institutions. A proposed second phase involved the examination of existing bibliographical services to determine the adequacy of their coverage of distance education. The final report (V.A.Winn and D.A.Bramer (1981) The Distance Education Information Project: concluding report to Director of Project, Milton Keynes, Open University Faculty of Educational Studies) does not contain the results of this examination. Its conclusions do not go far beyond reporting the diverse needs of practitioners working in different areas of distance education.

The second Open University-based project, undertaken by Professor Michael Neil for the Distance Education Research Group, was funded by the British Council following the University's Conference on the Education of Adults at a Distance in 1979, one of the principal themes of which was international collaboration. The two areas investigated in the project were the regular exchange of institutional information, its desirability and the form it might take, and possible areas for international collaboration. A detailed questionnaire was drawn up and distributed to distance teaching institutions worldwide. A first report was produced (M.W.Neil (1982) A research study on international collaboration between institutions of distance learning: draft interim report on phase I, Milton Keynes, Open University Distance Education Research Group), but the project was to some degree overtaken by events. In 1983, the United Nations University funded the establishment of ICDL's computerised database of basic information on distance teaching institutions. The database fulfils the information functions investigated by Neil's study.

The Fernuniversität Zentrales Institut für Fernstudienforschung, under the direction of Professor Börje Holmberg, is conducting a comparative study of distance teaching institutions worldwide. A detailed questionnaire was distributed in 1984 and a number of reports were subsequently produced, including one in English (B.Holmberg (1985) On the status of distance education in the world in the 1980s: a preliminary report on the Fernuniversität comparative study, Hagen, Fernuniversität ZIFF). A revised version of the questionnaire was distributed in July 1986. It is intended that the data obtained should eventually be computerised.

A survey of distance education worldwide based on a study of the data held in the ICDL computerised database in May 1984 was published by the Centre's Honorary Director, Lord Perry, later in

the year, under the title The state of distance-learning worldwide: the first report on the index of institutions involved in distance-learning.

- **Serial publications.** Journals, newsletters and accessions lists are invaluable information sources. Those which have truly worldwide coverage of distance education are About distance education, Distance education, the International Council for Distance Education bulletin, the International Council for Distance Education Women's International Network newsletter, the ICDL new accessions list, the Journal of distance education, and Open learning. The journals listed above specialise in distance education. Many others which are not listed contain occasional articles relating to distance education

- **Africa.** Distance education news and views: bulletin of the African Association for Distance Education.

- **Asia**

- Pakistan. Pakistan journal of distance education. Published by the Allama Iqbal Open University. Both issues produced so far appeared in 1984. The first was almost exclusively devoted to articles relating to AOIU, but the second contained several pieces from other countries.

- Thailand. Never too far: a newsletter for distance education. Described as 'an activity within the framework of the Regional Co-operative Programme in Higher Education for Development in Asia and the Pacific'. Published since 1983 by the Sukhothai Thammathirat Open University. Serves as an information link between Consortium members, but is of considerable general interest.

- **Australasia.** Distance education, ASPESA news, ASPESA Special Interest Group newsletters.

- Australia. Open campus.

- New Zealand. Distance Education Association of New Zealand (DEANZ) newsletter.

- **Europe (Eastern).** None known.

- **Europe (Western).** Epistolodidaktika is the journal of the Association of European Correspondence Schools, which has several information-related objectives, including 'to promote knowledge of correspondence education, its potentialities and achievements', 'to promote research into the methods of correspondence education', and 'to promote co-operation in exchange of ideas and research results between members'.

- UK. About distance education, ICDL new accessions list, International Council for Distance Education bulletin, OLS news, Open learning.

- **Middle East.** None known.
- **North America**
 - Canada. Journal of distance education.

- **South and Central America.** Asociación Iberoamericana de Educación Superior a Distancia boletín. This organisation includes more than 40 institutions in Latin America and Spain. The Boletín, published since 1983, contains theoretical and descriptive articles, all in Spanish.

3. Resources in Commonwealth countries

The Commonwealth Secretariat has published two directories of Commonwealth distance teaching institutions: INTERNATIONAL EXTENSION COLLEGE (1974) A survey of correspondence institutions in the Commonwealth, which gives details of 60 institutions in 17 countries, and J.JENKINS (1980) Correspondence institutions in the Commonwealth, listing over 150 institutions in 23 countries.

- Africa

- Document collections. None known.
- Databases. None known.
- Directories. None known.
- Other resources

- Distance education news and views: newsletter of the African Association for Distance Education. The only issue to appear so far was published in 1985. All of the Association's objectives relate to promotion of distance education and of research and scholarship, and to the dissemination of information, but the newsletter is the only known activity to date.

- Distance educator. Two issues of this journal have so far been published by International Council for Distance Education members in Kenya.

- Asia

- Document collections

- India. The Indira Gandhi National Open University is not only collecting literature on distance education but will have responsibility for providing documentation services to state open universities as and when they appear. It is not yet clear whether a separate documentation centre will be created or whether

distance education literature will be collected as part of the main University Library collection.

- Databases. None known.

- Directories. The Unesco Regional Office for Education in Asia and the Pacific, based in Bangkok, Thailand, has published two directories. The Directory of institutions of higher education in Asia and the Pacific engaged in distance education, published in 1982, based on replies to a survey, contains basic information on 50 institutions in nine countries. The Commonwealth countries included are Australia, India and New Zealand. The 1984 Resource materials used in distance teaching by higher education institutions contains data on the subjects taught, media used, and educational level of courses in more than 30 institutions in six countries, including Australia, India, New Zealand and Sri Lanka.

- India. The Association of Indian Universities 1984 Handbook of correspondence courses is an institution-by-institution list of the courses offered by university correspondence institutes and directorates and by Andhra Pradesh Open University.

- Other resources. None known.

- Australasia

- Document collections. Many university and college libraries almost certainly collect some distance education literature, but they do not maintain separate collections.

- Australia. Deakin University. The Distance Education Unit has a collection comprising several hundred documents maintained separately from the University Library.

- Databases

- Australia. Deakin University Distance Education Unit has developed a database of references (DEDATA) to the literature of distance education. It is hoped that this database will be developed in close cooperation with ICDL

Technical Extension Service, Perth. The August 1986 issue of ASPESA news reports that a grant of A\$15,000 has been allocated to the Technical Extension Service for a project entitled 'Interstate cooperation- data bank for the development and delivery of TAFE external studies courses'.

- Directories

____ Australia. Directory of tertiary external courses in Australia 1987. Published by the University of Queensland School of External Studies and Continuing Education. Documents all Australian tertiary external credit courses.

- Other resources. The Australian and South Pacific External Studies Association was established in 1973. It includes amongst its objectives 'To disseminate information about research and practice in external studies'. To this end it began publication of the journal Distance education in 1980. This is an international, refereed journal. Invaluable local information appears in the ASPESA newsletter, now entitled ASPESA news. More specialised information is contained in the newsletters produced by ASPESA Special Interest Groups; examples include ASPESA telesignal: newsletter of the Telecommunications Special Interest Group, and the Counselling SIG newsletter. A journal which belongs here but is developing an international focus is Open campus, the journal of the Distance Education Unit of Deakin University. Armidale College of Advanced Education is engaged in obtaining funding for setting up an abstracting service covering the literature of distance education published in the ASPESA region.

- New Zealand. The Distance Education Association of New Zealand (DEANZ) is a new organisation which issues a newsletter.

- Europe (Western)- UK

- Document collections

- ICDL. ICDL first came into existence in 1978 as an information unit supporting the activities of the Open University Centre for International Cooperation and Services. Following the closure of the Centre in 1980, ICDL has continued to operate under a succession of different titles and funding arrangements. Since May 1983, funding has been provided by the United Nations University (UNU) based in Tokyo. The funding grant for 1986 totalled US\$59,500. In addition, the International Council for Distance Education (ICDE), which was involved in the establishment of ICDL under UNU funding, has given ICDL a special grant of C\$3,000 for the period 1986-1988 to indicate its continuing support. ICDL has been commissioned by external organisations to undertake several specific pieces of work under contract. For example, a bibliography on the current literature of distance education in Western Europe was compiled for the European Centre for the Development of Vocational Training (CEDEFOP), West Berlin, in 1985, and a report on the systems of distance education operating worldwide was written for the al-Quds Open University Project, Jordan, in 1986. ICDL's Honorary Director is Lord Perry, the founding Vice-Chancellor of the Open University. Two full-time staff, the Documentation Officer, Keith Harry, and the Information and Documentation Assistant, Nazira Ismail, run ICDL. There are two principal collections, one a documentation collection, the other a computerised database (described below under 'Databases'). The documentation collection contains around 10,000 items, comprising prospectuses and handbooks, research reports, conference papers, journals and individual journal articles, representative examples of course materials, and some books. The description of the forms of distance education literature which appears in section 1.1 of this report is based on

the contents of ICDL's documentation collection. The present card catalogue is being computerised during the first half of 1987.

- International Extension College (IEC). IEC was established in 1971 to provide information, consultancy and training on distance teaching. It operates two resource centres. The London centre comprises a collection of course materials produced by distance teaching institutions. It is extensively used by students from other countries who are participants on IEC's annual course on distance teaching in developing countries. The Cambridge centre is a collection of literature on distance education in all its forms, books, reports, journals, and others, amounting to approximately 5,000 items, which is an information base for IEC staff and is also used in responding to enquiries from outside. The College has always had particularly strong links with Africa, where it has been instrumental in setting up several institutions. The resource centre collections reflect these links and also IEC's predominant concern with developing countries.

- MARIS-NET (Materials and Resources Information Service Network). Subsequent to the development of its Database of Self-Study Materials (described below under 'Databases'), MARIS-NET established a collection of the materials themselves, the National Self-Study Materials Library, which currently contains around 1,100 items arranged broadly by subject.

- Databases

- ECCTIS (Educational Counselling and Credit Transfer Information Service), located in the Open University, is a Department of Education and Science-funded database which began as a development project and is moving towards becoming an established national service. It is not a database specifically concerned with distance education, but is briefly described here firstly because a version of the system on which it operates will be used later in 1987 by ICDL and secondly because the Manpower Services Commission TAP (Training Access Points) programme is commissioning ECCTIS to produce a compact disc containing the MARIS Database of Self-Study Materials. The ECCTIS database has been accessible on-line since the beginning of 1985. It comprises nearly 32,000 detailed records of courses available in the UK; 4,500 postgraduate taught courses, 11,500 first degree, 6,000 HND/Certificate, and 9,000 non-advanced further education. The database is accessible in a variety of ways, including direct on-line search, Prestel response frame, compact disc, microfiche pack, and telephone, as well as by post. It is planned that ICDL's database of information on distance teaching institutions should use a similar basic format to that which has been evolved to describe individual courses in the ECCTIS database. In addition, the ICDL computerised catalogue will be made available on compact disc, with new versions being produced on a regular basis. ECCTIS is a large-scale operation; in the month of August 1986 alone it dealt with nearly 11,000 on-line enquiries. Its original grant, for a three-year period, was £900,000.

- ICDL. The ICDL computerised database contains basic information on more than 500 distance teaching institutions all over the world, supplied on a specially designed standard form by the institutions themselves. It enables searches to be made in response to enquiries concerning subject areas taught, media employed, educational level of courses, entrance qualifications, language of instruction, and other aspects. It is intended that the quality of information be improved during the latter half of 1987 through the expansion of the categories of information currently held so that, for example, more specific searches can be made in relation to subjects taught by individual institutions.

- MARIS-NET (Materials and Resources Information Service Network). An Open Tech Programme support project managed by the National Extension College and based at Ely, Cambridgeshire. This is an on-line information service for training and education set up in 1983 with Manpower Services Commission funding. MARIS-NET offers three main services: searching databases, looking at viewdata pages, and electronic mail. Some of the databases are produced by MARIS-NET; others have been compiled by other institutions and are maintained upon the Network. Users pay an annual subscription which currently stands at £115, together with 10.5p for every minute spent logged in to MARIS-NET. The MARIS-NET databases include the Database of Self-Study Material and the Open Learning Bibliography. The former contains descriptions of nearly 9,000 training packs and other types of open learning material covering subjects relevant to the Open Tech. The latter comprises 1,000 references to documents of potential interest to those involved in any aspect of open learning. Almost all of the documents are published in the UK; many of them are also acquired by ICDL. Users can search the Bibliography on-line by author and by subject, making use of a purpose-made thesaurus. When Open Tech funding comes to an end at the end of March 1987, responsibility for maintaining the Bibliography will be assumed by the Scottish Council for Educational Technology. MARIS-NET derives an income from subscriptions and from database suppliers, who can in turn levy charges for usage. At present, on-line users of MARIS-NET occupy 5,500 minutes of access time per week; this number is expected to rise considerably in the near future when a Gateway system enables any Prestel user to access the Network.

- Directories

- Open Tech directory. The third edition is scheduled for publication in Spring 1987. The publishers, the National Extension College, anticipate that it will contain detailed information on over 1,000 courses and modules available from more than 150 projects commissioned by the Open Tech Unit.

- Open learning opportunities in Scotland. An annual publication of the Scottish Council for Educational Technology. The 1986 edition lists more than 500 open learning courses.

- Other resources. Several journals devoted to open and distance learning are published in the UK. About distance education is published by the International Extension College.

Its brief articles and news items frequently relate to developing countries; the editor of the International Council for Distance Education bulletin is employed at the Open University and the journal is published from the UK. The Bulletin's articles, news items, announcements and reviews provide a very useful source of current international information. Open learning came into existence in 1986 as the successor to the Open University journal Teaching at a distance. Its main focus is the Open University, but it includes other UK and international articles and reviews. The Council for Educational Technology publication CET news frequently contains articles and news items relating to open learning; the same organisation's OLS news has since 1980 been invaluable for its coverage of developments in open learning in the UK. The ICDL new accessions list is not a journal, but is published and distributed quarterly, publicising newly acquired documents and providing information on how to obtain them.

- North America- Canada

- Document collections. Both Athabasca University and the Open Learning Institute collect distance education literature in their Libraries, and each has many hundreds of documents. Although neither has a separate collection, there is great interest in the possibility of maintaining separate distance education catalogues.

- Databases. Both of the above institutions are keen to establish databases and have been working in cooperation with ICDL to determine formats and compatibility. The Western Canada Committee on University Distance Education maintains a database of information on courses offered by member institutions. There has been so much inter-institutional contact, and each course programme is so familiar to so many people that the database is now infrequently used.

- Directories. Canadian university distance education directory, published by the Canadian Association for University Continuing Education, is a well-established annual publication including details of the courses of nearly 30 institutions.

University education at a distance: opportunities in Ontario. 1986-87 calendar of distance education courses. Toronto, Council of Ontario Universities. The second annual edition of a directory listing in subject order the course offerings of 16 institutions.

During the latter part of 1985 and the first part of 1986, Ryerson Polytechnical Institute and the Federal Department of Communications cooperated in the compilation of a survey of distance education at all educational levels in Canada. A preliminary version was made available in 1986, and the final version will be published by the Department of Communications in early 1987 under the title Sourcebook on telecommunications and distance learning in Canada.

- Other resources. The Canadian Association of Distance Education was founded in 1983, in part 'to provide a vehicle for

the exchange of information, ideas and concerns relevant to distance education'. 1986 saw the publication of the first issue of the Association's Journal of distance education, an

international, refereed journal. Articles on distance education also often appear in the Canadian journal of university continuing education.

4. Problems, solutions, future developments

4.1. Organisation

Few institutions have chosen to create a separate documentation centre to deal with distance education, although there are good organisational reasons for doing so. The first relates to the forms in which distance education literature are published, which have already been described. There is a large proportion of semi-published and unpublished, 'grey', material which the conventional library will be reluctant to handle because much of it is obtained overseas, is free, and is not as easily handled, stored and processed as are commercially published books. The classification schemes which are adequate for large general libraries are not appropriate for specialised collections. In short, there are many reasons why it is simpler to administer a distance education collection separately from a large institutional collection. The Open University is unusual in having a documentation centre which is not under the control of the university library. The separation is due to the Librarian's view that the work carried out by ICDL is outside the remit of the Library.

Unfortunately, even where separate collections are maintained, full-time staffing is not always available. Small documentation centres tend to be looked after by staff who also have other duties. Full-time staffing is highly desirable so that uninterrupted work on the expansion and updating of the collection can be undertaken and so that the collection is continuously attended. Staff costs are the main budget expenditure in a documentation centre such as ICDL, whose annual budget of around £50,000 (1987 budget) includes provision for the bare minimum staffing of one Documentation Officer and one Documentation and Information Assistant. The Centre's other budget heads are book purchase and journal subscriptions, which along with consumables amounts to around £3,500 per annum; computer charges for rental, maintenance, development, storage and usage, currently standing at £2,500 (this figure is in no way a guide; each institution will have its own system of costing and charging); and travel and subsistence at £3,000. Additional charges which may or may not require budgetary arrangements are postal and telephone charges. Separate charges for postal services in particular could be very expensive, at least equalling the costs of books, journals and consumables. Further charges in other institutions will depend upon the individual circumstances and upon whether funding is from an internal or an external source. ICDL also enjoys very substantial technical support from the Open University Academic Computing Service for which no direct charge is made. It would be difficult to quantify this support in financial terms, but it is

certain that without this help the computerisation of the catalogue and the planned expansion of the existing computerised database could not go forward.

4.2. Bibliographic control and collaboration

The problems of collecting distance education literature have been discussed at length in this report. It is extremely difficult for one centre to maintain an adequate, current collection. One possible way ahead is for centres in different countries and regions of the world to concentrate on collecting documents produced in their own area, in addition to collecting more general material, and to transmit copies of records to other participating centres. This concept differs from that of the United Nations University regional resource centre, which concentrates on course materials. World coverage in terms of local collection of the literature is at present unfortunately patchy; by chance, much of the expertise and many of the resources are to be found in Commonwealth countries. There are also many practical problems associated with regional policies. For example, it is the experience of the International Extension College that it would be extremely difficult for any one African institution to undertake with any chance of success to collect documentation on a systematic basis from other African countries. A separately funded project, possibly introducing a specially selected project manager, is a potential solution. Political rivalries could also make selection of a mutually acceptable country or institution difficult to accomplish in some parts of the world. Fortunately, such obstacles are not encountered universally.

An information interchange mechanism is also necessary to ensure that any type of international cooperative system actually functions. There is a need for a central organisation to collect basic documentation, to coordinate exchange and act as a clearinghouse. To some degree, other institutions already rely on ICDL as a distributor of information. For example, the Centre's New accessions list is commonly used as a source of information on new publications in the very basic exercise of stock building and maintenance. This reliance is reflected in the International Council for Distance Education's strong expression of support for the Centre and its financial contribution.

Collaboration is an exciting prospect, but one that is fraught with problems on several levels. For example, any unit which wishes to be involved in a collaborative project is a part of a larger institution with its own objectives. The unit's first responsibility is to the institution it serves. ICDL is in a slightly different position from most units in that its funding is entirely external. It is therefore able to react more flexibly to collaborative proposals than units in some other institutions.

On a different level, collaboration is dependent upon there being compatibility between systems. Compatibility between computer systems has been very frequently referred to as a stumbling block in recent years, and this is still an important issue, but it is not the only area in which there must be some standardisation.

The informal working group on bibliographic databases mentioned earlier in the report has been able to achieve progress in establishing a standard cataloguing format. The next area for agreement is in subject indexing. The will to succeed is strong since each institution represented in the working group stands to gain considerably from a successful outcome.

4.3. The use of new technology in exchanging information

The rapid and exciting expansion of new technology is providing more and more opportunities and means of transmitting information. It is essential that new technology should be harnessed for information work wherever it can be efficiently and effectively used. It is equally essential, however, to bear in mind that many countries are totally unequipped to use new technology, and that others which may be able to use computers, for example, may not have a telephone system which functions adequately.

At the present time there are technologies which are only technically accessible to developed countries, particularly those such as electronic mail and computer conferencing which are dependent on telecommunications for inter-institutional and international links. Other technologies may be technically feasible in developing countries but financially impossible. In fact, even in institutions in developed countries where sophisticated communications technology is employed, it may not be accessible to departments which have not budgeted to use it. ICDL is in the fortunate position of being located in a building which houses one of the Open University's computing divisions, a division which has provided generous assistance in all ICDL's computer-related activities.

One of ICDL's principal planned activities in 1987 is to examine ways in which developing countries can benefit from the application of new technologies to information and documentation work. What are the new technologies which promise so much for documentalists and how can their benefits be extended to countries and institutions which cannot at present make use of them directly? Computer technology at different levels has many applications for information work. The ICDL computerised catalogue will enable very much quicker and more specific literature searches than are possible with the present manual system. The resulting printouts can be sent to any country. Unfortunately, institutions in many countries experience considerable difficulty in progressing beyond this point. Obtaining books, journals, reports and other forms of literature can present insuperable problems, often because of lack of funds, difficulty in obtaining foreign exchange, or the reluctance of suppliers to supply small orders. ICDL lends via the inter-library loan service, but borrowing is not an ideal solution. Making copies of documents brings an institution into potential conflict with copyright regulations, but would be a useful service. This is an area which requires careful investigation. Another new process which is available, Fax, copies documents from one machine to another in another institution or another country. Because it is based on telephone links, this system is also inaccessible to developing countries.

Institutions in countries where international telecommunications systems are established will eventually be able to search ICDL's database on-line, just as UK users can search the databases of MARIS-NET. An attractive alternative to on-line searching is the possibility of obtaining a compact disc containing the entire database. An institution possessing a compact disc player and microcomputer will be able to search the entire database in its own time rather than having to log in to the Open University's computer. This alternative will be available for the ICDL catalogue by the end of 1987. The holdings of other institutions can be incorporated into the catalogue both in the Open University computer and on compact disc. It is hoped that the existing database of basic information on distance teaching institutions will also eventually be on compact disc. Compact disc technology has the attraction for developing countries of not being dependent on the international telecommunications system. But it is expensive for an institution lacking external funding and it has the same limitation as ordinary printouts, namely that, at present, obtaining information is one step and obtaining documentation is another, quite separate, process.

Other applications of computer technology are currently of little direct relevance to developing countries, but have great potential for institutions able to communicate electronically. Electronic mail is a speedy way of ensuring that a message is transmitted directly to the addressee's mailbox, avoiding the eccentricities of the conventional mail and the costliness and uncertainty of telephoning. Unfortunately, electronic mail systems have their own problems. Two in particular were experienced in the course of preparing this report; first, the system can work technically but will not function efficiently unless mailboxes are checked and messages read regularly, and second, electronic links are subject to faults which cannot be corrected locally. Given these reservations, the system is extremely useful for information exchange. So too is computer conferencing; ICDL subscribes to the University of Guelph CoSy system in Canada, which enables participation in computer-based discussions and exchanges of information. ICDL contributes information on new publications to a distance education documentation conference. These applications of technology are already widely used in business and industry, and their potential is considerable for information work as well as for other areas of distance education. In terms of information, their effectiveness will increase as more institutions use them.

Prestel and related systems are used by a number of distance teaching institutions, in some cases for presenting general information on courses and admission procedures. It can present viable alternatives for presenting more specific information, however; for example, it would be possible for the ICDL catalogue to be accessible via MARIS-NET similarly to the Open Learning Bibliography. This type of system is only available in countries with sophisticated telecommunications systems. The same is true of computer networks such as the European EARN system which enables communications between computers rather than unilateral links with a central computer.

5. Summary conclusion

Distance education and open learning are proliferating, quantities of information and documentation are following suit, and new technology is rapidly expanding. Distance teaching institutions and international organisations are recognising the central role of good quality information backed by comprehensive documentation. Funding has traditionally been difficult to obtain for information and documentation; ICDL's funding for 1987 was not secure at the end of 1986, and the International Extension College's activities in this area have always depended on funding from consultancy income. The situation must change if adequate information and documentation services are to be established where they do not already exist, and if existing services are to be able to cope with increasing demands made on them through long-term planning made possible by the certainty of long-term funding.

It is recognised that cooperation and collaboration are essential for adequate worldwide coverage in terms of both information and literature. In the present situation this is only possible in developed countries, where individuals working in the field recognise the potential mutual benefits and have between them some of the resources required to put their ideas into practice. Resources are needed to assist developing countries in information-related activities, and workers in developed countries must evolve effective means of transmitting information and documentation to their colleagues in developing countries.

ICDL has been for several years playing the role of a central organisation, maintaining a core collection and monitoring developments and contacting new institutions and projects. Its information service is heavily used by institutions and individuals all over the world. Its accessions list is used by many institutions as the basis for building and updating their collections. The newly developed computerised cataloguing system will revolutionise ICDL's services and will it is hoped encourage cooperative acquisition and cataloguing policies.