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THE DEVELOPMENT AND SIGNIFICANCE OF  
THE CORE CURRICULUM IN  
ARCHIVES, LIBRARY AND INFORMATION STUDIES

by

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A doctoral thesis submitted in  
partial fulfilment of the requirements  
for the award of the degree of  
Doctor of Philosophy of the  
Loughborough University of Technology.  
July 1981.

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dedicated to the little ones I love

Tatiana

Gustavo

Bruno

## ABSTRACT

The main objective of this work is to try to identify the common grounds existing between archives, library and information studies from which a core curriculum could be derived for the professionals in the three fields. The underlying concept in building up such a core is that the above areas must be viewed as a whole within the information spectrum.

The historical development of librarianship is taken into account as well as the early education provided for librarians in England, United States and Brazil up to modern times when technological and social innovations have brought about changes in the information services, practices and procedures which have obviously had a direct effect on the educational patterns of members of the profession. Present and future trends towards the participation in information networks and systems at local, regional, national and international levels cannot be ignored when talking about education for the information specialist, and special attention is given to the manpower requirements expressed in both programmes of UNESCO: NATIS and UNISIST, at the present time incorporated under the aegis of the PGI (General Information Programme).

Attention is also given to some current trends in educational thought in general - with special mention to the possibility of providing a liberal education by means of professional studies - and in particular to educational developments in other five professions.

A brief evolution of the core concept in curriculum development precedes the last chapter in which some basic issues in professional education for the information professionals are dealt with. Lastly, a tentative list of subjects is given as suggestion of constituent elements of educational programmes for librarians, archivists and information scientists at both undergraduate and postgraduate levels.

## A C K N O W L E D G E M E N T S

I wish to thank Professor P.Havard-Williams as both 'the supervisor', for his prompt and effective guidance, and 'the friend', for the substantial help and kindness given to myself and to members of my family. I am also truly grateful to his wife Eileen E.Havard-Williams and children for their affection and encouragement during the long - and sometimes difficult - periods of my stay in Great Britain.

Many other people, including friends in Aberdeen, Campinas and Santos, have helped in different ways and at different times to the accomplishment of this work. To name them all would make too long a list, but in particular I would like to express my appreciation for the help of the following:

- Lucy G.Fontes, Tarcisio Zandonade, A.A.Briquet de Lemos and Antonio Miranda for providing materials and information on Brazilian library and archive education; and Rosa Gouveia and Jill Hey for readdressing many of my inter-library loan requests;
- the Brazilian governmental institution 'Coordenação do Aperfeiçoamento de Pessoal de Nível Superior' (CAPES) for financial support;
- Ana L.M.Bonato and the administration of the Pontifical Catholic University of Campinas for their moral and financial support during the last few months of my absence from the postgraduate course at that library school;
- the staff of the DLIS and of the university library at Loughborough University as well as at Robert Gordon's Institute of Technology and Aberdeen University Library for the services and facilities provided;
- Mrs.W.Flitton for the good typing work done mostly under pressing circumstances;
- Nelma and Aristides Beraquet Costa and especially to my mother Jacyra P.Marão for greatly helping Nelson to look after the children during the time I had been away from home.

Finally, I wish to express my deepest gratitude to Nelson, a very special husband whose love and encouragement made it all possible, i.e. the beginning and completion of this work.

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## INTRODUCTION

The increase in the output of scientific knowledge and information in modern industrial society, together with the growing sophistication in its organization and dissemination has meant increasingly complex demands upon professionals concerned with the provision of information. More efficient means of meeting society's increased requirements for information have been searched for in developed and developing nations alike. During the seventies, Unesco and other international organizations have provided the forum for discussions on the organization of national and international information systems and services as some of these means. Such programmes, on their turn, have highlighted the importance of having adequately trained skilled manpower to plan, organize and provide information services for social and economic development. From these meetings and discussions, a move was initiated towards a closer cooperation and coordination among the information related disciplines, and with regard to educational matters, the concept of a core curriculum in library, archives and information studies has represented one of its utmost manifestations.

The difficulties in reaching a consensus on an educational programme on a world wide basis are considerable. The subject has been dealt within its own general context but as it cannot be possibly developed in a vacuum, references are made particularly to England, United States and Brazil.

In trying to get an appreciation of the ideas which are shaping educational practice in the information field, it was initially thought

that some sort of job analysis could be useful in identifying the basic knowledge and skills required to perform professional duties. But the wide scope of this work - three disciplines in different countries - has rendered such an approach ineffective. The level of practice is markedly different in various countries, and knowledge and skills necessary for doing a job effectively can only be measured against a background of relatively constant conditions. There was also the important aspect to be considered that what has been done in practice - or the real - may not always be the best - or the ideal. It is the function of professional education not only to serve the practical needs of their students but also to lead the way towards new developments.

The work was then developed along the following lines:

1. Development of the field throughout times for, it is believed, librarianship and the present work and organization of the profession can be better apprehended through an understanding of its historic origins. In the same way, a historical evolution of professional education for librarians in England, United States and Brazil was considered helpful for an understanding of the presently adopted practices as well as of the difficulties laying ahead when attempts are made to change them. A brief account of early education for archivists and information scientists was also included in the part referring to Brazil where the role played by both the National Archives and the IBICT made the evolution of these studies in this country quite distinct from England and the United States - to which general references were made in the last chapter.
2. An examination of present trends and conditions which favour a unified approach in the education of librarians, information scientists and archivists. Among these, special attention was given to the international information programmes of UNISIST and

NATIS which have emphasized some working conditions under which the three professionals are brought together. NATIS in particular has referred to them as integral elements necessary to the development of national information infrastructures, and this single dimension has blurred the lines of demarcation between the three in many aspects. But education for the information professionals is part of a large educational spectrum, and developments in modern educational thought together with their application in the education of other professionals were also considered. Taking the aspect of a liberal education, for example, it has particular significance in the education for the professions which, by necessity, tends to be of a specialized kind. It does not need to have the 'ivory tower' character of academic disciplines taught in a meaningless way but rather it is intended to emphasize the relationship of the professional's specialized knowledge with the whole of his field and with other branches of knowledge as well. Other issues and concerns in other professions were shown in chapter six, to be shared also by the library and information profession. It is interesting to note, for example, that despite the different branches of engineering, the profession seemed to have been able to identify the essential unity underlying them all, which can provide some flexibility of course choice to students during the first year. Or still that accountancy, having had the same pragmatic nature of development of librarianship, has been facing the same difficulties in finding the theoretical foundations of its field.

3. An examination of the core curriculum as a unifying pattern of curriculum organization - in secondary and higher education as well as in the traditional library school curricula - and an attempt to identify the basic elements in library, information and archives studies from which such a core could be derived. It is a derivative study mainly from the different opinions of information and library educators on what are the essential characteristics of the three subjects. It is felt that the idea

of a core curriculum meets the present demands for diversification and flexibility of professional education in the information field for, once the fundamentals have been identified, other topics, areas and subjects can be added, and links with related disciplines looked for and exploited. The main question is to identify such fundamentals - and it seems clear that a prerequisite for this questioning position is a view of the information field as a whole. It is hoped that this work can be of some help for those concerned with this search.

## 1. The development of modern librarianship

If history is considered that branch of knowledge which deals with the study of past human affairs or actions based mainly on surviving records in graphic or other forms, and a library as any organized collection of preserved records, then libraries can be said to be as old as history itself.

The first libraries seem to have been formed in the fourth and third millennia B.C. by civilizations emerging in Egypt and the Mesopotamian Valley which was inhabited by Sumerians, Babylonians, and Assyrians successively. By about 3000 B.C. a cuneiform 'alphabet' of about four hundred characters was commonly used by Sumerian scribes and since one of the purposes of the development of writing was to preserve human communication, the library has played a vital role towards this purpose as the main communicative link throughout the history of mankind.

Libraries have shown to progress along the progress of civilization itself and to decline in periods of stress. The numerous political and military upheavals, especially in ancient societies, very often resulted in the destruction of individual libraries but, to use E.D. Johnson's words, "the idea of the library, once established, was indestructable..."<sup>(1)</sup>. They have been in existence in the Western world for nearly five thousand years and have had a virtual monopoly on the storage of human knowledge. As J. Thompson pointed out "a library is the only human institution to which an individual can turn for a permanent and comprehensive store of information."<sup>(2)</sup>

In a modern concept a library cannot be regarded as a mere store, for what it contains is of little or no value if not disseminated

among members of the community. The idea that libraries are for the dissemination of knowledge as much as for its storage seems to have been established in ancient times, maintained, however dimly, throughout the middle ages and continued into modern times.

This and other principles underlying the practice of librarianship since early times has been strongly influenced by the social, cultural and political ideals and intellectual habits of the particular society where the library was placed. These factors have shaped the library services, the nature of the collections, their organization, and the kind of clientele to be served as well as the low or high standing of libraries and librarians among other sectors of the community. In 1965, the term 'librarianship' was defined by the United States Congress as "the principles and practices of the library and information sciences, including the acquisition, organization, storage, retrieval and dissemination of information, and reference and research use of library and other information services."<sup>(3)</sup> The central task seems to be the organization of knowledge - in all its various formats - and its communication to users in order to meet their specific needs. This view of librarianship has developed along with the various roles libraries have played in the communication process throughout times. While it can be noted that these roles have often co-existed at some periods in library history, there seems to be chronological stages in which one concept of librarianship was markedly predominant over the others.

### 1.1 Library as a custodial agency

The first of the three stages was the storehouse period of librarianship in which most libraries were warehouses of carefully stored

materials, and librarians their custodians or caretakers. In such libraries, there would be little interest in having the materials used since the emphasis was on their preservation, and also not much attention would be paid to users who were supposed to know what they wanted as well as how to find what they wanted. This custodial function is easily understandable considering that records were not abundant at those primitive times when the written language and tools for recording information were in a rather rudimentary state.

The period in question is generally considered to be from the beginning of the historic age in the fourth and third millennia B.C. until the invention of movable printing in the West in the fifteenth century.

With regard to the ancient Egyptians, E.D. Johnson identified four types of graphic collections that contributed to the general development of the early library form. They were: the temple collection, the government archive, organized business records, and the collection of family or genealogical papers.<sup>(4)</sup> The temple collection would generally have copies of the sacred laws, rituals, songs, creation stories, biographies of the gods and later, the commentaries of religious authorities on all of these. The librarian would be a priest and only important temple officials would have access to the collection. It can be said that the library was also used for the teaching of language and the training of scribes who, like the librarians, were very important persons among a population with a low level of literacy. But it seems that this teaching function of the library was far superseded by the preservation one, particularly regarding important writings such as the basic scriptures which were usually inscribed on clay to be baked into imperishable bricks. One important role of the temple libraries for the



early inhabitants of Egypt as well as Babylon, Greece and Rome was that they preserved their religious literature which was their basic cultural heritage.

The second of the early library forms namely the government archives, would preserve an account of the major activities of former kings or rulers in the forms of tribute or tax records, official laws and decrees, agreements, transactions or treaties, and some of such collections would include accounts of military campaigns, genealogies of rulers, and histories of reigns.

After civilization had progressed enough to have introduced money in their exchange of goods, and as the number of these transactions grew beyond a few score, they required some form of record keeping - records of property, inventories, purchases and sales, etc. had to be preserved and arranged for easy use. In some cases, the nature of the collection was broadened to include accounts of sea or land voyages of exploration for trade purposes, natural disasters with economic repercussions, military and political events affecting trade, manufacturing methods, or formulas for products. On this respect the business archive has been considered an ancestor of the modern special library.

The family manuscript collections which survived had held records of wills, deeds, personal letters, sale forms, inventories of properties, cattle or slaves in addition to family lineages and relationships which were often kept for generations. Perhaps religious scriptures and commentaries, works of astrology and divination, history and writings of literary content might be added, and also recipes for favourite dishes and plans for simple, homemade tools have been found in the family libraries of Babylonia. (5)

It can be said that conservation was the chief concern of the 'book-keepers' or archivists of ancient Egypt but the records were kept for utilitarian reasons rather than their literary value.<sup>(6)</sup> Libraries came about after a government and religious system had been developed, and so they helped to preserve the cultural and social structure for nearly three thousand years while serving the small minority of Egyptians who could read.

Another element entered the story of library development with the Assyrians who added to the business and legal records collected in their libraries, works in philosophy, literature and other non-utilitarian fields. They enjoyed the economic and cultural benefits of two thousand years of Sumerian, Chaldean and Babylonian civilization, and while committed to preserve all that was known to man, they introduced the idea of keeping records for the love of learning. Again it can be noted that only a small portion of the population could read but, at least to this minority of scholars, Assyrian libraries seemed to have played an important part as a centre for learning. The great clay tablet library of Ashurbanipal, for example, contained materials on history, geography, astronomy and astrology, biology, mathematics, medicine and natural history in addition to religious texts, prayers, incantations, rituals and charms, materials on government, law, and a collection of what J.Thompson described as "official publications - copies of letters to and from ambassadors, for example, and tax lists."<sup>(7)</sup>

Ashurbanipal, king of Assyria ca 668 - 627 B.C., moved the capital from Khorsabad to Nineveh and there in his palace accumulated this library of some 30,000 clay tablets with cuneiform characters - the average tablet could contain the equivalent of two to three modern pages.

The library was discovered in the mid-nineteenth century through excavations on the Tigris region and, for having survived nearly intact, it is the best known of those libraries in ancient Mesopotamia, and widely reported in modern literature. One interesting aspect about it seems to be its unusual organization. The tablets were kept in many rooms and there seemed to be some subject arrangement by rooms with a general catalogue of the works to be found in each of them, where there was also something like a subject catalogue giving details of individual works. According to E.D.Johnson, these 'catalogue' tablets "include entries giving titles of works, the number of tablets for each work, the number of lines, opening words, important subdivisions, and a location or classification symbol."<sup>(8)</sup> J.W.Clark pointed out that the arrangement followed six subjects: History, Law, Science, Magic, Dogma and Legends and that the works were "arranged in series, with special precautions for keeping the tablets forming a particular series in their proper sequence."<sup>(9)</sup>

It cannot be denied that the library at Nineveh played an important custodial role for it not only preserved records of its civilization until our times but also of earlier Sumerians and Babylonians through copies and translations from their literature. But this library was not the major one - evidence of many more palace and temple libraries has been found from excavations and studies of many ancient townsites of the Mesopotamian Valley which have added a great amount of information on ancient history and particularly on library history.

When the valley was ruled by the Assyrians - in Ashurbanipal's days, the kingdom stretched from the Persian Gulf to the Mediterranean - literature and libraries were brought to a high degree of development

which came to an end after 625 B.C. with the conquest of the valley by Chaldeans, Persians and Greeks.

There seems to be evidence that there were archives or collections of writings at Pylos and Mycenae, and at Knossos on Crete since about 1500 B.C., but accounts of the history of Greek libraries usually begin from the Hellenic period, i.e. 500 B.C. onwards. The first institutional libraries were established with the great schools of philosophy in Athens during the fourth century B.C. of which the most famous collection was founded and systematically organized by Aristotle and apparently used by his pupils and friends.

It seems that book collecting among the Greeks resembled the modern idea of libraries - their educational function was somehow in evidence when masters compiled texts to read to their students or when they allowed their students to copy and also in this process the library records were used by larger groups of people. With the Greeks and their development of art and philosophy studies, the library also began to preserve graphic materials for their literary value alone and thus it acquired the character of a scholarly institution.

The most famous of all Greek libraries and which became the focus of all Hellenic learning and culture was founded in Alexandria by Ptolemy Soter between 300 and 290 B.C. It contained papyrus rolls - the equivalent of 700,000 volumes<sup>(10)</sup> - and also botanical and zoological specimens for it was used not only as a library but also as a museum and an academy. Its primary aim was also to collect and preserve everything of importance that had ever been written but unlike the previous major libraries, there was now the task of editing, criticizing, translating, and correcting texts to preserve literary purity and accuracy. It seems

that little new literature as such appeared from the work of scholars, librarians and bibliographers but they actually produced books - the division of Homer's works, for example, into individual "books" is thought to have taken place in his library. Most of the scholars seem to have been Greeks but some were natives of other countries attracted by the good prospects made available to them, i.e., relative tranquility for working while using the great resources of the Library, and comfortable economic conditions while inhabiting the Museum and enjoying the royal patronage which was a very ancient feature of the Greek culture. As E.D. Johnson pointed out "With the zeal of the Hellenic scholars and the wealth of the Ptolemies, the libraries at Alexandria approached a completeness never before known, and probably never since."<sup>(11)</sup> Perhaps to the 'wealth of the Ptolemies' it should be added their readiness - especially the first four of them - to devote great part of this wealth to the cause of literary research.

In addition to various other libraries which flourished in Alexandria, many were also established under Greek influence far from the borders of the land itself. Among these, the one at Pergamum was brought to a high degree of development which makes it sometimes to be considered as a 'rival' of the Alexandrian library. The story of the origin of parchment brings out a possible competition between them. According to it the librarians at Pergamum developed the new writing material after the supply of papyrus being sent to them had been cut off by the Egyptians who did so to prevent this library from growing as large as that in Alexandria.<sup>(12)</sup> Considering the scattered evidence that has survived, historians, archeologists and librarians, however, often look at these stories with caution.

In the same way, accounts on how these great Greek libraries ended up seem to be uncertain. One version says that the Alexandrian library, for example, was destroyed by the fire set by Julius Caesar in the nearby dockyard in 47 B.C. when he was conquering Egypt. However, R. Irwin<sup>(13)</sup> and E.D. Johnson<sup>(14)</sup> agreed that if any damage occurred from this fire, it was slight and insufficient to have destroyed the library.

On the whole, many factors seemed to have contributed to destruction of ancient books and libraries such as fires or other natural disasters, wars and civil strife, barbarian raids, economic and political disturbances, and so on. Nevertheless many of the records were carried away by invaders or conquerors and ended up in libraries in other places - like Rome, Byzantium or Baghdad - where they would be translated, studied and preserved. The classical libraries represented a step forward in the history of Western librarianship which had begun with Egyptians and Babylonians, and were also essential to the survival of the Hellenism until our times. To use E.D. Johnson's words "All the heritage we have from ancient Greece, with the exception of sculpture and architecture, has been preserved for us in books and libraries and still reaches us in the same manner."<sup>(15)</sup>

In a more direct way, great part of the cultural resources accumulated by the Greeks reached and influenced the new great civilization of the Romans particularly in the forms of books, men and ideas. From about 200 B.C. the Roman Republic gradually spread its military and political power across the Mediterranean into Europe, until about 30 B.C. when the then Roman Empire had conquered from Asia Minor to England. Books were passed from hands to hands as spoils of war from Greece, Alexandria, Carthage and Asia Minor and many ended up among the private collections of

the wealthy and cultured nobility of Rome. Also, educated people such as teachers, librarians and writers were taken to Rome as slaves or prisoners of wars and hence the similarity in types, organization and contents of the libraries of ancient Rome with those of Greece.

One new development seems to be that under the Roman Empire the great libraries were open not only to scholars but to the public as well. According to the regional census of Constantine in 350 A.D. <sup>(16)</sup>, there were about twenty eight public libraries in Rome alone, and several others in the provinces and smaller towns. These collections were supported by the government and free, at least for reference use. Although books were not allowed to be taken outside the building as a general rule, it can be found in the literature some reference that influential people could on occasion borrow them for home use. Marcus Aurelius, for example, is mentioned as have written to his friend Fronto about 145 A.D. telling him that there was no need for him to send to the libraries of Apollo for certain volumes since he himself already had them out. <sup>(17)</sup> In any event there probably was a larger number of literate people who used those libraries more than ever before in the history of man. But in most cases, the common people who were allowed into the libraries were not sufficiently educated to appreciate and take advantage of the books available.

These social and educational conditions imposed severe limitations on the public access to libraries but this fact does not invalidate the merit of the initiative. The first of the emperors who took over the task of building libraries in Rome was Augustus - Julius Caesar had planned to establish a public library to equal or surpass the one at Alexandria but he was assassinated (44 B.C.) before accomplishing his plan.

Augustus was responsible for two public libraries: the first in 36 B.C. in the Temple of Apollo on the Palatine Hill which remained one of the two major libraries in Rome and survived well until the fourth century; and the second in the Porticus Octaviae in honour of his sister Octavia and whose collection survived into the second century. The successors of Augustus maintained the tradition of building libraries, and in 114 A.D. the Emperor Trajan founded the Ulpian Library which was probably the greatest of the Roman libraries - its collection may have been based on the thirty thousand volume of a private library and it was divided into Greek and Latin sections - a common feature in the libraries due to the bilingual character of Roman culture.

The physical arrangement of Roman libraries may have differed from the Greek ones in a few details. The Romans introduced the armarium (chest) for keeping codices and more valuable rolls but most of the scrolls were usually laid on open shelves with labels containing their titles hanging out. These records were placed in store-rooms, and in addition to these a library usually had a hall for public meetings - which were often used for public readings, lectures, and rhetorical contests - reading rooms, and also some spot for conversation or meditation. The Bibliotheca Ulpiana was described as being in the same building with the Baths, and it is possible that other Roman libraries were also associated with baths when not with temples or schools.

Even before the establishment of public libraries, the private ones had become a common feature among the wealthy Roman leaders who were also known to lend their volumes to their friends. Seneca (d.65 A.D.) wrote that libraries had become as necessary in the homes of the wealthy as baths with hot and cold water<sup>(18)</sup>. R. Irwin pointed out that there is



"little doubt that the main traditions of Latin literature were passed down through the grammarians and school-teachers and the private collections of individual scholars, rather than through the public libraries."<sup>(20)</sup>

This is probably due to the fact that none of the public libraries in Rome was directly associated with teaching although it must be admitted that they served the schools. But the Romans seemed to have a tradition of 'home education' and the private library was developed on a far wider scale than it had been in Athens or Alexandria helped by the existence of an active book market and a Roman monied class.

In this same work, R. Irwin identified some special conditions of life as essential for the growth of libraries: some degree of literacy among at least a section of the population; an adequate corpus of national literature; an appreciation of the value of books; an active book market; and a class of people with settled homes and with sufficient security, leisure and wealth to enable them to enjoy books and to build up the habit of reading. These conditions were present during most of the period of the Roman Empire and also present were the many great libraries which helped to strengthen and enlarge the Roman culture.

Most of such conditions, however, began to disappear in the Western world with the fall of the Empire - the last great library in Athens was destroyed in 529 and in Rome, although precise date is not known, it seems that no classical library had come through the sixth century. Much of the civilized world had been swept over by Northern hordes who had little or no respect for learning or books; the classical era was gone, and the so-called 'Dark Ages' had begun.

These ages, it seems, were 'darker' in feudal Europe than in the Eastern Empire which still had many libraries growing, with many books

received from Rome. The centre of that civilization was at Constantinople, known to the Greeks as Byzantium, which continued to exist more or less untouched by the barbarians until 1453 when it was captured by the Ottoman Turks.

The significance of Constantinople in library history and in the Western civilization is great for it preserved in libraries and monasteries much of the classical literature throughout the Middle Ages. According to E.D.Johnson, at least seventy-five percent of the Greek classics known today are known through Byzantine copies.<sup>(21)</sup>

Another centre of culture during the Middle Ages - from the seventh century onwards - was the Moslem world centred first at Damascus, and from about 750 in Baghdad. The influence of Islam spread from Persia to Spain from where many manuscripts, including many translations from Greek philosophers and Arabic scientific works reached western Europe especially at the period of the early universities at the thirteenth century. It was said that Baghdad had over one hundred booksellers in 891 and the number of its public libraries had reached thirty by 900. More than in Constantinople, theological studies were at the basis of the scholarship in the Islam culture, and the number of religious works represented great part of all records preserved in libraries. The Koran itself was responsible for many schools and the literacy among the Moslems for it was their duty to know this collection of sayings of Mohammed. Along with studying it, the Moslem was encouraged to copy it and make it available to others. Thus, copies of the Koran were numerous in Arabic libraries - a Cairo library was reported to have had 2,400<sup>(22)</sup>, - and commentaries on it usually filled thousands of other volumes.

In addition to religious topics in the Moslem libraries, there would be poetry, fiction, works in science, pseudosciences - astrology and alchemy - , art and philosophy together with more popular volumes such as dictionaries and grammars, textbooks, business records, and writing copybooks. With regard to their arrangement, in small libraries the books were usually kept in chests with a list of the contents on the outside, and in large libraries it seems that different subjects were placed in different rooms; and their cataloguing followed the subject arrangement with the catalogues taking the form of manuscript volumes. Many of these libraries also included rooms for reading and for meetings.

Thus, after the fall of Rome, the links with the past were never totally lost. If the East preserved much of our classical literary heritage in the libraries of Byzantium and Islam, the West was also able to preserve learning - albeit in a much smaller scale - through the monastic system. From the sixth century to the Renaissance there were few or no libraries in Western Europe that were not ecclesiastical in origin and purpose. The early development of Christianity - after the writing down of the Gospel of Mark and the Epistles of Paul - was closely connected with the use and preservation of written materials, and the collections of scriptures, epistles and commentaries were zealously guarded in monastic and cathedral libraries.

The scarcity of books greatly shaped the functions of medieval libraries and librarians. As E.D.Johnson put it:

"Instead of the magnificent temple library, with its thousands of rolls in vaulted marble rooms, the library of the Middle Ages was more often a collection of a few hundred codices kept in a bookchest or two in the corner of a monastery chapel".(22)

The reading and copying of books was made a part of the regular monastic routine, and the preservation of the materials was regarded as a very important problem of library administration, with special care being taken against their soiling and theft - hence the practice, for the first time in history, of chaining books to tables or reading desks. The librarian, or custodian of the library, was held personally responsible for the safety of the books in his charge, and had to replace or mend any that were lost or damaged. He would also compile catalogues - probably more for inventory purposes than for reader use - , act as a reference librarian and take charge of the circulation of books - usually only the brothers of the monastery could borrow books but some orders extended this privilege to other monasteries or even in special cases, to some members of the general public - in which case either a book or money deposit of equal value should be left in the library. Since these duties were simple, owing to the small size and infrequent use of the collection, the position of the librarian was often combined with some other duty.

In addition to religious works, the average collection of a monastery or cathedral library consisted of Latin textbooks and grammars, a few of the Latin classics with some translations from Greek authors, and a few works of local literature and history; these were expanded in the monastery libraries with the establishment of universities in the late twelfth century and the lectures on civil and canon law, medicine, and philosophy brought by their monkish students. When the size of the collection rendered it necessary, the books were roughly classified by subject, and sometimes by size or acquisition. While there would be a separate subdivision for the religious works - usually Scriptures, commentaries, biographies of martyrs and saints, and service books - , the

secular works might be divided according to the teaching subjects of the trivium and the quadrivium. This happened particularly in the cathedral libraries which were directly involved with the training for the priesthood, and thus designed for educational reading.

With the medieval universities there was a new development in the medieval librarianship : books were kept not only to preserve the heritage of the past but also for general use - if not for the outside community at large, at least for use of their students and teachers. But the usually very strict rules for the use of books in university libraries made this a very modest beginning towards a truly free access in the sense known today. In 1321 the Charter of the Sorbonne, for example, stated that the best books on each subject must be chained, and its library was referred to by E.D.Johnson in the work already mentioned as having many chained books and some rules like : books were not to be taken outside the building and should it happen they had to be returned before the end of the day, and any member of the community other than a student or a teacher who wished to borrow a book from the library had to leave a deposit of equal value.

The major contribution of medieval libraries was in the preservation of knowledge - they truly fulfilled the custodial function. Together with the libraries of Byzantium and Islam, they preserved in their collections the ideas and ideals of the classical world for a thousand years. The function of communication of that knowledge, however, was little realized. As E.D.Johnson put it "There were, of course, bright flashes of light in the Dark Ages, light that spread from an Isidore or an Alcuin, a Carolingian renaissance or a brilliant thirteenth century; but on the whole, the western world retreated rather than advanced."<sup>(23)</sup>

The monastic libraries were dispersed in England, Germany, and in other northern countries of Europe as a result of the Reformation and religious wars. In England, the suppression of the eight hundred or more monasteries under Henry VIII was accompanied by a devastation of their libraries, and it is estimated that about 300,000 manuscripts were destroyed, sold, or sent to other countries. While it cannot be denied that the loss of these priceless documents represented a step backwards in the history of man and libraries, an alternative view is given by T.C.Tai who although recognizing that the dispersion of these libraries was a loss to human knowledge, pointed out that:

"The conception of making libraries free to all and not merely sacred store-houses open only to a few privileged scholars and monks would probably not have developed so fully had monk-librarians continued to exercise the sole power as library administrators and educators."<sup>(24)</sup>

It is doubtful whether such drastic attitudes were actually needed for the monastic movement had already lost its early vitality, and even its administrative or its educational work did not seem to be successful by that time : there are accounts of the houses being "badly administered and gravely in debt"<sup>(25)</sup>, and the educational role of the monastery had been declining since the development and emergence of the universities as centres for higher education.

Other factors were also influencing the greater flow of books and pressing for changes at the end of the Middle Ages, such as the growth of commerce; a substantial expansion of literacy among the people - greatly helped by thousands of university graduates who had been going into public life - ; the invention of the movable printing; and the new learning of Renaissance brought about by the classical texts discovered in Constantinople which reached western Europe through Italy. "In

Florence", wrote K.Clark, "the first thirty years of the fifteenth century were the heroic age of scholarship when new texts were discovered and old texts edited, when scholars were teachers and rulers and moral leaders."<sup>(26)</sup>

While there had been no marked distinction between library and archives in ancient and medieval ages, with the introduction and spreading of printing and the consequent growth of library collections, the care and preservation of books were no longer to be so strongly emphasized in libraries, and the custodial function was then gradually delegated to the archives.

It must be stressed however, that no hard and fast line can be drawn between both institutions at present, and that one function does not necessarily exclude the other. Archival services in many developed countries, for example, have adopted a dynamic and user-oriented approach for their information policies, while public libraries which participate in regional co-operative schemes and specialize in the acquisition and provision of determined subject fields usually take up a custodial role with regard to materials in these fields. Also, in many developing countries, there is generally great emphasis on the preservation of the materials acquired by the libraries, and not many steps which promote the use of their collections - such as the free access to shelves - have been widely adopted as in richer countries. The reasons and problems involved are numerous and well-known; it may be suffice to say here that the money available is usually short and never sufficient, and under such circumstances the library staff feel greater responsibility towards preventing the dispersal of the collections.

## 1.2 Library as a service agency

The second stage of library provision can be called the service period of librarianship. When the slowly and laboriously scribes' writing was replaced by the newly-invented mechanical process which could multiply written records in a much more rapid and efficient way, great many changes took place in the communication of knowledge resulting in profound alterations in the concept of libraries and their social objectives. One of the basic changes was that librarians came to realize that securing and storing was not enough - books had also to be used.

These changes must be seen against the background of rapid acceleration in the rate of historical change which the civilization of Europe went through during the two centuries from 1500 to 1700. Considering the first of the above-mentioned factors which influenced the greater flow of books, the growth of commerce brought the economic prosperity usually necessary for the flourishing of libraries. This wealth was on an unprecedented scale for the internal commerce was greatly furthered by the opening up of new overseas markets and the new resources which brought many easy gains - the influx of gold and silver from the Spanish colonies in the New World, for example - and a stimulating effect on the European economy. Also its expansion overseas meant the possibility of breaking through the cultural isolation that characterized most human societies down to the year 1500.

The next factor, i.e. the expansion of literacy, is obviously important to the growth of libraries, and it seemed to have started even before the invention of the movable printing. According to T.Kelly,



"...by mid-fifteenth century literacy, in the sense of an ability to read and write in English, was almost universal among the gentry and the merchant class of London and south-east England, and was becoming increasingly common among the ranks of craftsmen and shopkeepers." (27)

The revival of English as a literary language certainly helped to it in that it promoted the habit of reading among the middle classes by making available a wide range of manuscript copies, including translations of the classics.

But literacy was truly increased with the coming of printing and the diffusion of books. Despite the relatively small scale of the initial production - by 1550 there were about twenty printers in England producing rather more than 200 books annually, usually in editions of 600 and 700 copies, (28) - the printing press soon established itself as the normal method of book production. The technique of manufacturing paper - which came to the eastern Moslems from China about 800 A.D., reaching Spain about 950 - and its use instead of parchment or vellum, together with the use of paper boards instead of wooden boards for binding greatly helped in making printed books cheaper than manuscript books. More books and cheaper books opened up the scope of learning to more people which meant more scholars to write more books giving rise to the circle well known today.

It seems clear that this economic and social development would have no basis without an important development which became noticeable with the Renaissance and accentuated with the movements now referred to as the Scientific Revolution and the Enlightenment, namely, a general quickening of intellectual activity. One of the chief characteristics of the Renaissance thinking was an increasing interest in man and the things of

this world, with the intent of making each individual more conscious of his powers as a complete moral and intellectual being. Science had grown in prestige after outstanding figures like Galileo, Descartes, Newton, Locke or Leibniz, and it provided a new formulation for the systematized way of looking at the world, using more man's powers of rational explanation than religious teachings long accepted as orthodox. Despite some tensions between scientific thinkers of the period and churchmen, however, this revolution in thought took place within the framework of the Christian Church, and it paved the way for the greater expansion which was to come. The centuries ahead were going to witness the establishment of the democratic ideals of education, the spirit of research, and the expansion of human knowledge among many other developments, and books and libraries were to have an important role in spreading the facts and ideas of the time.

The main focus of this new stage of librarianship was on improving and increasing the resources available and making the library a service agency. It was no longer to be concerned with the production of books but with their organization and use. The efficient librarian for this kind of work would be essentially a technician as well as a bookman who could devise and put into practice accurate bibliographical tools by which people could locate the materials; simplified circulation systems, in order to make them easily available; ready reference services, and some sort of public relations activities which would make the library known to potential readers in the community.

With less attention being given to custodial duties and more to the technical and literary aspects of the library work, priest-librarians were gradually replaced by learned teachers, scholars, and prominent

writers. These were, incidentally, the first pictures of librarians in Brazil and other Latin American countries which had no ancient or medieval periods as such; their earliest stage of librarianship was represented by the empirical organization of libraries by lawyers, historians and writers.

It seems that the history of the North American librarianship also differed from its European counterpart in that it did not have a storehouse period as such: libraries have been conceived on the basis that their main purpose is the provision of services and the dissemination of knowledge. According to A.E. Bostwick, historian of the North American public library, that country's main contribution was not only the great impetus given to the idea of a tax-supported free library - the city of Boston was empowered by law to establish and maintain a public library in 1848 - but essentially the 'modern library idea', that is features such as "freedom of access to shelves, work with children, co-operation with schools, branch libraries, travelling libraries, and so-called library advertising" - the effort to make the library and its work known in the community and to induce people to use it."<sup>(29)</sup>

Following this library service concept, the efficiency of work was emphasized. The librarian's efforts were directed to see that as many books as possible were effectively used by as many people as possible with little or no time for reflection on either the library's purpose or its users and the effects of that use on them. Referring to this period H. Lancour wrote that "Quantitative measures were extensively used", and one of the identifying slogans was "The best books for the most people at the least cost."<sup>(30)</sup>

These quantitative terms of reference seemed to have pervaded all aspects of the library work. Considering the small size of medieval libraries - few had more than one thousand volumes - the growth of libraries from the sixteenth century onwards meant that librarians were faced with the problem of selection, classification, and storage of large quantity of books besides the concern about their use.

It also meant the beginning of the era of the technique-ridden librarianship, and the first sign seemed to have come from France. When the Mazarin Library opened in 1645, it was probably the largest and most valuable collection in the Western World. His librarian, Gabriel Naudé, extensively travelled around Europe in search of splendid books, and was able to build a library of more than fourteen thousand volumes - which is known later to have amounted to over forty thousands. He was concerned with the organization of library materials and produced what is regarded as the first important treatise on librarianship: 'Advis pour dresser une bibliothèque', published in 1627, and whose influence marked the transition to the age of modern library practice. The work included an account of books to be bought, a discussion of schemes for arranging the books, and description of adequate library building and its decoration. In the introduction of an English translation, A. Taylor pointed out that Naudé:

"suggested many of the principles which now govern library practice: the importance of preserving and consulting the records of past ages (...), the careful supervision of the lending of books, the convenient classification and arrangement of a library, and the granting of free access to it at appointed hours." (31)

The last one was put into practice when he asked and got the Cardinal's permission to open it for public use<sup>(32)</sup>, an act which showed him as a

liberal promoter of learning, and fully committed to making his library accessible to all.

This principle was to be advocated two centuries later by that eminent librarian, Sir Antonio Panizzi who also added a new dimension to the service function of the library. He was an Italian emigrée who held the positions of Keeper of Printed Books and Principal Librarian at the British Museum from 1837 to 1865. "It would be perfectly true to say," wrote Sir Frank Francis, "that the British Museum as most of us have known it is Panizzi's creation!"<sup>(33)</sup> As the majority of the national libraries, it was formed by the yoking together of a number of other libraries : to the collections of Sir Hans Sloane, Sir Robert Cotton, and Edward and Robert Harley, it was added the Royal Library in 1757. But the modern concept of a national collection was introduced by Panizzi. In his evidence before the 'Select Committee on the Condition, Management and Affairs of the British Museum', he stressed the distinction between a scholar's library, and libraries of a more general kind. He wanted the British Museum to have books of both kinds but he considered more important for it to have "rare, ephemeral, voluminous and costly publications, which cannot be found anywhere else, by persons not having access to great private collections."<sup>(34)</sup> He went on, expressing his belief that the library should be available to all:

"I want a poor student to have the same means of indulging his learned curiosity, of following his rational pursuits, of consulting the same authorities, of fathoming the most intricate inquiry, as the richest man in the kingdom, as far as books go, and I contend the Government is bound to give him the most liberal and unlimited assistance in this respect."<sup>(35)</sup>

One of the recommendations of the Committee was that the library staff, which up to that time had been on a rather amateur basis, should

have salaries on a professional basis as well as be forbidden to hold other paid appointments. Panizzi, then, gave up his chair of Italian to dedicate freely to the service at the library which became modernized in arrangement and in housing under his energetic work. He supervised the move in 1837 from old Montague House to the new quarters at the north end of the Museum site, the building of the central reading room and stacks in the 1850's, the first complete catalogue and rules, the enforcement of the Museum's rights in the matter of copyright deposit, and he also negotiated a substantial increase in Parliament grants for the enlargement of the collection.

There are accounts of many occasions in which Panizzi's views clashed with those of the Trustees, especially with regard to the proposed new printed catalogue, but his knowledge, resolution, and administrative skills seemed to have helped him to never flinch from his ideas and from what he considered to be his duties towards the institution he served. 'His success as a librarian,' wrote T. Kelly, 'was due not only to his tremendous capacity for work, his skill as an administrator, and his punctilious concern for detail, but above all to his vision of what the Museum Library could and should be and his determination to translate this dream into reality.'<sup>(36)</sup> And that is the new image of the librarian given by Panizzi : autocratic, interested, and administrator, in addition to the technician and the educated person.

The nineteenth century also brought two important developments in the library field : the establishment of publicly funded libraries and the founding of professional organizations (which will be dealt with in the subsequent chapters) in Great Britain and in the United States. In both countries there had been forerunners of the public libraries in the

form of subscription and circulating libraries and reading societies. Among these, the Mechanics' Institutes in Britain played an important part in adult education, especially during the first half of the century. They were voluntary associations of mechanics and working-men which provided classes, lectures, reading-rooms and libraries to members who paid an annual subscription. It is generally agreed that the Institutes were helpful in imparting the literacy and knowledge needed by the newly established industries, but one negative aspect seems to be that they were not particularly liberal in the knowledge they spread. In J.R.Allred's words "Education was given for the hand when it was denied to the whole man."<sup>(37)</sup>

The same class of people who used the institutes, i.e. motivated workers who wished to better themselves, tended to use public libraries from the 1850's onwards. Working classes, in fact, were always mentioned when proposals for services were made by the pioneers of the public library movement. This is understandable considering that England, at that time, was still a class-ridden society, and although the subscription libraries were democratic in purpose, in reality they tended to serve the middle classes, i.e., the clergy, gentry, school masters, affluent professionals and business men.

Public libraries, thus, were bound to acquire the natural character of serving the lower classes from the very beginning. It must also be considered that that was a period of profound social changes. The Enlightenment and the Scientific Revolution had paved the way in Europe for the period now known as the 'Industrial Revolution', i.e. when machines began to displace human and animal power in the various processes of manufacture, in such an efficient way that man's productive capacity and

wealth were substantially increased. Along with great social and political upheavals, this process brought about many benefits to the masses, such as a raised standard of living, greater food supply - much needed to support a growing urban population -, improved health conditions, improved means of communication and transportation, and the spread of popular education.

It was at this time that the idea of universal education began to be seriously advocated, especially as an objective of social reform, and the public library was to become one of the agencies in the educational work. Since colonial times in the United States public education came to be regarded as fundamental to the new democracy, and public libraries from their earliest days, had been closely related with schools, "with the common situation of early library collections actually being located in school buildings."<sup>(38)</sup> In England, the benefits to an industrial society from a sound basic education were frequently voiced by the pioneers of the public library movement, and strongly favoured the passing of the Public Libraries Act of 1850.

According to it, municipal authorities with a population of 10,000 or more were empowered to spend a half-penny rate on the provision for the establishment and maintenance of a library - not for books, which were expected to be supplied by donations. T.Kelly commented that:

"The powers given by the Act were exceedingly limited and inadequate; they were, moreover, permissive not compulsory. It was only after long and often bitter struggles, and much supplementary legislation, that the library service as we know it came into existence."<sup>(39)</sup>

The supplementary legislation came with the Public Libraries Act of 1919 - which removed the tax rate limitations and marked the creation of the county library service - , and the Public Libraries Act of 1964 with which



the Central Government assumed for the first time, responsibility for the supervision of the library service.

E. Edwards, the great promoter of the establishment of free public libraries in Britain, wrote fifteen years after the passing of the first act: "The Libraries so form are unconnected with any sort of sectarian influence, or of class distinction. They are not the Libraries of working-people; or of poor people, or of trades-people; but the Libraries of the city, the town, or the parish, in which they are placed ... Whilst essentially independent of gifts, they have been liberally, even promoted by liberal men."<sup>(40)</sup> It seems however, that only after the first world war, were there the necessary conditions to effect Edwards's dream of service for all. According to J.R. Allred, by 1930 some ninety eight percent of the population had a library service, since the social and economic events of the decade "had removed much of the opposition to people other than the working classes using public libraries."<sup>(41)</sup> Although his figures may be considered rather over-optimistic, it is a fact that Great Britain has one of the highest percentage of registered library users when compared with other library-conscious nations.

If the focus of library services had previously been upon the individual, it seems that by the 1930's it had shifted to the community. Librarians became socially minded and looked to schools, hospitals, clubs, prisons, factories and other institutions as possible recipients of library service which was usually provided on a group basis. Great emphasis was being given to public library growth by philanthropists in the United Kingdom and in the United States as well as by supportive legislation, and librarians were then able to apply many new concepts of

service and extend them to some special segments of the community which did not make use of library services in the past - the newly literate, the old, the blind and disadvantaged people. Inside the library administration, it was also the time of liberal attitudes and new practices in relation to service to readers such, as for example, the the open access to stacks, library service by mail, bookmobiles, inter-library loan services, and national or regional union catalogues.

By taking a deeper interest in their cultural environment, librarians had the opportunity to try to define more clearly the library objectives and responsibilities, and to seek a broad philosophy of librarianship. It became clear that the man-information interface was an essential point to that philosophy, and in what can be considered a third stage of library development, the librarian was to get himself more involved in this process, accentuating his role as mediator between man and his recorded information.

### 1.3 Library as a teaching agency

Since the early 1950's librarianship seems to have moved into a third evolutionary stage in which the focus is placed on the teaching function of the library. Librarians came to realize that it is not enough to produce efficient bibliographical devices which make the materials collected and preserved easily available. This would be only a part of a more important objective of the library itself, namely, the creation of a broad and positive form of education. Within the new format, the librarian's job does not end when he gets the book to the reader, but he is equally concerned with the effects that book is going to have upon that reader. It calls for an understanding of the motivations behind the seeking for knowledge or information, and of many

aspects of the learning process itself such as the ways in which man learns, his language, his reaction to the recorded knowledge, and the influence of records upon his behaviour.

As it has been noted earlier, the educational function of the library can be traced back to ancient times - when, for example, it was used by Aristotle and his pupils. In more modern times as early as 1650, John Durie pointed to the educational rôle of the librarian when he wrote in his book 'The reformed librarie-keeper' :

"For if Librarie-Keepers did understand themselves in the nature of their work, and would make themselves as they ought to bee, useful in their places in a publick waie; they ought to become Agents for the advancement of universal Learning..."(42)

But it was the nineteenth century educational movement towards universal education that gave the newly established free public library a social orientation and produced - perhaps for the first time - a response from the library to an apparent social need. Public libraries in the United States had been closely associated with schools from their beginning, and in Great Britain their involvement began after the Education Act of 1870 - which accepted the principle of universal elementary education. Referring to the North-American situation J.H. Shera observed that:

"The very vitality of the movement for self-education is convincing evidence of the importance of its role in society, and the reaction of the librarians to this persistent demand for an expanding intellectual horizon demonstrated that librarianship was at least started on the road to maturity and social responsibility."(43)

Indeed it must be agreed that it was only a beginning. Although librarians continued to think of themselves as scholars, in reality they performed the work of administrators, practitioners and technicians. In order to accommodate the new demand of the masses for enlightenment and

to disseminate knowledge on a wider level, techniques and organizational methods were emphasized in detriment of the more intellectual aspects of their work. It seems that their administrative functions had become so extensive that they hardly had any time for reflection on either their clientele or the library's purpose, or else they confused library function with efficiency.

Nowadays, the views and attitudes relating to the educational purposes of libraries are rather different. In modern developed societies where early public libraries were used for self-instruction by the lower classes, the increasing number of institutions offering full-time, part-time, correspondence or evening courses has meant that they would no longer be required to become in any sense a substitute for the formal educational institution. But they play an important part within the formal educational programme by supplementing school activities at all levels as well as to make further advances in learning and knowledge throughout life. As part of the educational system, public libraries continue to be a means of education also to other special groups in the community which can benefit from their services and so improve their position in society.

Within its teaching role, the library is concerned with ideas as such rather than with print as a form, and with the design of educational services for the recognized potential users of the library. The growth of leisure has increased the demand for recreational literature and so the library has provided it together with materials in the traditional fields of literature, history, art, classical studies, etc. But at the same time, the new needs of industry and commerce, of science and technology together with the realization that information is a

necessary ingredient of research and development has placed the provision of information services at the centre of the organic community. The library is then required to cater for the needs of every member of that community from the student to the professional or specialist, from the layman to the government official and decision-maker, from the worker to the manager, from the child to the old, the hospital patient, and the housebound user. E.D.Johnson pointed out that "The role of the library as an adjunct to education, as a device for information, as a partner to recreation, as a boon for business, or as an assistant to science, has been widely acclaimed and to a large extent realized."<sup>(44)</sup>

With regard to school, college and university libraries, their educational role has been greatly enhanced by modern educational theory which gives emphasis on learning rather than teaching. In school libraries the traditional combination of the teacher's explanations with textbooks is no longer considered adequate for an effective learning. Greater individual work is required from the student and, as A.M.McAnally pointed out "Any educational program that places more responsibility on the student for his own education necessarily involves greater use of books and libraries."<sup>(45)</sup> The same has happened in modern universities where the move away from the rigid structure of traditional classes and towards the more informal tutorials and seminars has also meant greater participation of the student in the educational programme. The establishment of post-graduate courses and the immense expansion of research have also brought heavy demands upon the university library and an improvement in the provision of its services - the circulation of accession lists, current awareness services, the selective dissemination

of information, and subject specialists able to assist the user in his research are some examples of this improvement.

Library profession has also been undergoing many developments within itself during the last few decades, with greater attention being paid to new areas such as international and comparative librarianship, user studies, research methods, bibliographical tools and techniques; and in this process of extending its interests, librarianship has been reaching out outside but related disciplines such as mathematics, linguistics, philosophy, electronics and computer studies, psychology, audiovisual technology, communications, management, etc.

In order to cope with the infusion of new knowledge and the increased complexity of its work, librarianship - just like many other professions - had to develop 'subspecialities', according to the different kinds of clientele and ways in which information is used as well as the different methods, techniques and tools used for the effective management and dissemination of information. Thus we can hear at present of public librarians, university librarians, special librarians, school librarians, librarians in national libraries, medical librarians, law librarians, music librarians, serial librarians, children's librarians as well as librarians specializing in computers, research, administration, public relations, training and education. By glancing through the membership of professional associations in developed countries it can be seen that many other specialities could be added to this list. And all of them can be regarded as part of an all-embracing discipline which is itself concerned with putting knowledge and information to man's use and benefit. As N.A.Simpson pointed out, the tendency for the library profession to splinter is not a new one but "The luxury of such behaviour

cannot be afforded in such a small profession when the philosophies and practices which unite us are stronger than our individual specialities and interests."<sup>(46)</sup>

Nevertheless, the profession had already witnessed some disjunction within itself in the past. Despite their common historical origins archives, library and information science had taken different ways at some point along their evolutionary process. The distinction between archives and libraries is a feature of modern times; and it can be said that while the former retained their custodial character, the latter turned themselves to the dissemination and use of the records they preserved. On the other hand, librarians were so much involved with the organization of book stocks and with the movement towards universal education and egalitarianism at the turn of this century that they failed to respond to other sectors of the community which were also demanding information - scientists, therefore, moved in to meet the needs of industry, research, science and technology.

Considering the wide scope and interdisciplinarity of the information field, diversity is to be welcomed provided that librarians, information scientists and archivists are prepared to see themselves integrated in the broad world of information - as part of "an overall structure encompassing all services involved in the provision of information for all sectors of the community and for all categories of users."<sup>(47)</sup> This overall view was given a great impetus by the Intergovernmental Conference on the Planning of National Documentation, Library and Archives Infrastructures, held in 1974 at Unesco in Paris and it certainly must be taken into account in any future development of education for the information professionals.

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## 2. Early education for librarianship.

From the preceding chapter it could be noted that ancient librarians were persons of education and power, scholars or writers, who usually combined their role as librarians with other high rank priestly or government positions. The kind of education and training they received can only be assumed from the scattered information which had survived until present times. Some details are given by J.W. Thompson on the librarians of the clay-tablet libraries of Babylonia and Assyria who had the title : 'Man of the written tablets'. This author explained that such librarians were of necessity well-trained : first, they would have to attend the school for scribes to be trained in the literature or type of record they were to keep, and second, they would serve an apprenticeship for some years, learning "the trade of the librarian".<sup>(1)</sup> They also had to learn several languages for very often they were called on to edit, transcribe, and translate government, religious, or literary works.

The professional side of librarianship seemed to have become somewhat low-ranking in ancient Rome, if not in the outstanding private libraries, at least in the public ones. The whole system of Roman public libraries was administered by a government-appointed scholar (procurator bibliothecarum), and under him each individual library had its own librarian (bibliothecarius) who was no more than a civil servant. The actual library work was performed by assistants (librarius, vilicus, and antiquarius) who were less important but still well-educated persons.

During the Middle Ages in Europe, the status of the librarian

seemed to be even lower than before. They did not represent a professional class as such - in the monasteries, the keeper of the books was a monk, and in the early universities usually a member of the teaching staff, the chaplain, or a student.

Generally speaking, the training of library personnel during this custodial period of librarianship was done quite efficiently through a short period of apprenticeship. Even during the service period, apprenticeship was still the usual way of training the new entrant since skills and techniques can be easily gained by observation together with actually working under the supervision of a senior librarian.

After the Enlightenment, the typical librarian was a bookman or a 'man of letters', who was expected to read everything published in all departments of learning. When the mechanization of the printing process was greatly improved by a series of inventions during the first decades of the nineteenth century, the output of literature outgrew beyond the librarian's or any other individual's reading capacity. Writing in 1870, R.W.Emerson estimated that "the number of printed books extant may easily exceed a million" and went on to demonstrate that "he who would read their hundreds of millions of pages must die in the first alcoves of the library - even if he should read from dawn until dark for sixty years".<sup>(2)</sup> It was becoming clear that the reader would need some method and guidance if he was to take full advantage from the books available, and that librarians and organized libraries could greatly help towards the provision of such guidance. The emphasis was then directed to the organizational and administrative aspects of librarianship, and it was beginning to be realized that librarians should have

proper training in addition to being scholars.

Contributions from Germany and Italy were among the early suggestions of formal library training. As early as 1829, M. Schrettinger pointed out that 'No man with a literary education, however highly educated he is, even if he is a great scholar, is fitted to be a librarian without a special study, preparation and practice.'<sup>(3)</sup> And his suggestion was that there should be 'a kind of librarian's training school' connected with a national library.

A more detailed proposal of special schooling for German librarians was made by F. Rullmann in a 28-page brochure published in 1874. He outlined a three-year university course which was to include: foreign languages, general history as well as collateral studies such as palaeography and diplomatics; 'encyclopedia' or 'studies on general learning; a history of literature; the history of the manuscript, printing, and the booktrade; the fine arts and books production; the history of library science; the management of libraries and archives; the world's great libraries; and practical instruction in cataloguing and classification.'<sup>(4)</sup>

Although such early proposals do not appear to have been put into practice, they served at least as positive pressure and directive to future action. Dr. Rullmann's plan, for example, is known to have influenced contemporary North-American librarians and in particular Melville Louis Dewey who was later to found the modern world's first library school. The 1876 Report on Public Libraries<sup>(5)</sup> contained "a translation of Dr. Rullmann's tract advocating library science as a subject of special study in German universities", according to a review which appeared in the first issue of the library journal with M.L. Dewey as its editor.<sup>(6)</sup>

Among the Italian contribution to the pioneer work for the establishment of formal training for librarians, C.M.White<sup>(7)</sup> mentioned a "short-lived course of library instruction" inaugurated at the University of Naples in 1865, and the planning for a two-year course of study leading to a diploma for the members of the staff of the Vittoria Emanuel Library at Rome. This project would cover subjects like: the history of books; elementary knowledge of how to classify the sciences and of the important works in each field; origin and varieties of handwriting; history of printing; the state of booktrade; the proper arrangement and administration of a library; the formation of catalogues; important works on bibliography; some knowledge of the principal libraries of Europe; and the elements of palaeography.<sup>(8)</sup>

There was also an Italian decree issued in 1876 which "ordered that in every national library (of which there were five) a chair of librarianship be established to teach and train students in bibliothecal sciences so as to qualify them for appointments as librarians."<sup>(9)</sup> But as it so often happens in other countries even today, official decrees were not sufficient to bring professional developments into existence in nineteenth century Italy for, again, the plan does not appear to have been carried out by any of the national libraries.

Rather more fruitful initiative and general leadership in library training would come mainly from Anglo-American practices which were to emerge before the end of the century on both sides of the Atlantic, and which would somehow represent a turning point from apprenticeship to professional education.

## 2.1 Early library education in England.

By the late 1870's many factors had contributed to accelerate demands for qualified library personnel - in addition to the already mentioned increase in book production and the spread of literacy, there was the establishment of numerous<sup>(10)</sup> new public libraries following the 1850 Act. Until that time there had been no formal training for librarians, and even the apprenticeship system does not seem to have been fully used by everyone in the library field. As J.Thompson pointed out, most public librarians appointed in the mid-nineteenth century period had had no previous experience of librarianship - Liverpool's first librarian was a schoolmaster; Oxford had a bookseller; Cambridge, a bookseller's assistant, and Sheffield, a silverplater's apprentice.<sup>(11)</sup>

Many of these 'amateur librarians' seemed to have done quite well - probably due to the elementary nature of public library's tasks at that stage - and having learned their job, this generation of librarians began to train up a body of library assistants.

Librarianship was then regarded as an entirely practical subject, and libraries as the best places to teach it. Staff training schemes were organized in some major urban centres - at Bolton public library the system required an apprenticeship of two years, and at Liverpool, five years<sup>(12)</sup> - and they provided students with what is regarded today as 'training', i.e. the knowledge of the day-to-day practice or the 'how' rather than 'why' to do things in a particular way.

In 1877 the Library Association was formed, and in the same fashion of most of other professional bodies established from 1850 to 1910, it began to develop its own examination and educational systems.

At its 1880 annual conference, there was one resolution put forward in the name of H.R.Tedder in which the Association was called to consider how to aid library assistants to meet their training requirements, and this event, in J.Bramley's words, "marks the beginning of formal education for librarians in Britain."<sup>(13)</sup>

At that stage, the Association did not see itself as a teaching agency but as an examining body. After a refusal in 1881, the proposition of a system of examinations was adopted at the 1882 conference in Cambridge, but the first examinations were actually held only three years later. The syllabus was as follows: a preliminary examination in arithmetic, English grammar and composition, English history, geography, and English literature. For a Second Class Certificate: English literature, one other European literature, the principles of classification, the elements of bibliography and cataloguing, library administration, and a cataloguing knowledge of at least two languages besides English. For a First Class Certificate, candidates should have an advanced knowledge of the subjects listed for the Second Class Certificate plus a paper on general literary history. At this stage a cataloguing knowledge of three languages and two years' experience completed the requirements.<sup>(14)</sup>

Although this list of subjects may look impressive, these examinations called more on the memories of candidates than on their academic or professional background. In the above-mentioned work J.Bramley quoted the following examples of questions from the English literature and the library administration papers: 'Give the titles of ten selected English novels published within the last ten years'; 'Give a list of Dicken's works in order of publication'; and 'What provision



would you make against fire'; 'How would you arrange the leading newspapers so as to be read easily by several readers?'

These questions certainly were not designed to explore the candidate's reasoning and creative abilities but even so they proved to be at a much higher level than the standard of general education of the average candidate. Especially because the financial rewards of librarianship were not worthwhile for good recruits, a typical library assistant would be a poorly educated person with a bare grounding in reading, writing and arithmetic; with limited ambitions in life; and expected to work about twelve hours a day.

In these circumstances, the majority of young librarians were not attracted to the examinations. Like the level, the number of candidates was also very low - at the first examinations, there were only three candidates, of whom one failed. The Library Association made several changes in the following examination syllabuses in order to popularize them but, it seems, with little success. The first change was made in 1890, and next in 1897 when the preliminary test was abolished and the professional subjects reduced to three papers - only one candidate presented himself that year and during the next six years there were to be, in all, nine candidates.

One implication of these changes was that the literary content of the first examination was being replaced by a strong emphasis upon the practical aspects of library work, especially administrative procedures, routines and methods. This trend can be seen in the new syllabus which came into being in 1904, and which shows that at that time training was still identified with education. It consisted of six sectional papers, and with the exception of one - literary history - all the others

were entirely concerned with training : practical bibliography, classification, cataloguing, library history and organization, and library administration.<sup>(15)</sup> The subjects could be taken separately, with an examination and an essay for each of them. Candidates were awarded a certificate for each subject completed, and the Diploma of the Library Association after the completion of all subjects, plus three years' approved library experience. In 1907, the Library Association increased its requirements by deciding that Diploma candidates should also have to submit a thesis on a subject previously determined by the council, plus a certificate of competence in Latin or a modern foreign language.

The 1904 syllabus was to remain unchanged, in essence, for twenty-eight years, but training for British librarians was developing along apprentice, correspondence, part-time lines. Soon after the Library Association had started holding examinations, it became evident to some members the difficulty experienced by library assistants in preparing on their own for the examination, and that there should be some form of tuition in professional subjects. At that time, in England, there were no institutions of higher or further education to which to turn for vocational training, since the universities were more committed to research and study in academic subjects than to the field of professional education.

Like most of the other professional bodies, the Library Association was then compelled to introduce its own facilities to help in the training of their younger members. In 1892 John Ogle delivered a paper to the annual conference at Liverpool in which he proposed 'A summer school of librarianship'. As a result the first of several was held in

London in 1893 - at Manchester in 1897, at Birmingham in 1901, and Aberystwyth between 1917 and 1928. These summer meetings, at a university, must have been a welcome break in the solitary studies of many students and also provided them with the opportunity to discuss their common problems with their peers as well as with the more able and experienced lecturers-librarians.

But summer schools could only help a minority. There was need for more systematic courses of instruction, and the Library Association took up the idea of correspondence tuition. The development of the already mentioned staff training schemes and part-time classes in libraries in the major urban centres meant that the young librarians in the cities had some means of formal instruction to help them in their preparations for the Associations' examinations. Thus, the Library Association started its correspondence courses for the library assistants living in the provinces in 1904, when it then became itself both a teaching and examining agency. The correspondence courses represented a regular means of study until the 1930's - when growing numbers of new recruits began to seek the assistance of the newly established evening institutes in the further education field - and it even continued to be used by a few until 1964.

It may be worth noting that the programme contents in evening and correspondence classes were always related to, and indeed decided by the examinations, and not by the part-time teachers. As the men who wrote the syllabuses and devised the papers usually did so mainly on the simple principle of noting what they were doing in their own libraries, there was a strong emphasis upon the practical and immediately applicable aspects of library work in the examinations and, consequently in

everything else prospective librarians were studying.

The Library Association not only dictated the kind of education and training which librarians received but also held their registers, and secured a monopoly in the field of professional qualifications. These responsibilities were referred to in two clauses in the Royal Charter it was granted in 1898, namely, 'To hold examinations, in librarianship and issue certificates of efficiency; and 'To promote whatever may tend to the improvement of the position and qualifications of librarians.'<sup>(16)</sup>

The first official register of the association's members was established in 1909 and its membership ranged from Fellows (senior librarians and holders of the Diploma), through Members (experienced and qualified librarians not eligible for the Fellowship) and Associate Members (other members of library staff and non-librarians), to student members (until the age of twenty-five). The examination became the sole means of gaining professional status in 1914 when the Library Association made it compulsory for members who wished to register as professionally qualified librarians.

Since 1902 in London, courses in librarianship had been offered in collaboration with the London School of Economics, but there was a small minority of the Association's membership which had been pressing for further advances. Perhaps influenced by the development of training for librarians in contemporary North-American schools, they wanted to see the establishment of a system of full-time schools of librarianship throughout Britain but under the control of the Library Association.

Most of the members, however, had many doubts on whether this was the proper course for professional education to follow. They

regarded the question of raising the training standards for librarians closely related with their salary prospects - which were then well below those in other comparable professions. According to them, there had to be an improvement in the financial position of libraries before the Association could take any step to change its educational policy. Another objection was that a diploma issued by a university would by far outweigh the Library Association's diploma in prestige, and even threaten the continuing existence of its qualifications. And there was also the perennial - but not quite reasonable - argument that librarianship had a too low academic content to be commended as a subject suited to a university course. As one university librarian said, "there was nothing in librarianship to study."<sup>(17)</sup>

Nevertheless, with the aid of a five-year grant from the Carnegie Trust, the first full-time school of librarianship in Great Britain opened at University College London on Monday, September 29, 1919. Both full-time and part-time courses were offered, being the former with one year's duration for the graduate and two years for the non-graduate; and part-time students being required from three to five years. The subjects covered were : bibliography, cataloguing and classification, library organization, literary history, public library law, palaeography and archives.<sup>(18)</sup> The syllabus was similar to the Library Association's one and yet students were not being prepared for its qualifications but for the school's own diploma - which had been accepted for exemption from the Association's examinations.

The next step in the original plan, i.e. the establishment of other schools of librarianship throughout the country, was not put into effect until after the second world war, and the solitary school at

London University, to use G. Bramley's words, "operated in splendid isolation, exercising only a peripheral influence upon the main development of professional training."<sup>(19)</sup>

The major influence and guidance continued to be exercised by the professional association - and as it can be seen in chapter six, this also happened with other professional bodies, what makes professional education in Britain quite distinct from the lines followed in other countries.

The Library Association put into practice a new syllabus in the May, 1933 examinations. The changes were not so much in contents as in examination structure and organization. The six sectional certificates were replaced by the elementary, intermediate and final sections which had to be taken together and passed at one sitting before the candidate could proceed to the next. Cataloguing and classification still accounted for the large part of the examinations with the whole of the intermediate stage - which had four papers of three hours each - dedicated to them. The important innovation in the new syllabus was the introduction of optional papers at the final level - there was the choice of either English literary history or the literary history of science, or still the literary history of economics and commerce. The candidate was also able to choose between indexing and abstracting, or palaeography and archives, and to specialize in either public library administration, or the administration of university or special libraries. In addition to these options, there were compulsory sections on the usual core subjects : library administration, bibliography and book selection.

This diversification showed an attempt of the Library Association to meet the demands of all types of librarians, especially after the

special librarians, alleging discontentment with the Association's lack of appreciation of their particular educational needs, had founded the Association of Special Librarians and Information Bureaux (ASLIB) in 1925. It also showed that librarianship was becoming more complex as a subject for study, but practical matters were still greatly emphasized, and its theoretical aspects were largely neglected.

This was intended to be a temporary syllabus but the next new one was introduced only after the Second World War under totally different circumstances.

During the War, the Government expressed its concern with post-war reconstruction and made plans for the educational rehabilitation of ex-service personnel as well as the young population in general. These resulted in the Government Scheme of Further Education and Training - which provided grants for ex-service men and women willing to attend full-time vocational courses - , and the 1944 Education Act - which empowered local education authorities to make awards to any student qualified to attend a degree or vocational course.

Librarianship was also to benefit from the situation. In his 1942 survey on the public library service L.R.McColvin stressed the post-war training needs of British librarians. In the third part of the report, 'Proposals for the future', he pointed out that:

"Our first responsibility after the war - ... - is to make good the effects of war upon the training of library personnel ... Therefore, whatever happens ... we must now make full arrangements for the intensive professional education of men and women as soon as the war is over. For this purpose - even were there no other - we should set up our library schools, where in a short intensive full-time course the student may cover the necessary ground."(20)

The Library Association had made clear its position that no further erosion of its diploma would be permitted, and that if there were to be other schools of librarianship, they would have to prepare their students for its examinations. (21) L.R.McColvin, himself the honorary secretary of the Association seemed to fully agree with this view for, in his proposals, he regarded full-time library schools as teaching and not examining institutions.

The intention was that the universities would provide the theoretical aspects of librarianship, and large libraries would act as training centres by supplying students with the technical and practical aspects of library work. However, the universities approached by the Library Association did not show themselves willing to embrace new vocational courses, and neither to accept the role ascribed to them by the Association's educational policy. This one had been defined in the following way:

"The Final Examination of the L.A. in its entirety be regarded as the supreme qualification for librarianship, and whilst teaching by universities will be welcomed, no diploma or degree issued by them will be regarded as a complete substitute."(22)

Thus, the School of Librarianship at University College, London, which was reopened in 1945, continued to be the only university school of librarianship in Great Britain until the early 1960's. But the Library Association turned to the further education sector and soon many schools were established in technical colleges and colleges of commerce - in the autumn 1946 at Glasgow, Loughborough, Leeds, Manchester and the City of London College; and in January of the following year, at Brighton and Newcastle.



Coinciding with the opening of the new schools, the Library Association introduced a new and more comprehensive syllabus for the examinations. Candidates with a school certificate had to pass the entrance examination - which included history of English Literature and elementary librarianship - before proceeding to the registration examination. This gave admission to the Associateship and included classification and cataloguing, bibliography and assistance to readers, library administration and history of English literature. The final examination led to the Fellowship and in addition to the same subjects as the registration but at a greater depth, it also required an essay of five to ten thousands words. The candidate was then allowed a number of alternative papers which provided for his specialization in some type of library or subject literature.

Despite the higher level of educational standards, the essentially practical approach of the examinations still persisted and was somehow reflected on the library school courses whose main purpose was seen in getting students through the examinations. It seems that even if library school lecturers wanted to think about the problems of professional education or challenge the assumptions of the examiners, they had no time to do it - the long terms and overload of work hardly allow them to simply respond to the examination syllabus.

The next development would be in having the schools of librarianship and not the Library Association conducting the examinations, and in the late 1950's and early 1960's the Association seemed to be agreeing with this further advance, provided that certain minimum standards would have been accepted by them.

Another influence on professional education for librarianship at that time was the pressure from ASLIB for the provision of proper training for special librarians who did not seem to be satisfied with the Library Association syllabus and examinations. In 1954 a joint committee representing both institutions was set up to consider a new syllabus which would satisfy both sides. The resulted syllabus came nearly ten years later and was designed for a full-time two-year integrated course. Although it fell far short of the ideal to many sections of the membership of ASLIB and the LA, the new programme was announced as the pattern of the future, and it marked the beginning of universal full-time education for librarianship in Great Britain. It represented the recognition that librarians had to be trained in the theory as well as in the skills and techniques of their profession and for that the old apprentice/part-time system would no longer be appropriate.

The 1964 examination consisted of two stages. Part I contained the following 'core' subjects : The library and the community; The government and control of libraries; The organization of knowledge; and Bibliographical control and service. These papers covered the fundamental aspects common to all types of libraries, and part II provided the student with a number of alternative papers. He had to pass six papers and could choose from three lists : the first included academic and legal deposit libraries, or special libraries, or public libraries; from the second list he could choose theory of classification, theory of cataloguing, histories of libraries and librarianship, handling and dissemination of information, hospital libraries, and archive administration; and the third list offered a choice of over thirty papers

on the bibliography in different subject fields. A thesis requirement replaced the previous final examination which had led to Fellowship.

The next steps connected with the development of the Association's syllabus were the decision to devolve upon schools the power to construct their own syllabuses, the coming of first degrees in librarianship - which had been made possible with the foundation of the Council for National Academic Awards (CNAA) in the early 1960's - , and the development of postgraduate courses from the early 1970's.

Another step, one of major significance for the future of British library education, was taken on 27 May, 1977, when the Library Association Council approved the report of the 'Working Party on the Future of Professional Qualification' - it marked the beginning of the movement towards a graduate profession for librarianship in this country.

## 2.2. Early library education in the United States.

The professional education for North-American librarians has developed along different lines from the British system and this was greatly due to the different character and structure of higher education in that country.

Before the country's political independence, North-American universities had followed the educational model of the English ones. The early Harvard course of study, for example, consisted of classical languages and literature, mathematics, logic, philosophy and theology, while Yale included the Greek and Hebrew tongues, logic, physics, metaphysics and mathematics, rethoric, oratory and divinity.<sup>(23)</sup> In the years following the Civil War this classical tradition began to be replaced by the

educational policy of the movement for technical education whose main purpose was to give adequate attention to the knowledge arising from the newer sciences and practical arts, and to relate it to the realities of the country concerned.

Unlike what happened in England, however, the apprenticeship system was not going to play an important role in vocational training. In fact, it seemed to be disappearing at a time when the effects of the internal industrial expansion of the country were strongly demanding skilled labour of all kinds. C.M.White argued that the higher knowledge involved in newer forms of production could hardly be learned on the factory premises, and that these different conditions rendered many of the laws which upheld apprenticeship first unenforceable, then obsolete. He pointed out that:

"Certainly apprenticeship was, as an educational method, far from perfect. It was extravagant with the time of the pupil and of the teacher. It was unsystematic, uneven in its results; and readily permitted exploitation of the apprentice."<sup>(24)</sup>

The old-style system was losing ground in the latter part of the nineteenth century and its substitute was found in the French model of establishing technical or 'trade' schools as they were sometimes called. One additional aspect in the United States was that their universities were by then, prepared to play an active part in the new movement and together with the colleges they led the way to the development of education and training for the professions.

It was under these circumstances that librarianship and other new disciplines found themselves ready to introduce provisions for the training of their personnel. Library training, from the beginning, was going to take place within a university rank institution but this outcome

was more the result of the conditions above mentioned and the personality of those who pioneered the venture than the recognition that the subject had reached higher educational level.

Melvil Dewey's enthusiasm seems to have been the inspiration of the first library school opened on January 5, 1887, at Columbia College, New York. He is often pictured not as a scholar but as an indefatigable promoter and an efficient administrator. About his activities from 1876 until 1883, J.Thompson pointed out that:

'With Dewey as its secretary and chief moving spirit, the American Library Association, the first library organisation, was founded; the 'Library Journal', the first periodical, appeared under Dewey's editorship; the Dewey Decimal Classification began to be spread abroad; and under Dewey's leadership and impetus, the Library Bureau-initiator of all sorts of new library devices and equipment - was established.'"(25)

The A.L.A. was founded in 1876, and while the British Library Association had expressed official interest in library training only three years after its foundation, its North-American counterpart did not do so until 1883 when at the Buffalo Conference, it gave its support to the proposed experiment at Columbia.<sup>(26)</sup> By encouraging the college to establish the course, the A.L.A. was then setting the pace for the supervisory educational role which it was going to play in the future; the initiative had been taken by some of its members. In 1879 M.Dewey had pointed to the need for a central training school and while it was not brought into reality, he recommended that "the first step to be taken is to arrange systematic instruction and apprenticeship in connection with some of our best managed libraries under the charge of our most enterprising librarians."<sup>(27)</sup>

This inclination towards the apprentice method was reflected

in the school he opened eight years later for, despite being placed in an academic setting, it can be considered an 'apprenticeship school', i.e., designed to produce competence for immediate work in a more systematic way than apprenticeship. What he had in mind was a place where the students could learn the standardized methods and techniques - such as his classification scheme, for example - as well as the actual tasks involved in everyday library work. The course combined lectures, instruction and practice work under supervision, but it was essentially empirical in character, and included the teaching of such skills as library handwriting and the use of the typewriter.

The School of Library Economy had never been fully accepted by the trustees and thus, when Dewey accepted the directorship of the New York State Library, they were very much receptive to his proposal of transferring the school to the state library. The school closed in March 1889 - to return to Columbia in 1926 as the present day School of Library Service.

Although the experience had not been very successful, the fact remains that the first North-American library school began at a university and the way of having formal library school method of preparing librarians was indicated for the others which were to come. Several of the technical institutes which were then replacing the earlier apprenticeship system of training workers for the vocations followed the path; Pratt Institute began a library training programme in 1890, Drexel Institute in 1891, Armour Institute in Chicago in 1893 (it was transferred to the University of Illinois in 1897), Carnegie Institute in 1901, and Simmons in 1902. (28)

There were, however, parallel types of library training between

1887 and 1920 : training classes run by the larger public libraries, summer school courses, on-the-job training and other forms of apprenticeship, but by the later years of this period formal library schools had won out as the preferred method of training library workers.

Contrary to the British system in which the focus was the examination, the training of North-American librarians emphasized the actual course of instruction whose standards, on their turn, depended on the academic level of the teaching staff as well as the educational facilities available at the schools of librarianship. This matter of differing standards and the possibility of national certification was going to be of great concern to the A.L.A. which in 1916 set up a committee on the 'Standardisation of Libraries and the certification of Librarians' but the general opinion seemed to be against the imposition of national standards.

The Association of American Library Schools, which was formed in 1915, set minimum standards for the education of librarians but they were generally considered to be of a low level. The profession finally gained control over standards of training when in 1924, the A.L.A. established the Board of Education for Librarianship whose primary function was the accreditation of library school programmes. In 1925, the A.L.A. Council adopted 'Minimum Standards for Library Schools' which provided for four types of library education programmes, from the undergraduate level to the advanced graduate school. The Board's tasks would then be to apply these standards to the schools and publish a list of those whose programmes met the standards.

The founding of the Board was in response to the famous

'Williamson Report' of 1923<sup>(29)</sup> prepared for the Carnegie Corporation of New York, which is considered the most influential document on North-American library education ever published. It surveyed the existing facilities for library training, pointing to the weaknesses of the system - low academic education and professional experience of teaching staff, inadequate classroom teaching and admission standards, curricula crowded with inappropriate subjects, and the like - , and calling for drastic reforms.

In addition to the creation of the Board of Education for Librarianship and the accrediting system of library schools, C.E.Carroll listed the following among Williamson's reforms which were effected prior to 1940:

1. The definition of what was clerical and what was professional was becoming clearer and was affecting the library school curriculum.
2. The establishment of some programmes for advanced study, including the Chicago Graduate Library School.
3. Most schools were requiring a broader liberal arts background for those desiring admission.
4. All library schools were affiliated with degree-granting institutions.<sup>(30)</sup>

These reforms all tended to help library education in moving closer to the educational pattern followed by other more established professions in the country. In particular, the establishment of the Chicago University Graduate Library School in the late 1920's represented a significant departure from the strong empirical orientation of librarianship towards the development of a supporting fund of tested theoretical knowledge. Its programme of study would lead to the master's degree and doctorate, and its basic concern was the research into the basic problems



of librarianship, applying the principles of scientific investigation. J.H.Shera pointed out that perhaps the schools' "greatest single innovation was that, for the first time in library education, the library was seen as a social phenomenon, and all its research and instruction was given a sociological focus."<sup>(31)</sup>

Among the School's teaching staff was P.Butler whose book 'Introduction to library science' is one of the early attempts to formulate a valid philosophy of librarianship. His ideas were considered revolutionary in the early 1930's and just like the graduate school itself, aroused the antagonism of many in the profession. Higher degrees in librarianship were then considered quite unnecessary by some (fortunately, not by most) people who usually criticized the Chicago School for moving library education away from its practical character towards excessive theory.

In any way, this school represented an isolated initiative. Most of the others did not dispose of the vast financial resources available to the Chicago School and generally they were inadequately financed with many deficiencies regarding their teaching and administrative staff as well as their course content. According to many surveys and studies in the 1940's<sup>(32)</sup> most library schools still followed the same pattern of curriculum described in the Williamson report. There was usually a common core of classification, cataloguing, library administration, reference work and bibliography, book selection and the history of books and printing; and elective courses to be chosen by the student according to his special subject field or the type of library he is going to work in.

There was great diversity with regard to the duration of library

courses. In 1933 the Board of Education identified three categories of schools : in the first group, there were the universities which offered the master's degree in librarianship requiring two years beyond the basic bachelor's degree; in the second, the schools offering a programme of one year's duration leading to the award of Bachelor of Science in Library Science; and in category three, those schools which offered classes in librarianship as part of the undergraduate curriculum leading to a Bachelor of Arts or Bachelor of Science degrees. There were also other schools, not accredited by the Board which offered library courses and conferred the bachelor's degree.

The accredited schools changed from a four year to a five year programme beyond the secondary school level, following the 'Standards for Accreditation' published in 1951. These also made recommendations on the course content stating that specialization should come after a sound general academic and professional education. The underlying principle was that the definition of a core of librarianship as basic to all library education would have a unifying influence on the development of the curriculum; schools were free to specialize after meeting the basic requirements of preparing general librarians through a "study of professional principles and methods common to the several kinds of libraries and of library service."<sup>(33)</sup>

One important outcome from the 1951 Standards was that with the Board's decision to accredit only the basic preprofessional library training programmes on a post-bachelor level, it defined the master's as the basic professional degree, thus paving the way for having library education as graduate-professional education - nowadays all courses in library and information science, including initial courses, are at post-

graduate level with the Master of Library Science (MLS), which is the equivalent to the Associateship of the British Library Association, replacing the Bachelor's degree which was for many years the normal initial qualification. It is a fifth-year graduate programme following a four-year undergraduate baccalaureate degree.

During the 1960's library education in the United States was characterized by a great increase in the number of accredited programmes - from thirty in 1960 it went to fifty one in 1973<sup>(34)</sup> - as well as in advanced graduate and Ph.D programmes, and also by attempts to accommodate the emerging concepts of information science into the basic core curriculum.

In 1972 the ALA Committee published new 'Standards for Accreditation' which reinforced the need for the study of general professional principles and procedures before the specialization, but they did not specify the length of the basic programme as the previous 'Standards' did. Because of the new demands on librarianship and the new content to be integrated into the curriculum, there has been a tendency to increase the period of the basic professional course and/or the number of elective options available to the student, reducing, in this way, the number of compulsory subjects which used to fill the larger part of the curriculum - some schools, for example, have made optional some of the traditional requirements such as history of books and printing, and even cataloguing and classification.<sup>(35)</sup>

Although schools have not usually achieved an ideal harmonized blending of the studies of information science and documentation into the library curriculum, most accredited programmes, as the survey undertaken for FID<sup>(36)</sup> has shown, provide for the teaching of information science

and documentation subjects - most of them usually are science information oriented or computer oriented programmes.

Some progress towards such integration can also be noted in aspects other than the curriculum. The 1972 Standards, for example, use the term 'librarianship' in its broad sense as encompassing the relevant concepts of information science and documentation; and also, like in England, there has been the trend of name-changing in library schools - usually from 'School of Library Science' to 'School of Information Studies' (or Services). The school at Syracuse University had its title changed in July 1974 and the announcement explained that:

"the word information studies is simple and direct, and broad enough to cover a variety of concepts, concerns, and activities, including libraries. The library sits in a broad and rich geography of information activities, and we and our students should be a part of that larger community: archives, information retrieval, publishing, museums, cable television, community organisations, regional planning agencies, media centres, etc." (37)

From the evolution of education for librarianship in England and in the United States, it can be seen that conditions in both countries are more favourable to the development of a unified approach in the education for the information professionals than in most continental countries of Europe. It seems that no body of theory or principles has yet been accepted in the latter countries as applicable to the different types of libraries, and thus, different patterns of library education have traditionally been offered in separate programmes. This distinction is not only in the nature and quality of the education provided but also in terms of especialization and levels. Consequently, the institutions providing education and training for the information professionals have worked in total isolation from each other. Writing

on the different approaches of library education in these countries, D.Davinson observed that:

"In many European countries, the proposition that perhaps a greater degree of unification of the separate programs would result in improved quality, is generally greeted with scepticism. Furthermore, a proposition that there is sufficient common ground between librarianship and that rather amorphous subject 'information science' to justify unification would be greeted with outright derision."(38)

Further on, the author admits however that there is evidence of a shift of attitude in some countries, particularly West Germany, towards some integration into more effective and economical units. These new trends in West German library education were also mentioned by D.J.Foskett who gave details of the programme of information and documentation science at the Free University of Berlin, and pointed, among others, to the following trend in the general area of professional education and training:

"There are plans to integrate training for senior librarians into the university programmes. This perhaps will be done more on the postgraduate level, but there is a good chance that this type of training perhaps can be integrated with the curricula of information science (taking information science as a roof for both, librarianship and documentation)".(39)

Generally speaking, the patterns of education for librarianship in continental Europe greatly differ from the British pattern, and both, in their turn, have influenced the North-American one, which nevertheless emerged with its own peculiar characteristics. Despite many uncertainties and problems which remain to be solved, library education has reached a considerable degree of maturity in the United States. They were among the first countries in the world to provide university schools of librarianship and their leadership has since been reflected in many

ways in the educational developments of the information professionals in other countries - such influence is particularly felt when one looks at the evolution of library education in one of their far south neighbours.

### 2.3 Early library education in Brazil.

There were some private and monastic libraries in the country during the seventeenth and eighteenth centuries, which were usually the collections brought by government officials and religious leaders from Portugal. But library history is generally considered to have begun in Brazil, as in most other Latin American countries, with the end of colonialism in the early nineteenth century. Until that time, printing was not allowed in the country - all books had to be published in Portugal - and this constituted a great obstacle for the growth of libraries.

The country's national library dates from 1810 and originated in the Royal Library (Real Biblioteca da Ajuda) taken by Dom João VI to Rio de Janeiro two years earlier. It was this institution which, a century later, was to take the initiative with regard to formal training of Brazilian librarians, and as it tried to follow the pattern set by the 'École des Chartes' - the whole educational system at that time was still greatly influenced by the French pattern - , the introduction of library education in Brazil was going to be markedly distinct from the beginnings it had in the United Kingdom and in the United States. One factor which contributed to such distinction was that Brazil did not have the strongly-rooted public library movement both countries had, and thus the pattern of training evolved at the National Library was geared

to the needs of academic libraries, and more particularly to the needs of its own staff.

In 1879 the library held its first examinations in order to select some of its personnel, and the subjects required included universal history, geography, literature, philosophy, bibliography, iconography, organization of manuscripts, and languages (translation knowledge of Latin, French and English).<sup>(40)</sup> As it can be noted from this list, the emphasis was more on encyclopaedic knowledge than on utilitarian techniques and routines of librarianship. The profession was in its first custodial stage, and the librarian was expected to be a scholar first whose special techniques and knowledge of the work were to be acquired through on-the-job training later.

The first attempt to provide formal institutional training for librarians came with the creation of a library school within the National Library, according to the Art.34 of the Decree n 8835 from 11th July 1911.<sup>(41)</sup> The first course started four years later with the following disciplines in its curriculum : bibliography, palaeography, diplomatics, iconography and numismatics.<sup>(42)</sup> Due to insufficient number of students together with administrative difficulties, the programme was discontinued from 1922 until 1931 when it was extended to two years with the addition of courses in literary history and cartography.

A major reform, led by Josué Montello, came in 1944, when the whole programme was reorganized into : basic, advanced and short courses. There was also a significant shift from the classical model provided by the French school already mentioned, towards the North-American pattern, which can be clearly seen in the subjects introduced in the new curricula - the basic programme included organization of libraries, cataloguing,

classification, bibliography and reference, history of books and libraries; and the advanced one offered the first three plus literary history together with an elective to be chosen from palaeography, organization of manuscripts, map organization, iconography, music librarianship or from any type of library, or still from any subject bibliography.

Such North-American influence had been strongly reflected in the second course established in 1929 at the Mackenzie Institute in São Paulo with the purpose of training the institute's library staff. This was the usual beginning of many library schools which were to come, i.e. they started as isolated courses to meet immediate needs for organizing libraries, then becoming permanent schools with most of them being later incorporated to local universities. The above-mentioned course in São Paulo led to the foundation of a library school in 1938 which is at present affiliated to the 'Fundação Escola de Sociologia e Política'.

The influence of the North-American pattern on library education in Brazil from the late 1930's onwards was greatly due to the fact that several Brazilian librarians at that time had studied in North American library schools. Many new concepts and ideas were brought back and put into practice sometimes without much consideration to local needs. We can see, for example, that the traditional disciplines in the curricula of Brazilian library schools like library administration, classification, cataloguing, bibliography and reference, history of books and libraries, strongly reflect the familiar core curriculum of library schools in the United States. But apparently it was not taken into account that in that country, library students had already had a basic general education at the undergraduate level, and so they could



afford to have this emphasis on technical subjects. Brazilian library schools, however, were going to offer both academic and professional studies at the initial level, and while they made provisions for the latter, there was much to be said for the academic side of their curricula. In order to help on this aspect some cultural disciplines had been inserted in the curriculum but elementary courses in literary history, philosophy, history of art, etc., have not proven to be the best of the solutions - it is hoped that the situation will be greatly improved with the new curriculum due to be introduced in 1982.

One positive aspect resulted from the influence of North-American practices was the placing of library training within institutions of higher education. From the 1940's onwards many other library schools were established at various regions in the country - in Bahia in 1942, in Campinas in 1945, in Rio Grande do Sul in 1947, in Pernambuco and in Minas Gerais in 1950. There are at present twenty nine library schools in the country offering the three or four year course leading to the bachelor of librarianship, which is the basic professional degree.

The affiliation with an institution of higher education has become the accepted standard for library schools although like their early North-American counterparts, they often lacked prestige and political strength within their parent institutions. But the profession began to organize itself from the 1950's and great progress has been reached since then.

At the 1951 meeting in São Paulo - jointly organized by Unesco and the OAS, to consider the development of public libraries in Latin America - it was proposed the realization of periodical congresses

which would provide Brazilian librarians and documentalists with opportunities to meet and discuss general concerns and issues. The first national congress took place three years later in Recife, and they have been held every two or three years since then. The scarce number of library periodicals together with the huge extension and uneven development of the country have made communication among professionals rather difficult, and so, congresses as well as other meetings and seminars have continued to play an important role in the formal and informal contacts between library educators as well as the other members of the profession.

A new impetus was given to library education in general and to the training of special librarians as well as to the bibliographical control of scientific and technological information in particular with the emergence of the 'Instituto Brasileiro de Informação em Ciência e Tecnologia - IBICT' em 1954 (it was then called 'Instituto Brasileiro de Bibliografia e Documentação - IBBD'). Its main function was identified in preparing personnel for working in special libraries and documentation centres, and in its first course started in 1955, it included subjects which at that time were not being taught in library schools, such as documentation standards and rules, mechanization of technical services, and even bibliography in different subject fields.<sup>(43)</sup> From 1964 the programme had its name changed to 'Scientific Documentation Course' and was accepting only graduate students, but it continued with its policy of receiving not only librarians and documentalists but professionals from other areas as well. There were also changes in its curriculum which in 1972 included the following subjects: techniques of bibliographic search, techniques of referral services, methods of information control and analysis, systems of information mechanization,

organization and administration of information systems, classification theory, and printing and reprography. (44)

One feature which distinguishes Brazil from England or the United States is the role and power of central and local governments with regard to educational matters, of all kinds and at all levels, and that includes education for the professions. There seems to have been no apprentice-based system of training as such when the need was first felt in the country for skilled personnel in the various fields. Institutional training soon became the accepted pattern, and isolated professional schools were the first higher education institutions established - the Royal Naval Academy was founded in 1808, the Royal Military Academy in 1810, and separate schools of medicine and law came later in that century. In the absence also of strong professional bodies which would formulate the standards and supervise the work being done by the schools, the government came in to play this role, mainly through legal provisions and 'recognition' of courses - a process similar to the North-American practice of 'accreditation'. Since 1961, for example, the Federal Council of Education has had the power of laying down and regulating the compulsory minimum curriculum for all undergraduate courses in the country. This includes not only the specification of the subjects to be studied but also the length of the courses, the total number of credits, and the time limits within which the prescribed number of credits should be completed. Obviously the views of the profession concerned and the schools are reflected in the Council's decision for usually the original proposals come from committees made up of members drawn from professional associations and schools, and also the Council has among its membership many representants from the universities and

professional schools of the country. This process is however strongly criticized especially on the grounds that it takes out much of the educational and administrative autonomy of Brazilian universities and equivalent institutions. It is also the general opinion in the professions that the official bureaucracy of the Ministry of Education often delays the whole process for far too long - usually for many years - and thus prevents changes which are immediately needed.

On the other hand, it must be recognized that having a compulsory minimum curriculum for all undergraduate courses - particularly in a country with immense regional differences like Brazil - is an effective means of maintaining educational standards on a national basis. There is also the further aspect that professional schools can always enrich their curricula by adding other courses according to their local needs and specialities of their teaching staff.

With regard to the minimum curriculum for library studies, discussions had been initiated at the already mentioned first national congress in Recife and the efforts of those who were involved were rewarded eight years later : librarianship was recognized as a profession in Law 4084 of 30 June 1962 which also restricted its practice to graduates of recognized library schools at the higher education level. Unfortunately it cannot be said that it has been really worked in practice for, to start with, the number of qualified librarians is not sufficient for the country's present demands. According to the figures provided by the Federal Council of Librarianship there were 6.657 registered librarians in the country in 1976<sup>(45)</sup> when the total population was about one hundred million. This makes an average of one librarian for fifteen thousand people which is not considered adequate

for the current state of development of industry, commerce, education, research and technology in the country.

The Federal Council of Education's parecer -no.326/62 fixed a three-year programme for librarianship, and the following courses as parts of the minimum curriculum : history of books and libraries, history of literature, history of art, introduction to historical and social studies, evolution of philosophical and scientific thought, organization and administration of libraries, cataloguing and classification, bibliography and reference, documentation and palaeography.<sup>(46)</sup>

There has been so many comments and criticisms in the country, about this programme for so many years now that it is difficult to think that there might be anything new to say on the subject. Only one year after its official approval, in a paper presented at the fourth Congress of Librarianship and Documentation in Ceará, F.L.M.Carvalho voiced her dissatisfaction with it pointing out that it included many irrelevant subjects in detriment of essential ones like, for example, book selection as a discipline on its own.<sup>(47)</sup> Another library educator has recently dealt with this subject in her doctoral thesis, and in addition to a brief survey of the views being published in the last few years, she interviewed ten library school lecturers about the 1962 minimum curriculum as well as "the problem of the connection between library education and Brazilian society."<sup>(48)</sup> The general criticisms seem to be : the obsolescence of the present curriculum structure; its over-emphasis on technicalities in detriment to the basic principles; the compartmentalization of the disciplines within the curriculum and the lack of an integrated approach to the activities and services of librarianship as a whole; and the unconnection of library education

with the Brazilian social context. The author emphasized this last aspect pointing out that all these criticisms converge to the following central point:

"Library education in Brazil has been uncritically transplanting foreign models without taking into account the conditions and peculiarities of the local environment. As a result, this education has become far removed from the realities of the country and has influenced library practice and services which, in turn, are not relevant to society."<sup>(49)</sup>

Despite its present weaknesses, it cannot be denied that the establishment of the 1962 minimum curriculum and the passing of the Law n.4084 represented a major contribution towards placing library and information studies definitively at the higher education level, and towards the recognition of librarianship as a profession in Brazil - although it cannot be overemphasized that legal recognition has not quite been followed by social recognition. It also encouraged the establishment of new library schools and professional associations - the period from the mid-1960's until the present can be said to be the coming of age of Brazilian librarianship.

Given the role played by the government legal agencies, the Brazilian library associations have not been involved with the formal education and training of their members but rather with their <sup>o</sup>post qualification or continuing education. The specialist groups and sections within associations are normally engaged in the provision of specialized and updating short courses. Other concerns of professional bodies include the development of standards of provision for library services, the improvement of working conditions, salary levels etc. Despite their efforts to act as pressure groups, their political representation for the profession is neither strong nor effective, and

the main reason for that seems to lie in the low number of their membership. It is not compulsory for a newly graduated professional to become member of a library association in Brazil. According to the decree no.56.725 of 16 August, 1965, the supervision of professional practice and the register of qualified members are responsibilities of the ten regional councils of librarianship (CRB-1/10) spread throughout the country.

Generally speaking the present moment is one of optimism for Brazilian library education. The profession has already seen some effects of the recently established post-graduate courses, and great changes are envisaged for the undergraduate programme. There is a new curriculum proposal which, if officially approved, is expected to be adopted by library schools from 1982. According to its planners, it attempts to place the library more within the social communication process and so to make the profession more relevant to the country's informational needs. The knowledge suggested to make up the curriculum was drawn from: a) the institution where the information system is placed and the social environment at large; b) the tools and materials used for information handling; and c) the user and operator of information systems. (50)

In order to avoid the traditional compartmentalization of the disciplines as well as to provide library schools with flexibility when building up their total curriculum, the new programme is structured around three broad groups of subjects:

- Foundation subjects : communication, sociology, economics, politics, social psychology, logic, and Portuguese language;

- Instrumental subjects : statistics, and methods and techniques of social research;
- Professional subjects : information user, planning and administration of information systems, production and bibliographic control of information, collection building, processing and dissemination of information. (51)

The proposal includes guidelines on the topics but details of content will be worked out by each library school taking into account regional needs and characteristics, its human and material resources, as well as the students' needs and interests. The project also specifies the length of the programme - 2,880 class-hours spread from a minimum period from three to seven years - , and that the practical training should consist of ten per cent of the total time allocated to the minimum curriculum.

As it so often happens in other areas, the successful implementation of the new library curriculum will greatly depend on the approach adopted by each school, whether the emphasis is placed on principles or on techniques, as well as the way subjects are presented and the methods by which they are taught.

With regard to information science education, it has been generally regarded in Brazil as a development of librarianship, after having passed through a period when it seemed that both disciplines were going to follow separate ways. Since the mid-1950's there had been growing interest in documentation and information science in the country - although the 1962 library curriculum does not seem to have taken it into account - , and the IBICT was the institution which became most concerned with the provision of courses in this area. In addition to the specific courses already mentioned, the IBICT - in



agreement with the Federal University of Rio de Janeiro - established in 1970 a postgraduate course on information science for the M.Sc. which was the first of its kind in Brazil and in Latin America. Initially the programme focused on the planning and operation of information systems with special attention being given to the theoretical and practical aspects of information storage and retrieval. In order to teach these subjects at an advanced level, the Institute reinforced its teaching staff during the first few years by bringing specialists from the United States and England. At the core of the syllabus were the following subjects : information retrieval systems, systems of classification, automation in library processes, indexing and abstracting, organization of specialized information centres and services. In addition, students had to select three options among: automatic language processing, theory of communication, research methodology, epistemology, didactics, programming and mathematics. After successful completion of the course work and examinations, the student would have the subsequent year to complete a thesis.<sup>(52)</sup> In 1974 there were some changes in the course structure which passed to centre around three basic areas : users, administration of information/documentation services, and information transfer. In the next change in 1977, user studies were dropped as a specific area and put as optional disciplines so that students from the other two areas could include them among their chosen subjects.<sup>(53)</sup> Many of the IBICT's students have been teachers at other library schools - over half of the forty seven who graduated until 1978<sup>(54)</sup> - and with them returning to their previous teaching posts, more information science elements have been introduced into their own library school curricula, and this

in turn, has contributed towards the integration of both subjects.

It seems unfortunate however that the passing of legislation restricting the practice of information work to those graduates of library schools represented a setback for the courses at IBICT. This question of limiting postgraduate courses to those who have a bachelor's degree in the same subject is not a peculiarly library problem but it has been the focus of much discussion among Brazilian library educators as well as of visiting foreign experts. H.E.Gomes & C.R.Zaher in 1972 pointed out that with such legislation the non-librarians who were doing the courses at IBICT would have difficulties in finding suitable working positions in the library and information field, especially in the public sector. Also that the profession would then be deprived of high level personnel who could otherwise greatly contribute for the development of the scientific documentation in the country.<sup>(55)</sup> Prof.P.Havard-Williams who visited the country in 1975, also disapproved such situation mainly on the basis that it would "slow development and make teaching more and more esoteric, rather than drawing bright students to different postgraduate courses, enabling them to broaden their vision and to grasp the essentials of a new subject at a more advanced level."<sup>(56)</sup>

It seems fortunate that IBICT and most of the other postgraduate courses have been accepting graduates from outside areas, and in some cases arrangements have to be made so that students can meet the entrance requirements by taking some library courses beforehand.

The other postgraduate programmes in library and information studies being presently offered in the country are:

1. The master's course on library administration at the Federal University of Minas Gerais which started in 1976 and has two central areas : 'Library and Education' and 'Library and Specialized Information';
2. The master's course at the Pontifical Catholic University of Campinas which started in August 1977 with the central area of 'Methodology of Teaching Librarianship' - a second area is presently under study.
3. The master's course at Brasilia University which started in March 1978 and has two central areas : 'Planning, Organization and Administration of Information Systems' and 'Resources and Techniques of Documents and Scientific Information';
4. The master's course at the Federal University of Paraiba which started in August 1978 with the central area of 'Public Library Systems';
5. The Department of Librarianship and Documentation of the School of Communications and Arts at São Paulo University is about to start a programme leading to the award of Ph.D. in library and information studies. It will be developed along two main lines : a theoretical approach to include information theory, cybernetics, and linguistics, and a practical one to examine the decision-making process, problem-solving techniques, organization and user studies. (57)

As R.C.Benge pointed out library schools, especially in those countries where the profession is new, should be able to offer degrees up to the highest level because "it is at the higher degree level that a beginning can be made in the investigation of local circumstances." (58)

It is hoped that such investigation has truly begun in library education in Brazil. Some positive effects from the postgraduate programmes have already been felt, particularly in the emergence of a new professional

leadership in the country, in the final decision taken towards changing the 1962 undergraduate curriculum, and also in the development of a body of library literature in the Portuguese language - practically non-existent until the 1970's. Most of library school teachers had not been active in writing or research, and this was mainly due to time pressures of part time teaching and the lack of financial support. With the establishment of more full time courses, the financial assistance from bodies like CAPES and CNPq, and the research currently being done by postgraduate students - there is a good number of master's dissertations already completed and others in progress - library educators are expected to become more involved in research and so contribute more effectively to the building-up of a library literature so badly needed especially for teaching purposes.

With regard to archival education in Brazil, it has been also generally related to library education although it finds itself in a more rudimentary state of development. Despite past legislation, many projects and attempts, there seems to be no formalized course of instruction in archival studies at present for those aiming at entering the profession, mainly because the projects of courses were not put into practice, or the courses started had no continuation. Most of those who have taken the archival career, have acquired their professional knowledge on the job, supplemented by attendance at short courses and workshops.

The institutions involved with the provision of such courses are basically : a) private firms and industries which aim specifically the training of their employees; b) some library schools which, for the last six or seven years, have been including archives studies in their

curricula either as part of the compulsory core or as optional subjects; and c) the National Archives itself which was founded in 1838 and has since been providing archival courses - albeit on an irregular basis - first for its staff and later for outside personnel as well.

It has already been mentioned the role of government legislation on educational matters, and while in other countries a decree or law is passed to consolidate a situation which already exists in practice, legal provision in Brazil is commonly designed to elicit such situation - which unfortunately not always happens. Referring to the training of professional archivists, L.G. Fontes pointed out in 1977 that "Brazil is a country with plenty of Decrees which have never been put into practice."<sup>(59)</sup> We can see her point when we look back at the early archival training in the country.

The first of the decrees which never actually came into force was the one n.9.197 of 9/2/1911 which established a course on Diplomatics to be taught once a week in the National Archives. The programme would include palaeography, chronology, critical history, diplomatic techniques, and classification rules.<sup>(60)</sup>

The next project for an archival course came with the Decree n.15.596 of 2/8/1922 whose purpose was to train the staff of the National Archives as well as the National Library and the National Historical Museum. It would be a two-year course with the following subjects as part of its minimum curriculum:

1st year : literary history  
 palaeography and epigraphy  
 Brazilian political and administrative history  
 archaeology  
 history of arts

2nd year : bibliography  
 chronology and diplomatics  
 numismatics and sigillography (61)  
 iconography and cartography

Nevertheless the National Archives seems to have continued to hold short technical courses, but it was only after its regimental reform in 1958 that courses were started to be run on a regular basis. From 1959 onwards there were two different types of courses : the short courses on 'archival techniques' - lasting four months and opened to candidates with a secondary school certificate - , and a 'permanent course on archives' - lasting two years until 1974 when it was then changed to three years.

The first Brazilian Congress on Archives, gathering about 1,300 archivists, was held in Rio de Janeiro in 1972. Following its recommendations, the Federal Council of Education two years later recognized archives as a higher education field of study and approved the following minimum curriculum to be included in the training of professional archivists :

Introduction to the study of law  
 Introduction to the study of history  
 Notions of accountancy  
 Notions of statistics  
 Archives I - IV (including conservation and restoration of documents, modern records, historical archives, special archives - audiovisual -, and technical archives - medical engineering, etc.  
 Documentation  
 Introduction to management  
 Administrative, economic and social history of Brazil.  
 Palaeography and diplomatics  
 Introduction to communication studies  
 Notarial studies  
 A modern foreign language. (62)

It was also specified that the course should have a minimum of 2,160 class-hours spread over a period from three to five years,

including the practical training which should account for ten per cent of the course's total number of hours.

The National Archives' 'permanent course on archives' adopted the specifications legally recommended and with the 'university mandate' granted by the Federal University of Rio de Janeiro, the new programme began in the second semester of 1974. It seems, however, that it has shortlived for, according to L.G.Fontes, the course ran into a crisis and was discontinued in 1976.<sup>(63)</sup>

Considering the numerous unsuccessful attempts in the past, future archival education in Brazil is likely to be influenced by recommendations such as the ones provided by the 1974 Intergovernmental Conference on the Planning of National Documentation, Library and Archives Infrastructures, which called for a closer co-operation and co-ordination in the development of professional curricula for librarians, information scientists and archivists. In fact, it was after this conference that Brazilian library schools started making some provision for archival studies among their curricula - they constituted twelve out of the twenty seven existing schools in the country in 1977. A Regional Meeting of Experts for the Development of National Archives in Latin America was held in Bogotá (Colombia) from 29 March to 2 April, 1976, in order to examine the feasibility of establishing and developing national archives systems in Latin American countries within the framework of NATIS. It was then recognized that the organization of archives in all these countries has been largely inefficient as well as neglected by authorities, and also that there was a vital need of adequately trained personnel in order to bring about the important role which archives can play in the economic and social development of a nation.

It is with these educational needs in mind that an examination of international programmes and concepts like UNISIST and NATIS can be useful when planning programmes for information manpower in Brazil and other Latin American countries.



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3. The concepts of National Information Systems (NATIS), and of a World System for Information in Science and Technology (UNISIST)

3.1. Information and its role in today's society

Practically every creature living in this world needs information of some kind or another and was endowed by nature to receive it and act upon it. Eyes and ears give animals a wide scope of interaction with their environment which, together with the physical contact or touch, provide them with means to survive, such as access to food, early warning of danger from predators, conditions to raise their young, perception of the change of seasons - leading, for example, to the emigration of birds during the winter, etc. Man's information needs, however, go beyond the meeting of his own physical needs or his family's. He will seek information in order to solve problems or to make any decision in his professional, social, intellectual and leisure activities. It is an important element to the student in his learning process; to the doctor or any other professional for general working purposes as well as for updating and reorientating him to new developments in the field; to managers and policy makers as well as to governments for decisions in the various sectors of public life such as environmental and planning, law, education, health, etc; to industries which need information for their major internal decisions such as market research for launching a new product, figures of production, sales, wages and salaries, etc; to schools and many other dynamic institutions in modern society. But man seems to have surpassed other animals in that his mind is naturally inquisitive and will make him try to get information for intellectual satisfaction alone, or he'll do it in order to get something out of it - like money or social prestige - or even to dominate or hold power over other men. He also seems to be the most privileged of them for, in

addition to his personal attributes, he is able to manufacture devices as artificial extensions to his sensory organs for storing and processing information.

Although the studies about how, why and the ways by which men acquire information, as well as the ways in which it is disseminated throughout society and its impact upon it are relatively recent - from the last thirty years or so - we can learn from history the importance of information in past civilizations and its close links with power. From the ancient times of the great Library of Alexandria, we have the example of the Pharaoh and his painstaking effort in collecting all existing material at that time, from all possible sources. He is known to have his men enquiring at every ship which arrived at the harbour and if it carried any documents, these would be copied and sent to the Library. Another example may be found in the strong political position enjoyed by the Catholic Church during the Middle Ages and its control over the existing knowledge, since its monasteries were the principal reservoir of learning in the Western World during those centuries. A third illustration may be pointed to the attention and resources given to scientific research in Germany and England since the late 1700s. The resulting output in information in such areas as chemicals and pharmaceutical industry, and in equipment and heavy industry in each country respectively, has played a major role in the development and leading positions of both countries from the Industrial Revolution until today.

The various definitions and interpretations of the word 'information' are well focused elsewhere in the literature.<sup>(1-10)</sup> We will accept it as being 'knowledge or news given'<sup>(11)</sup> and although it "can be freed of the human component"<sup>(12)</sup> it is inert, having no meaning in itself unless communicated by human agency. Together with the familiar natural resources

of matter and energy, information has been regarded nowadays as a basic element which should be put at the service of all sectors of the community.

A new concept which came about recently is to regard information as a commodity which users would be prepared to pay for according to its value to them. Looked at this way, information handling - from its production to its final destination - would be governed by economic laws. This approach, if proved right, would provide a relatively simple way of determining what should be done about information. But the whole process does not look so simple, especially because most of the time it is only possible to discover whether some information is of any use to someone after he has acquired it. One good example can be seen in school and public libraries helping in literacy schemes through the promotion of the reading habit. The main intention is to provide encouragement to reading, and the information supplied by this reading is of secondary importance. Thus, it is very difficult to evaluate such information in any financial terms. In many other cases the information needed is to examine some theory or to facilitate some practical development, when it is of no immediate value. It may be later used by someone else for producing wealth or power - which also poses difficulty for any financial assessment. This, perhaps, was the case with the theoretical and experimental research which led to the development of the atomic power in our contemporary society. The conclusion seems to be that information is not a commodity which can be measured in units - say, like a car or a house - to which can be given particular values. Research in some developed countries-which have been giving attention to the subject for some time now-has shown that the output from well-organized information services and research have been greater than the total cost of providing for them. Nevertheless, economic consideration - which must not be left aside, - should not be used as the sole basis for making decisions on information programmes.



The thinking behind this proposition, as well as from those who support the establishment of charges for the provision of information in public libraries, is that users will give greater value to libraries and information services, and press for improvement if they pay for those services. That may not be always the case, and besides being against the principles of an egalitarian society this approach would not be fair with those in less privileged conditions and who are likely to be the ones with greater need for information. At the national and international levels economic inequalities are already a barrier to the free flow of information with the developing countries having to bear higher costs mainly because of their own less favourable situations.

There seems to be no need for believing that people have to pay for information in order to appreciate it. It has been recognized as a resource of vital importance in most countries where complex information systems have been created to meet the needs of scientists, engineers, administrators and those working in the socio-economic fields. Ordinary citizens also must have access to the information they need because well-informed they can better cope with the problems of everyday life, make the right decisions and improve the quality of their own lives.

The trend towards a progressive society, symptomatic of the more highly industrialized countries, strongly appeals to the developing ones. They cannot afford to overlook the positive consequences and the improvement in the standard of living of their own communities which will result in the overall development of themselves as nations. On the other hand, the mentioned progress and development are according to the pattern offered by the developed Western world, which at the moment, for good or for evil, seems to be the only alternative available. It may be rather late, for example, for the traditionally oral societies of African

countries to ask themselves the worth of reading and writing in their lives, for according to assessment parameters of Western societies they would be illiterate and backward people if they didn't learn to express themselves in graphical forms. The fact is that the present stage of advancement in communication and transport technology does not allow a country to be isolated and do things in its own way - physical boundaries have become blurred and the world has become, to a certain extent, a single community.

That does not mean to say that all countries are on the way to an equal level in the world scale. A uniform situation is far from real at the moment. What can be assumed from the present efforts of governments, international organizations and people concerned is that the gap between developed and underdeveloped nations which has been growing wider and wider can be brought to a minimum under certain conditions and if essential requirements are met by these underdeveloped areas. One of these requirements is the free flow of information through all sectors of the community which need it.

There seems to exist a direct relationship between the informational structures and bibliographical services existing in a country and its overall development. "Information", said J.G.Lorenz, "is one of the most important and powerful resources existing in the world today. But there is a great disparity in the quantity, quality and degree of sophistication of information available in the many countries of the world. This is one of the basic reasons for the great disparity in economic, social, educational, scientific and technological development between the developed and developing countries. If these disparities are to be reduced substantially and eventually minimized, international transfer of information will need to be greatly improved and developed". (13)

This is the basic principle underlying both Unesco's programmes NATIS

and UNISIST, namely, to help countries in the establishment or improvement of their information systems, so that they can reach their full potential development which will reflect in the betterment of their citizens' lives as well as in the world community as a whole.

### 3.2. The origins and concept of NATIS

The old ability of man to record his thoughts and observations and make these records available to whom they may be of value has become more difficult in the last thirty years because of the growing volume of records and the growing complexity of human society. It is now common to collect figures of all kinds in an attempt to prove what has been called "the information explosion". And whether it is a real "explosion" or not, the information problem exists now in all subject fields and involves all types of records, both published and unpublished, and it is concerned with the creation and maintenance of literacy as well as the more sophisticated services required by scientific research. This problem has brought changes in the views and approaches used to handle information everywhere. The developed countries are seeking ways of achieving greater efficiency in the utilization of their accumulated information, especially through co-ordination of existing documentation, library and archives services while also recognizing the need for information networks at the international level for hardly any country can boast itself as self-sufficient in the information field. The developing countries, on the other hand, have been examining the need for more systematic planning of their information infrastructures with the creation of these services or the improvement of their indigenous capacities.

The need for co-ordination, cooperation, infrastructures and other problems involved in the establishment of information systems had been

examined in four regional expert meetings organized by Unesco: for the Latin American countries in Quito, Ecuador, 7-14 January 1966; for the Asian countries in Colombo, Sri Lanka, 11-19 December 1967; for the African countries in Kampala, Uganda, 7-15 December 1970; and for the Arab States in Cairo, Arab Republic of Egypt, 11-17 February 1974, as well as in other sub-regional meetings. With a view to generalizing the findings of these meetings, the Intergovernmental Conference on the Planning of National Documentation, Library and Archives Infrastructures, organized by Unesco, in cooperation with the International Federation for Documentation (FID), the International Federation of Library Associations (IFLA) and the International Council on Archives, met in Paris from 23-27 September 1974. Its purpose was "to provide a framework for governments of Member States in various stages of development and with different social and political structures, to exchange views and experience on the co-ordinated planning of national documentation, library and archives policies, methods and services over the whole range of human activities, that is the humanities, culture, sociology, economics, law, administration, and the pure and applied sciences".<sup>(14)</sup>

The focus of the Conference was on certain basic issues involving planning policies and methodology: the planning of the infrastructure within the framework of the country's overall development planning, the application of relevant technology and the planning of manpower necessary to run the services. Information infrastructures was later identified as "that complex of institutions, organizations, resources and systems and services which support flow and delivery of information from the generator to the users"<sup>(15)</sup>, and it should be created and developed in each country which wished to participate and fully benefit from international programmes. The elements of such an infrastructure, according

to the NATIS Conference, are understood to be:

- (a) the users of information or all those people involved in political, scientific, economic, educational or social activities who need information in order to make their contribution to society;
- (b) the physical information resources or the libraries, archives, documentation centres and all organizations designed to permit the transfer of information to the users;
- (c) the qualified manpower, or the personnel who organize the information and make it available to the users.

All three parts of the system must be equally developed if a balanced information infrastructure is to be achieved.

At the end of the Conference, all 254 delegates from 86 Member States of Unesco and the 63 observers unanimously supported the concept and objectives of national information systems (NATIS). This concept implies that "the government - national, state or local - should maximize the availability of all relevant information through documentation, library and archives services just as in principle it takes responsibility for the basic education, at primary and secondary levels, of its citizens"<sup>(16)</sup> and it encompasses all services involved in the provision of information for all sectors of the community and for all categories of user. To leave each government department, profession, industry, university and research institute to decide its own information policy may lead to unco-ordinated and wasteful provisions of information. The planning of information services should be made at national basis, and as part of the educational, scientific and cultural planning of a country, it should be integrated into its overall and sectoral development plans. Each country, then, would formulate its integrated plan of information services according to its human and material resources available, its information

needs, and taking into account the national, cultural, economic, social and other factors. The precise form and character of NATIS will vary in different countries, but co-ordination of all its elements must be the common goal.

Although designed according to national characteristics, the planning of documentation, library and archives programmes in a given country must be made also within an international context. This planning must take into consideration the agreements, recommendations, norms and guidelines already achieved by international meetings and institutions, concerning, for example, international formats, abstracting and indexing rules, exchange of publications, contents evaluation, library statistics, as well as international programmes like those set up by the United Nations agencies such as UNISIST, AGRIS, INIS, UBC and UAP.

The Conference also adopted recommendations which were subsequently approved by the General Conference of Unesco at its 18th session when the Director-General was authorized to issue to Member States, after due consultation with FID, IFLA and ICA, general guidelines for the implementation of NATIS. The Unesco Department of Documentation, Library and Archives, then, prepared an outline of the guidelines for national action needed to achieve the 12 NATIS objectives which will enable governments to establish or improve the information systems in their countries with a unified sense of direction in order to, not only to benefit from a world system, but also to make the country's own information propriety fully available to all its population. There was also a long-term programme of action to be taken by Unesco and other international organizations in order to assist Member States in the planning and establishment of their national information systems, and which was gathered in four other objectives.

### 3.3. NATIS: Objectives for national and international action

The above-mentioned NATIS 16 objectives may be summarized as follows:

1. A national information policy should be formulated to guide the establishment of a national information plan and the ultimate aim of such policy must be an informed society. The underlying principle is that information is an essential part of a nation's resources and access to it is one of the basic human rights. The personal, vocational and social development of the individual depends on the amount and quality of information available to him when needed.
2. Stimulation of user awareness is important if NATIS is to reach its optimal efficiency, for not all potential users in the community may be familiar with the information resources available in the collections of documentation, library and archives services. Instruction in the use of libraries should be offered from the primary school until the university level with the content of these programmes being expanded as the advance progresses through the educational system. These efforts should be extended also to professional life where research workers should be encouraged to seek and use specialized literature and sources of information.
3. Promotion of the reading habit is another requirement of NATIS since books have an essential role to play in the educational development of the individual. School and public libraries can help the individual to acquire the "functional literacy" by providing the appropriate reading materials and by extending library services to potential readers in rural areas as well as responding to the changing needs of their readers.

4. Assessment of users' needs - Before the establishment of policies and programmes and in order to know how information can best be applied to serve development, there must be first an identification of development goals and what are the information requirements for them. Each country has special needs of its own and initial and periodical surveys should be made to establish what these needs are, so that NATIS elements can offer the type and quality of service hoped for by users in government departments and in such areas as industry, research and education. These needs should be seen in terms of breadth of coverage, in the depth needed and sometimes in precise terms needed for research groups. This objective also calls special attention to the need for the scientific evaluation of the literature and data, and for the analysis of documentation in depth, as well as for the popularization of information.
5. Analysis of existing information resources, i.e., surveys of existing national documentation, library and archives resources are an essential prerequisite for forecasting future needs and for preparing a long-term development plan.  
The surveys should analyse the extent to which new technologies are being applied in the country, and the devices being utilized such as computers, audiovisual materials, etc. This NATIS objective specifies that the level of technology should be consonant with the manpower and financial resources available in the country.
6. Analysis of manpower resources should be made, again through surveys, in order to determine the availability of trained personnel at the various levels of professional and non-professional duties



in face of the estimated growth of information activities in the country. The national plan for information services will give some orientation in terms of number and quality of personnel needed, having regard to international and other accepted standards.

7. Planning the organizational structure of NATIS is left for the governments and concerned institutions of the country, which will establish the appropriate organs, designate responsibilities and priorities. The Conference recommended, however, that all documentation, library and archives services should be coordinated through a central body (or bodies) to form the national information system.
8. Supplying manpower for NATIS. As mentioned earlier on, this was one of the three basic issues focused by the Conference. It advised that "National institutions and programmes of professional education for information manpower should be established as integral parts of the national educational structure at universities or equivalent institutions of higher education, and as the principal means of supplying adequate numbers of professional staff to meet the demand for qualified personnel at various levels to operate the national information system (NATIS)".<sup>(17)</sup> Such programmes should include initial courses and advanced studies as well as specialized courses to provide for continuing education and training. In recommending the promotion of effective co-operation between all types of services within the system and the fully maximization of its resources, it emphasized that documentation centres, libraries and archives should not be thought of as isolated units, but brought together, reflecting an encouragement

for all information personnel to work closer together as well. Of special importance in the context of this work is its recommendation to adopt a core subject area as a guide for preparing basic professional curriculums for information specialists, librarians and archivists, and reference to such a core will be made in subsequent chapters.

9. Planning the technological needs for NATIS should be included in the national information plan with the aim of achieving maximum utilization of resources available and of reaching compatibility and standardization. Such a planning is even more important considering that technology is expensive, complex, specialized - needing especially-trained personnel to operate it - and innovative, in which it may alter traditional ways of doing things, requiring a sensible assessment of system performance and bringing attention to the problems of user re-education.
10. Establishing a legislative framework for NATIS is one of the prerequisites of a strong national infrastructure. This objective warns "because the benefits of information services are not easily identified, though none the less very real, individual elements of the information infrastructure which is not based on a secure legal foundation may on occasion become vulnerable targets for reductions in the budget".<sup>(18)</sup> Appropriate legislation can ensure the legal deposit of national publications; it can facilitate the exchange of all types of documentation by removing administrative barriers to the free flow of information; it can accord similar status to information professionals of equivalent educational level of professionals in other fields as well as make provisions concerning the equivalence of examinations and diplomas

with other countries; and so safeguard the nation's archival heritage against all endangering factors and to permit the access to archives that are no longer classed as confidential.

11. Financing NATIS or providing the expenditure required for the operation of all the elements of the national information systems pertains to a greater degree, to the State, which, especially in developing countries, may have agreements with the various sources of international aid such as the United Nations agencies, the UNDP or bilateral arrangements with other countries. Three targets were suggested for financial provisions: inclusion of all costs with NATIS in the country's overall development plans; harmonization of the total allocation of resources, whether from internal or international sources; and the development of adequate salary structures for the professions involved in information work.
12. Universal Bibliographic Control aims to achieve the universal availability of basic bibliographic data on all publications issued in every country. The UBC's concept requires that each participating country should make a record of each publication as it is issued; to produce and distribute in an internationally standard format the bibliographical entry; to receive and distribute similar records received from other countries; and to integrate national output into international matrix. Closely linked with UBC is another programme also launched by IFLA, namely, UAP - Universal Availability of Publications, since it makes little sense to offer the basic bibliographic data if the publication itself may not be available for use. This concept was included among the NATIS objectives because the document availability is an essential feature of any national information system.

These are the objectives designed to provide a framework for concerted action for those countries which accepted the concept of NATIS. For many of them the launching of the system itself will require financial and technical assistance from national and international sources. Unesco, therefore, proposed a programme of action to be taken with the cooperation of the international non-governmental organizations specialized in documentation, library, archives and related fields crystallized in the following four objectives:

13. Assistance to Member States for the planning and development of NATIS will include projects and activities from Unesco which suggested priorities to be given to: the elaboration of methodologies in the various phases of planning and developing NATIS; the promotion and advice for the application of information technology to documentation, library and archives services; and the outlining of a general framework of the programme for professional education and training of information manpower. Once again a unified approach is brought to attention for among the basic elements of this programme is "the harmonization of curricula for documentalists, librarians and archivists". (19)
14. Promotion of Universal Bibliographic Control with a view to create a world-wide system for the control and exchange of information, was recommended to be done by Unesco and IFLA mainly through the organization of meetings to study the problems connected with it. An International Centre for UBC was set up in London which is able to provide all technical information dealing with problems of national and international bibliographic control.
15. A long-term programme of action to be elaborated for Unesco to assist Member States in the planning and establishment of NATIS. This programme would have great flexibility to allow for the

different needs of documentation, library and archives services in different countries, emphasizing those projects which effectively contribute to national development plans.

16. Convening of an intergovernmental conference in 1978 was the last recommendation of the 1974 Conference so that NATIS, UNISIST and UBC programmes could be evaluated and plans laid down for the future. (Whether the introduction of the General Information Programme or the other administrative changes within Unesco brought changes to initial plans for NATIS is not known, but the fact remains that such a conference has not been held so far).

#### 3.4. The origins and concept of UNISIST

The acronymic term UNISIST stands for a 'World Scientific Information System' but it was intended, from the beginning, to stimulate and guide development of and cooperation among scientific and technical information services at the national, regional and global levels. The principles on which it is based are applicable not only to the scientific and technological fields but to all fields of human knowledge, so much so that a few years later, it was extended to the fields of education and social sciences in addition to its initial areas of concern, namely the basic sciences, applied sciences, engineering and technology. It was established within Unesco as an intergovernmental programme and had its origins in the late 1960s when both the International Council of Scientific Unions (ICSU) and Unesco expressed concern about the existing unco-ordination in the handling of scientific and technical information which was affecting the traditional exchange of information in that area. A feasibility study was carried out by a Unesco/ICSU Central Committee

created in January 1967 and its Report was published by Unesco in the same year containing the initial set of objectives and structure of UNISIST which was officially launched by the Unesco General Conference in January 1973. Six years later, the Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II) was convened by Unesco with the purpose of reviewing developments since the first Conference in 1971 and to make recommendations on future activities. While many basic aspects of the structure of the programme have remained constant, the changing needs of Member States have brought about an evolution of programme priorities. Two areas, for example, those relating to the development of information structures and to education and training have maintained their pre-eminence, while the objective on tools of systems interconnection received no longer the very top priority it once had but was given "special importance" by the Intergovernmental Council "as a prerequisite for successful implementation" of the programme as a whole. (20)

The concept of a world information system is not original in the 1970s. As in any other field of human knowledge, there is some internal coherence and orderly creative growth in the information field with each professional or generation of professionals drawing and building upon the findings of others, and today's new developments being made possible by yesterday's information. The Study Report on UNISIST, giving a historical background of the study, quoted many examples of suggestions of the setting-up of world pools of scientific information on several occasions in the past. The Royal Society, for example, was undertaking a 'Manuscript Catalogue of the Titles of Scientific Periodicals in All Languages' in 1858; and forty years later it suggested the project of a catalogue dealing with the original documents themselves, which resulted

in the 'International Catalogue of Scientific Literature', referred to as "the most comprehensive cooperative effort among scientists to record and organize their literature on a world basis".<sup>(21)</sup> Among other examples is the 'World Fair' proposed at a convention of librarians in New York in 1853 which aimed at a permanent system of exchange between governments everything published in a country; and the 'World Encyclopedia' invested with the duty to produce "intellectual syntheses" of all kinds suggested by the writer H.G.Wells in the 1930s. The real precursor of UNISIST, however, can be said to be the international Institute of Bibliography (later International Federation for Documentation) founded by Paul Otlet and Henri La Fontaine who laid the basis for an international system for world documentation at their historic meeting at Paul Otlet's house in the rue de Florence, Brussels, in 1892. La Fontaine was already engaged in gathering documentary material upon the social sciences and then, both started to collect a comprehensive card/ subject-index. The sequence of events from then on is well-known: the idea of a universal index and the requirement of international cooperation; the calling of the first International Conference on Bibliography in 1895; and the adoption of a standard classification system for the world's recorded information. The initial purpose of preparing a complete collected bibliography proved to be utopian especially because the need for a comprehensive index was not yet widely realized and so the work was later limited to the field of science and technology. Scientific information centres were established in connection with several large scientific libraries in Holland, England, Switzerland and Germany, and smaller services were developed in some other countries, spreading the concepts of cooperation, coordination and standardization in the information transfer at international level and

paving the way to future programmes such as UNISIST. What was going to be eventually a successful enterprise, had hard beginnings for its pioneers. In the words of S.C. Bradford, "Almost every possible mischance befell them: loss of funds, expulsion from their premises, destruction of their archives, widespread ridicule and spurious imitation with the highest backing. Only their unshakable conviction, indomitable courage and steadfast determination, enabled Messieurs Otlet and La Fontaine to outlive the storm and remain, at last, the masters of a strengthened structure".<sup>(22)</sup> While the 'Bibliographie Internationale' envisaged by the Institute International de Bibliographie was the most obvious antecedent of the UNISIST programme, scientists and librarians in the twentieth century have been concerned about the difficulties of controlling bibliographical materials in the sciences and technologies. In 1948, for instance, the Royal Society organized a conference on the problem and made significant recommendations which presaged the International UNISIST Conference.

The UNISIST programme, then, emerged especially out of the pressure from scientists, researchers and publishers at a period of great technological change and an uncoordinated development of information systems and services which were mainly at the service of developed and technically advanced countries leaving the developing ones at certain disadvantaged positions with regard to access and use of scientific and technical information. It may be identified as a system of systems which does not intend to set up a new machinery but rather to serve as a catalytic element among the information agencies and scientific organizations committed to improve the flow of scientific knowledge throughout the world. It was described by members of the ICSU/Unesco Central Committee as a "flexible international network integrating on a voluntary basis, scientific information services in existence and eventually those to be created"; or "a realistic, decentralized and loosely connected world-wide system or network based upon a significant increase of voluntary co-operation



among science information services in various disciplines, languages and countries".<sup>(23)</sup> The participants must agree voluntarily to create and use common technical standards for the transfer of information but each one of them will preserve its own management autonomy for UNISIST carries no executive or operational functions of any sort.

In November 1972, the General Conference of Unesco authorized the establishment of the UNISIST programme with the following five goals which have remained unchanged: to advance and coordinate the world trends towards information sharing and cooperative agreements; to provide guidance for the necessary developments in the field of scientific and technical information; to facilitate the access of users to published information; to help the developing countries meet their needs for scientific and technical information; and to take the necessary measures for the establishment of a flexible world network of information systems and services based on voluntary cooperation.<sup>(24)</sup> Like NATIS, UNISIST regards information as a valuable resource and recognizes the need for information networks for its effective access and use by those who need it. It seems, however, that while NATIS sees information as a national resource and aspires the effective library and information infrastructure at national level, UNISIST sees information as a world resource and aspires the effective systems interconnection at international level. If we agree that to be successful, international cooperation depends upon adequate national arrangements or, in more practical terms, that projects of a world-wide nature require an adequate infrastructure of libraries and information centres in each individual country, then we can see that UNISIST is based upon the NATIS concept to a great extent. Nevertheless, both programmes regard information as an instrument for the shaping of governmental policies, scientific and technical as well as economic and social development of nations. This was another new direction taken by the UNISIST programme which was initially designed to improve communications among natural scientists at the international level.

It is now increasingly concerned with scientific and technological information as they serve the development process, with new emphasis given to the information needs of all categories of users contributing to development. This association with development as a broad social objective, according to the UNISIST II Main Working Document, provides a "new mission orientation" for UNISIST. At this Conference it was also acknowledged that greater allowance should be made for social and cultural factors in decisions concerning development, and the importance of correcting the tendency to encourage economic expansion alone and the consequent over-attachment to achievements due to technological progress, calling for greater involvement in the technical preparation of action of those who are abreast of social realities or can interpret cultural values. (25)

A second conference on UNISIST provided Member States with the opportunity to review achievements and examine factors which may affect the course of future activities in the programme. The continuing relevance of the original UNISIST goals, the UNISIST framework, and related actions undertaken by Unesco have been reiterated by Member States. New developments, not referred to so far, will be mentioned in their place, under the specific categories of objectives recommended for the concept of a world system of information transfer as envisaged by UNISIST.

### 3.5. UNISIST: Recommendations for action

The first UNISIST Conference was attended by scientists and engineers, the information professions and the makers and administrators of public policy in Unesco's Member States. Its Study Report outlined twenty-one programme recommendations and another of organizational nature which were addressed to them and which may be grouped in five broad objectives:

1. "UNISIST should work towards the promotion and dissemination of information methods, norms and standards".

This objective was previously designated as "Improving tools of systems interconnection". Among the pre-conditions necessary for a world-wide exchange of scientific and technical information from one system to another are the adoption of common standards, rules and procedures for both manual and mechanical systems. This part of the programme is also concerned with the development of controlled vocabularies or thesauri; descriptor lists; some aspects of the systems-interface problem such as character set requirements, the code for character sets, codes for languages and countries; as well as the present trends and future potential of telecommunication and teleprocessing networks for the transfer of scientific information. (Recommendations 1-6).

2. "UNISIST should work to strengthen the functions and improve the performance of the institutional components of the information transfer chain, viz., the libraries and repositories, the abstracting, indexing and translating services, and the information analysis centres".

This objective is directed towards the strengthening of the functions and performance of libraries, documentation centres, indexing and abstracting centres, information analysis centres, numerical data centres, translation services, or any other institution involved in the provision of documents which constitute essential components in the transfer of information in science and technology, and other sectors as well (Recommendations 7-10).

3. "UNISIST should work to develop the human resources essential to the planning and operation of future information networks".

The recommendations in this group are directed towards the strengthening of the skills and capabilities of the professional groups which constitute the manpower resource for the UNISIST programme: scientists, editors, documentalists, librarians and information specialists. The training of information users was added in 1977 as a new element and efforts and development of information systems.

UNISIST also calls for the efforts of competent professional organizations, such as IFLA, FID, IFIP, and others, with the co-operation of the scientific unions and governmental bodies in order to develop adequate manpower resources of information specialists, through educational and training programmes in developed as well as developing countries, with special attention given to the needs of the latter. The reports of the Ad Hoc Committee on Education and Training Policy and Programme have been influential in determining the shape of the programme in this area which has consistently been assigned with high priority. UNISIST's efforts towards the harmonization and coordination of education and training programmes for the information professionals was approved at a meeting of Sponsors of International Assistance Programmes in Education and Training of Specialized Information Personnel held in 1978<sup>(26)</sup>, and received also the support from the Ad Hoc Committee (Recommendations 11-14).

4. "UNISIST should work with governments to provide optimal economic and political environments for the development of systems interconnectibility and co-operation".

Although the other groups of recommendations have assumed the commitment of public resources in one way or another, this one is addressed exclusively to governments, as those able to implement the recommendations.

The activities under this programme include the development of guidelines for the assistance to governments of Member States in the establishment of their information systems and networks; the establishment of a governmental focus in each country to stimulate and conduct the development of information resources and services; the movement towards information-sharing programmes involving scientific and technical libraries, information analysis centres, data centres, etc., at local, national, regional and international levels; the pricing policies of scientific information services; reducing of administrative barriers on the circulation of information and the problems related to Copyright Laws. (Recommendations 15-19).

5. "UNISIST should provide assistance to developing countries by helping them to develop minimum bases of scientific information, and by developing pilot projects in co-operation with other United Nations agencies".

Although the needs of developing countries are heterogencous there seems to be one common to all of them: the need to develop scientific information infrastructures to provide necessary support for effective participation of the country in UNISIST. Before the country could expect to get this participation, it must pay attention to the threshold criteria identified by the UNISIST Working Group on Developing Countries which are concerned with the existence of an adequately funded research and development programme, higher education institutions in science and technology, and a pool of scientific manpower.

This programme also identifies the action to be taken by UNISIST to help developing countries to attain this 'threshold criteria'

such as providing a forum for discussing programmes of assistance to library and information services; proposing guidelines and criteria for the establishment and management of information networks; and designing, with the co-operation of other international organizations, some pilot projects to gain experience in linking the developing countries to UNISIST. (Recommendations 20-21).

The recommendation 22 deals with the organization of UNISIST. Initially, it was proposed that UNISIST would have three interrelated managerial bodies: an intergovernmental conference which would advise and approve UNISIST policies and programmes; an international scientific advisory committee which would assess progress of UNISIST programmes, study proposals concerning developments and changes as well as assist in the overall co-ordination of UNISIST; and an executive office responsible for preparing and administering programmes and budget.

This organization initially adopted for UNISIST, which was placed in the Science Sector of Unesco, as well as the organization of NATIS, placed in the Culture and Communication Sector, has changed with the adoption of the proposal to integrate all information programmes of Unesco into one general policy. As the two programmes developed, a danger of serious overlap of activities as well as duplication of efforts became real. Also, there were certain conflicts among some objectives and policies recommended to Member States and certain amount of competition between both programmes - especially related to Unesco's aid to developing countries - which could lead to an unnecessary split in the areas or a wastage of Unesco's resources.

Immediately after the NATIS Conference, Unesco expressed its concern about this programme conflict and a Working Group was established

in the October Meeting, 1974, to examine this problem.<sup>(27)</sup> Also, a group of experts met in Paris from 16-20 June 1975, to discuss the contents of all Unesco's present and future programmes in the field of information, documentation, libraries and archives and, based on this work, the 19th Session of the General Conference, held in November 1976, in Nairobi, adopted the recommendations for the formation of a General Information Programme (PGI).

### 3.6 General Information Programme (PGI)

The new division PGI was created on February 24, 1977, and placed outside the sectoral structure of Unesco, directly subordinated to Unesco's Directorate and under the authority of the Director of the Bureau of Studies and Programming. It regrouped many of the activities executed before by the Division of Scientific and Technological Documentation and Information (STI) and the Division of Documentation, Libraries and Archives (DBA).<sup>(28)</sup>

The 1975 Meeting of Experts on Programme Structures in the field of Information and Documentation Systems, Libraries and Archives while emphasizing that 'overall co-ordination is necessary to avoid duplication and to ensure complementarity between existing information programmes, systems and services', suggested that the programme should have one intergovernmental steering committee and a single advisory body. This new Steering Committee is called the Intergovernmental Council for the General Information Programme and is partly based on the statuses of the former UNISIST Steering Committee which, together with the NATIS Committee, is superseded by this Council. It is composed of thirty Member States of the Unesco and it is responsible for the planning of the PGI, making recommendations on the contents of future programmes and their budgets; assess developments and modifications in the Programme; define priority activities and basic areas requiring international

co-operation; and encourage and assist Member States to participate in the GIP, co-ordinating their activities towards this end.

The programme is composed of four main parts:

1. Promoting the formulation of national and regional policies and plans;
2. Promoting the establishment and application of methods, norms and standards;
3. Contributing to the development of information infrastructures and the application of modern techniques of data collection, processing, transfer and reproduction;
4. Promoting the training and education of information specialists and information users. (29)

As can be noted from the previously exposed objectives of NATIS and UNISIST, both programmes contained items under these headings, but the different approaches taken by them left gaps in some areas and overlaps in others. Related to 'national and regional policies and plans', UNISIST, as the longer established programme, was more developed than NATIS: it had provided guidelines on the subject as well as opportunities for discussing them on a world basis (Yugoslavia, April 1977, Frankfurt, October 1977) and on a regional basis (two meetings in South-Central Asia, one in the Arab region, and others are planned for Africa and Latin America) while NATIS was beginning to produce guidelines, and its assistance was more to individual countries. It can be noted, however, that while UNISIST was for many years only concerned with international and national science information plans, NATIS covered, from the beginning, a national information policy, reflecting the needs of all sectors of the community, not excluding the scientific one.



In the area of international standards and technical guidelines, both UNISIST and NATIS have made important developments. In the case of UNISIST various activities were carried out, such as on machine-readable bibliographic descriptions co-ordinated by the centre in London, on scientific terminology (Vienna) and on the International Serials Data System (Paris), as well as the preparation of manual on systems interconnection. NATIS stressed the importance of standards codes and formats such as the International Standard Bibliographic Descriptions for Monographs (ISBD(M)) and Serials (ISBD(S)), the International Standard Book Number (ISBN) and the International Standard Serial Number (ISSN) which was part of the UNISIST programme, but, in addition, NATIS tried to relate the acquisition and processing of documents to their availability through the support of IFLA's UBC and UAP programmes.

About the third aim of the PGI - development of information infrastructures - UNISIST have been mainly concerned with bibliographic information retrieval, data analysis, research and development programme, and the establishment of a strong scientific library system, while NATIS has been concentrated mainly on documentation, library and archives services. Thus, there seems to exist less duplication in this area and, again, UNISIST was involved more with projects of a world-wide nature, NATIS with pilot projects in individual countries and regions. Related to the application of information and library technology, UNISIST initial recommendations seemed to be more sophisticated than NATIS' ones. However, both programmes referred to the importance of telecommunication networks for the transfer of information, but UNISIST (Recommendation 6) mentioned "a potential for interlinking scientific information systems in a variety of ways", accepting it as a reality today, while NATIS (Objective 10(ii)) in a more cautious way, called for appropriate legislation "to strengthen and support the telecommunication network as a key

element in the transfer of information". Developing countries seem to be, not unexpectedly, rather reluctant in committing their scarce resources for the development of technology which is an area of rapid and complex changes. Developed countries, in this aspect, can help with their experience to orientate developing ones through guidelines and seminars where the problems can be discussed.

Education and training of information manpower is an area of high priority in both programmes and the reconciliation of their works under GIP has certainly brought together experience in infrastructure development and education and training with economy of resources, costs and efforts spent in planning and implementation of programmes. The development of trained manpower is one of the broad principles which underlie the action programme for UNISIST and it can be traced to recommendation 13 of the Feasibility Study which stressed the need for specialized trained personnel to operate and use the new modalities of information transfer in both the developed and the developing countries, with special attention paid to the needs of the latter. It seemed that the presentation of educational issues in the UNISIST study was general, with considerations and proposed solutions being rather indicative while in the NATIS report more details could be found in relation to those matters. The UNISIST II Conference, however, dispelled any doubt on the high priority assigned to this area by its advisory groups and governing bodies, and it pointed out that "Once the needs of the developing countries for manpower to plan, organize and provide information services for development were articulated, education and training programmes achieved a new focus in the UNISIST programme".<sup>(30)</sup> The Conference also recognized that in scientific and technological research the international flow of information and the development of innovative national information services are

necessary to enable scientists and specialists to maintain productivity but the needs of developing countries are more critical owing to such problems as isolation from the international community, inadequate research resources, educational handicaps and factors posing difficulties in the transfer of information such as financial and bureaucratic difficulties in international transactions and proprietary rights.

The basic fact for developed and developing nations alike is that qualified manpower is a condition sine qua non of improving access to scientific, technical or any other kind of information which form part of national information policies. Special attention should be paid to this issue because not only there has been an increase in scientific knowledge, but the organization, methods and techniques involved in the transfer of this knowledge have been increasingly growing in sophistication as well. Thus, the professionals involved in this process must extend their educational programmes in order to be able to play their role effectively. Referring to the educational requirements for the UNISIST programme, still when it was related to scientific field alone, A. Wysocki asked for a revision in two aspects: firstly, the documentalist should have a deeper understanding of the language and findings of science; and secondly, some proficiency in linguistics, mathematics, and the computing sciences in so far as these disciplines contribute to the evolution of more sophisticated methods of information analysis and retrieval. He continued by pointing to the need of developing adequate education programmes to meet the challenge of the technicalities of the information profession and of its splitting into separate branches. This is a more difficult task for the less advanced countries where educational disparities of information users and professionals are greater. His suggestion was that all parties to the operation of cross-national

information systems be intellectually self-supporting without having to depend upon external assistance or to reduce the scope of their contribution for lack of skilled personnel. "If this is an accepted goal", he concluded, "then there is no alternative but to develop, through the co-operation of all nations concerned, a minimum education programme, to be administered on a regional basis, for the training of research and practising specialists in all branches of information science".<sup>(31)</sup> It seems however that some external assistance of one kind or another will be needed by many developing countries for some time to come yet, but we agree with the idea of a minimum education programme, adding that it should be common to all specialists working in the information field, with the inclusion of the archivists as it was done by UNISIST after the enlargement of its scope and its incorporation under the General Information Programme.

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#### 4. The tendency to unifying education for archives, librarianship and information science

##### 4.1. Grounds for a structure of unity in the information field.

It seems easier to have a clear picture as to the nature of our profession when, as occasionally happens, someone from outside the field information enquires about our work and our role in the life of the community - and then, in a simple and direct answer, the whole of the information work is brought to our minds - than when going through the professional literature where all expert knowledge, increasingly specialized and sophisticated, seems to have also brought a degree of uncertainty about the functions of the various facets of the subject. This uncertainty is reflected not only in the many differences in interpretation about the nature of the activities involved in information work but also in the confusing and unstable terminology now existing in the profession. An illustrative example is the use of terms like special librarian, documentalst, information scientist, science information specialist, information officer, information engineer, subject information specialist, or even technical literature analyst, all of which, with minute nuances depending on the author's background and country, may be referring to the same professional doing exactly the same kind of work.

This question of terminology was taken up by R. Stokes who said that "Our profession has often demonstrated its immaturity by responding to every ripple of fashion and wave of self-interest in the revision of nomenclature".<sup>(1)</sup> He was referring to the 'in' phrases adopted by the library profession in the past, e.g. in the late nineteenth century it was 'economy' originating 'library economy'; next, from the scientific outlook it became 'library science'; 'documentation' in the 1920s hence



'documentation centres'; school libraries being called 'learning resource centres' or 'multimedia centres' and finally, what has always been known as 'reference' gave rise to 'information science' which brought a special nomenclature with it. The author mentioned the question "whether the basic business of librarianship has been fundamentally changed by all this".<sup>(2)</sup> To answer it, let's remember that library practice is as old as the communication process itself. When man started to interact with each other and to record his ideas for future generations, the fundamentals of librarianship were being cemented. And its basic business does not seem to have changed so far - it is still mainly concerned with the systematic organization of knowledge for the purpose of its dissemination to society - but to respond to the new and complex information needs the discipline of librarianship has had to expand and develop itself with the emergence of additional specializations. As a result the picture of the information field may look quite a frustrating and disintegrating one at the moment: a hard and fast line cannot be drawn among all its professionals (including the figure of the archivist not mentioned so far), we can see that many pieces overlap and yet we are unable to get a clear juxtaposition of all the elements and activities involved.

Faced with such danger of fragmentation one possible way to alleviate its effects could be in a careful examination of the principles, general tasks and responsibilities of the information profession - which include the areas of archives, librarianship and information science - considering some of the internal as well as external forces which exercise an integrating effect among them.

Among the latter ones we find the UNESCO international programmes in the information field such as NATIS and UNISIST. The NATIS Conference

introduced an important and unifying concept. "Information has become the essential basis for the progress of human civilization and society"<sup>(3)</sup> it said, and further on: "As the idea gains ground that international collaboration should be achieved, national planning of this vital, resource becomes a necessity" [emphasis mine] <sup>(4)</sup> It consolidated the concept of information as a national resource, and in the recommended planning for the maximum availability and use of the country's information resources, documentation, library and archives services are included as means of communication of which information is an integral part. This should encourage all professionals in the field to work closer together since the information policy of the country is to be considered and planned as a whole and also the Conference emphasized that information should not only be provided for the scientist and researcher but for all sectors of the community and for all categories of users who may need it: "Information is not only a national resource vital for scientific and economic progress, but also the medium of social communication".<sup>(5)</sup> It continued by stating: "It is of the highest importance that documentation centres, libraries and archives should not be thought of as isolated units..." and that "Closer co-operation between documentalists, librarians and archivists should be encouraged both at the international level where IFLA, ICA and ICA have already established joint units, and at the national level where their planning should be co-ordinated wherever possible".<sup>(6)</sup> At the international level, Unesco made some significant moves towards a greater harmonization of the fields : a number of structural changes were introduced in 1976, including the new sector for Co-operation for Development and External Relations, and the restructured sectors for Culture and Communication, and for Programme Support and Administration; also in 1976 the General Information Programme was

created and in which the basic activities of the Organization in the fields of scientific and technological information, and of documentation, libraries and archives are covered, including the UNISIST and NATIS programmes; and its periodical the Unesco Bulletin for Libraries had its title changed to: Unesco Journal of Information Science, Librarianship and Archives Administration.

With regard to co-operation between documentalists, librarians and archivists at the national level, a great contribution should be made by educational programmes in the field. A co-ordinated approach in the methodology and curriculums for the information professionals will enable them to understand each other's tasks and language, and to collaborate on equal terms in their interrelated jobs. Such co-operation can be seen in the production of the national bibliography as well as in the fields suggested by the NATIS Conference: "co-operative acquisition of materials, centralized processing, abstracting and indexing, establishment of union catalogues and inter-library lending systems, data processing, use of reprographic, audio-visual and other equipment, and translation and preservation facilities".<sup>(7)</sup>

The establishment and progress of international information programmes are then of great importance and must be closely looked at by educationalists because of the implications they will have on their views of library and information studies. The UNISIST programme which, from its beginning in 1971, basically stood for standardization, compatibility and cooperation also brought many implications for the education and training of the information personnel: concepts of cooperation and internationalism must be talked into the students who should be more international in their views; educators must impart to the students some knowledge of international standards, of planning techniques, and of the

technology and communication devices involved in such international programme. Each participant of this world-wide information sharing system must have reached a "minimum level of understanding and performance for all stages of the process (document analysis, information and data input, processing and communication techniques, etc)".<sup>(8)</sup>

UNISIST allows for some diversity naturally found in different countries but certain minimal educational requirements should be met. And, anyhow, the information students, future information specialists should be prepared to work in the increasingly international and complex world of information networks. There is also a trend towards regionalization of cooperative efforts since international organizations seem to prefer dealing with regional consortia - like the BIREME or AGRINTER - than with individual countries.

Other external factors which may exert some kind of integrating pressures on the information profession can be found in recent technological developments, and the ways they are put to use in information services; in the present economic situation of general recession which compels to a wiser use of the resources available; and in the realization that a concerted action by associations in all three fields is likely to be more effective than isolated action as a pressure group attempting to influence any governmental decision, or in any other level, on matters of interest to the profession. Such a unified approach seems to be, for example, particularly important for the archives field in many Latin American countries where it does not usually receive recognition of its role in the economic and social development of the country and, consequently, lacks of sufficient funds, appropriate buildings and qualified personnel to carry out the work.

Among the internal integrating forces it may be said to be the assumption that archives, libraries and information centres have a common historical origin - they have responded at different times to societies' needs, with information scientists picking up where librarians failed, i.e. meeting the information needs in research, technology and industry, just as the librarians did, it seems, from the archivists; the responsibility all of them have of the effective management of the graphic record containing all knowledge produced by societies; their aim of putting this recorded information to man's use and benefit in the most efficient way; and also many ordinary tasks, issues, problems and concerns which the information professionals share among themselves and which should be looked upon for the development of their basic education so as to help in bringing up the next generations of librarians, archivists and information scientists without the traditional prejudices commonly held among each other over the years. This would make easier to achieve what can be considered another integrating force, i.e. a profession not weakened by further breaks but unified and strong, and ready to cope with whatever changes the future may bring.

#### 4.2. Unified approaches in educational programmes for the information specialists.

The possibility of a basic common programme in the education for the three areas of the information field seems to have resulted from the 1974 September Inter-Governmental Conference of Unesco. To ensure a minimum supply of suitably qualified manpower for NATIS, attention was given to the programme for professional education and training of information personnel in its Objective 13 which said of it "Basic elements of this programme are: (i) the harmonization of curricula for documentalists, librarians and archivists;...". The Conference also produced a

publication giving guidance on planning information manpower for library and documentation by P.Havard-Williams, and for archives by E.G.Franz. In it, there is a schema of a core curriculum for the three areas which will be referred to in more detail in the chapter seven.

The idea of a unified approach in the education for either librarians with archivists or librarians with information scientists is not new, however. There has been for some time now, several educationalists expressing their approval of it in the literature. Discussions of a core curriculum for librarians and information scientists in England date back to the early 1950s, when ASLIB and the Library Association had a series of joint meetings in an attempt to reach a consensus on such a syllabus. The attempted failed and the major point of difference seemed to have been the importance which some of the LA representatives attached to one particular subject: library administration. D.J.Foskett wrote about it: "The information officers considered that this need not be a compulsory study, on the grounds that most information services were part of larger organization, so that information officers themselves were not particularly concerned with the administration of the enterprise".<sup>(9)</sup> We can see now that this aspect should no longer constitute an obstacle for with the development of management as a theoretical study, it has much more appeal for those employed in industry.

Information science is becoming an integral part of library education as it can be seen in the many library schools and departments which have added "and Information Science" or "and Information Studies" to their titles, but programmes for education in information science have been defined in a variety of ways. R.M.Hayes described six ways in which the subject has been identified: with the use of computers in

libraries; with science information or documentation; with Computer Science emphasizing the use of computers for processing natural language and artificial intelligence; with Communication Theory; with the design of information systems in any specialized field, e.g. Medicine, Engineering, Librarianship, etc; and finally information science can be regarded as a discipline in its own right, and as such it will include both theoretical courses - drawn from the disciplines of mathematics, logic and linguistics - and applied courses - from fields like psychology, engineering or microbiology.<sup>(10)</sup>

With so many differing views, there naturally come different ways of relating the content of information science to that of librarianship. R.C. Swank indicated three possibilities: first, it could be done through the addition of specialized courses to the existing library school curriculum which he agreed is a useful approach but achieves no basic integration between the two disciplines; secondly, it might be done by offering separate new curriculums in information science which the author admitted would not only fail in achieving integration but actually emphasize the apparent dichotomy between them; and a third option would consist in a blending of the content of information science with a basically revised version of the old curriculum of librarianship. This is the approach preferred by the author who also does not believe that information science is a field separate from librarianship. According to his view, "it is rather a fresh insight into the nature of librarianship - an insight derived from broader concepts, more exact methodologies and more varied applications. Its contents cut across the entire spectrum of librarianship and even penetrate the core curriculum. Like documentation, it is an extension of librarianship. The processes of collection building, organization, and utilization are, for example, common to all library and information systems."<sup>(11)</sup>

It is not intended here to consider the much discussed question of whether information science represents the universe of the field with librarianship as a part of it or vice versa. The important things to be looked at are the improvement of the information services and the development of the profession itself. It must be remembered, however, that the long experience and tested values of librarianship can be a valuable resource in searching for new methodologies and solutions. As J.H.Shera put it: "... whatever the discipline of information science is, it is librarian-based. The librarians are the ones who, over the centuries, have performed this function of mediating between man and his recorded knowledge. It is they who are concerned with the preservation, communication and utilization of the transcript of the culture".<sup>(16)</sup>

There are many other views which favour a basic common programme for both librarians and information scientists and numerous studies have referred to the inclusion of information science studies into library schools, especially in the United States.<sup>(12,13,14,15)</sup> But it is only intended here to show some examples that there has been a real tendency towards a unified approach in the education for these professionals since the emergence of information science in the early 1960s.

As for archives and librarianship, both disciplines have had a history of much close association and interaction. The librarian of ancient times was literally a keeper of books and manuscripts and kept this custodial function until the invention of the movable press, and to a lesser extent after Gutenberg until the organization of the archival profession in the second half of the last century. Since both disciplines initiated the movement towards a professional status and started developing their own methodologies, a clearer conception of each other's spheres of



activity has emerged among their members. Even after that some sense of unity has been kept among both professionals.

A. Petrucci, in an article about libraries and archives said that "In recent years, archivists and librarians have more and more often found themselves working side by side at congresses and in national and international research agencies, and collaborating in research studies; they have had the opportunities of comparing their respective methods of work, perfected over centuries by the two professions, often discovering with astonishment how closely their professional problems are related".<sup>(17)</sup> Further on, he admitted that "there are substantial differences in characteristics, methods of operation and purposes which make them two separate institutions but also recognizing that the common ground is vast, with interests and problems which need to be tackled and can be satisfactorily solved only through the combined forces of both".<sup>(18)</sup>

In order to improve this relationship, especially for the benefit of the information user, we think it would be useful for both prospective librarians and archivists, to have an idea of each other's whole field of activities as well as to know some basic principles of each other's techniques during their school years. The practical reason for this is that the archivist will often need to use library resources in his work - to check, for example, the sources of some records he is dealing with, or even to be acquainted with the professional literature in archival and record management - and the librarian, in his turn, must know about proper methods of archival organization for still today many libraries are the custodians of rich collections of archival and manuscript material without always being able to have qualified archivists among their staff. Also, he should know especially for reference

purposes, what classes of information can be found only in unpublished archives.

T.R.Schellenberg pointed out that librarians are accustomed to dealing with single record items and to classify and catalogue them by subject while archivists are usually dealing with what he calls 'collective units', which they arrange and describe organically. Librarians, therefore, often find it difficult to apply archival principles and techniques to records that are deposited in libraries, hence the importance in providing library students with some fundamentals on archives. "Once they recognize and understand the basic differences between the methods of dealing with publications and records", the author continued, "librarians can not only effectively manage documentary material but can also teach courses on its management in their schools".<sup>(19)</sup> He is a strong supporter of the view that library schools are the proper places for archival training since, according to him, librarians are important record custodians; they are concerned with methodology; and as they already have courses on the methods of classifying and cataloguing publications, it is easier to include in their curriculums courses on the methods of arranging and describing records. Another important reason in his words is that "Through the years, librarians have developed an attitude of service to the public of unstintingly making available the material in their custody. In regard to their holdings, they emphasize use, not possession. In their profession they emphasize cooperation, not competition. Their views, if inculcated in training courses, will greatly benefit the archival profession. They will promote cooperative effort in the development of archival methodology, as well as the cooperative use of material in the possession of documentary repositories".<sup>(20)</sup>

Another voice in favour of bringing closer together librarians and archivists is from J.C.Colson who stated that unity among them 'can be best fostered by developing a program of preparation for our profession that emphasizes our joint concern for the systematic organization of knowledge regardless of its origin or format'.<sup>(21)</sup> And, like Schellenberg, he agreed that such a programme should take place in the library school, developed into a school of archives and library administration.

An alternative to this view comes from those who believe that archivists should receive their professional education in graduate schools of history and then, supplement this base with archival courses generally available on specialized institutes or in library schools as well as in professional seminars and meetings. Although it is recognized that the archivist should have an academic background in history, there are some drawbacks in this approach. It may be, for example, an expensive solution for the developing countries, where the problem of manpower is more acute, to require a university degree (in Brazil, History is a four-year course) from a student who presents himself for the archival course. Also, there is no strong evidence to suggest that this is the right and only path to be followed. They could, for example, have a course on the fundamentals of archives and information studies - which would include grounding in history, administrative history, and historical method - and then supplement it with the needed knowledge in history or whatever subject which may be useful to their jobs. This could be done through the arrangements which suit the individual student best, be it full-time, part-time or correspondence course or even self-teaching or continuing education approaches throughout the professional's career. Besides, the way to archival education may not be restricted to the subject of history alone as one of the eight recommendations made by a Committee established by the Society of American Archivists to

study the future of the profession in the early seventies put it:

"...We are convinced that the most appropriate educational backgrounds for archivists are in the fields of history, library science and the social studies in general, and that archivists' background should include training and experience in the use of original research materials..."<sup>(22)</sup>

The bonds attaching archives to history are very strong anywhere in the world, perhaps because historians must depend on archives for the sources needed for their research and so, they helped in the past to foster the growth and development of institutions that collected and preserved documentary material, helped to survey such material and in their meetings and congresses were often discussing archival principles and techniques. One example of this early concern from the historical profession is given by R.L.Brubaker who wrote that 'The first AHA (American Historical Association) standing committee was the Historical Manuscripts Commission, created in 1895, which made a preliminary survey of manuscripts and archives in American libraries, historical societies, and other institutions; published a list of printed guides to collections; sent circular letters to libraries urging them to use 'the broadest possible construction in determining what manuscript accumulations are worthy of deposit'; and published the texts of many important documents in successive volumes of the AHA Annual Report',<sup>(23)</sup> But a drawback in this relationship, mentioned by the same author further on is that 'Although historians are vitally interested in the adequacy of resources for research and bibliography, they generally show little or no interest in either library or archival methodology',<sup>(24)</sup>

This was also one of the reasons given by Schellenberg and mentioned earlier to place archival training in library schools, i.e. these are

the only ones likely to devote some attention to methodological training. Historians, according to him, are not concerned with methodology and when they do discuss it, they will tend to emphasize historical developments and regard techniques either as unimportant or as some kind of restraint to scholarly initiative. He also stated that historically trained archivists will have a methodological training which will excessively stress the historical work required in appraising, arranging and describing documentary material.<sup>(25)</sup> Still on the subject, A.A.S. Mydin recorded his even stronger belief that "Merely because archives preserve material which has 'historical' value a presumption seems to have come about that archives exist more for the historian than for anyone else. It is apparently this presumption which lurks behind the desire to somehow connect archival training with history departments of universities".<sup>(26)</sup> We cannot deny that he has some reason in pointing to the historian's "monopoly" on archives since the archivist should also think in terms of the information needs of any scholar, researcher or anyone else who may turn to the archival materials to find out anything about past events, be it a politician, a literary critic, a geographer, an economist, a sociologist or a genealogist.

Thus, it seems right to us that the responsibility for the education and training of novices in any field belongs to the members of their profession. There may have been justifying circumstances in the past for archival courses being administered in archival institutions, in libraries or as part of history department programmes at some universities but it may have come the time when the education for archivists, in the same way of that for librarians and information scientists, should be conducted within a proper structure, related to but independently of other fields of study.

The common educational programme envisaged in this work for all three professionals of the information field would not deny the individuality of each one of them. In such a core curriculum consideration will be given to the main aspects, features, activities and principles which in the broad sense are shared by all information professionals who, for example, will be concerned in their future jobs, with the selection, acquisition, bibliographical control and preservation of all types of recorded materials; with the retrieval of information from these materials and their availability to those who may need them; as well as the stimulation of their use and dissemination to society.

It is not intended to suggest that such a curriculum should be imposed on library and information schools everywhere. The varied patterns of educational systems in different countries obviously bring varied structures which has, therefore, to be relevant to the needs of each country individually. Furthermore, this common programme would have a broad content which would allow for adaptations to attend the special needs of the country in question taking into account the community where the school is placed, the interests of the students and teaching staff alike. The Unesco's course of action on this aspect was well defined, as we can read under the objective 8 of NATIS:

"A core subject area, in harmony with equivalent programmes and objectives at national, regional and international levels, should be adopted as a guide for preparing basic professional curricula for information specialists, librarians and archivists at a level consistent with that of other university programmes of graduate standing". (emphasis mine).

There has been continuity and development of action envisaged in the framework of NATIS and Unisist programmes. For example, a second Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II) was held in Paris, 28 May - 1 June 1979 in

which it was reaffirmed the support for the harmonization and coordination of programmes in training and education for the information personnel. With special regard to archives, a meeting was held in Unesco headquarters, Paris, from 26 to 30 Nov. 1979 with the aim "to examine the possible measures to be taken for the harmonization of archival training programmes and the coordination of these programmes with those designed for the training of librarians and information specialists".<sup>(27)</sup> There are a few examples of schools providing some sort of combined training for the information professionals. At the 'École des Chartes', Paris, archivists and librarians are trained together since its foundation in 1821; documentalists are added to these two in the United Kingdom at the School of Archive, Library and Information Studies at University College, London, and at the Department of Library and Information Studies at the Loughborough University of Technology; in Africa at the well-known school at Accra and in Senegal at the School of Librarians, Archivists and Documentalists at the University of Dakar; and in Spain, at the 'Escuela de Documentalistas, Archiveros y Bibliotecarios' in Madrid where they have a post-university programme for archivists and librarians, and a common programme on the sub-professional level for assistant archivists, documentalists and librarians.

It seems that there is no better occasion for appraisal of a profession than when considering the new trends in the training and education for its members and, indeed its future developments can be very often determined by the way the generations of professionals are brought up. And it seems also to be easier the planning and introduction of new approaches in the education for the information profession in countries where very little or nothing exists in a systematic way and then everything must be started from scratch. However even where there is an

organized educational system, careful consideration should be given to suggestions of change. The profession itself has been going through great structural changes for some time now. There are new circumstances of work with increasing participation of libraries and documentation centres in information networks and cooperative schemes, new demands have been made upon the information specialists who, in their turn, are needing higher academic qualifications today than their counterparts in the past.

Another change noticed is that archives and library material are moving to a very similar identity with both containing printed matter, manuscripts, microforms, maps and charts, tapes, information on computer tapes, films and other audiovisual material, and the roles of both archivists and librarians have changed as well. The former has ceased to be mere custodians of the past since he is being increasingly required to become actively involved in the building of the collections and their adequate use. And the librarian of the past, who was concerned with bibliography in all its technical details or with a complete and accurate cataloguing of every book, gave place to a librarian more involved with administrative matters or systems organization. If this was not so, we must admit, there would hardly be any grounds for a core syllabus between both professionals and the information scientists.

All these aspects must be taken into account when considering education for the future members of our profession and being confronted with prospects of changes. They have happened very gradually in our field as in any other where the human element is at the centre. As early as 1950 there was already some indication of unity among the information professionals. In a report presented by S. Briet we can read: "On the one hand a more definite distinction is being made between the



professions of archivist, librarian, museum curator and information officer, whilst on the other, the methods common to them all tend to bring them together in their search for ways and means to achieve their aims". (28)

Thirty years have elapsed and yet we are searching for means to bring the information professionals together. It may be of some consolation to realize that men have naturally resisted fundamental changes or any radical innovation through all times. In 1835, for example, the editor of the journal "John Bull" alarmed by the latest invention warned the British people: "Railroads, if they succeed, ... will give an unnatural impetus to society, destroy all the relations which exist between man and man, overthrow all mercantile regulations, and create, at the peril of life, all sorts of confusion and distress". (29) And indeed, succeeded they have.

We should examine with much care and tact the present trends in our profession, among which lies the tendency of a unified basic education even if it involves some radical changes in the present state of affairs, or otherwise we may also face the accusation of having been shortsighted by future generations of information professionals.

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## 5. DEVELOPMENTS IN MODERN EDUCATIONAL THOUGHT

Education for librarianship archives and information science as in any other field does not happen in isolation or a special case in any part of the world. Besides responding to the social environment where it takes place and to the economic - political forces governing this environment, it is generally influenced by new developments in educational theory as well as by current patterns in education for other professions, as it is shown by some of its experiences in the past. It was, for example, apprentice-based in England at a time when most of other professionals (engineers, chemists) also received their education through such a system, while in the nineteenth-century United States, it gained the entrance in the academic world of the university when other "new" professions (architecture, dentistry, veterinary medicine, agricultural sciences) were doing the same.

It then follows that it is of great importance for the library profession to be aware of the directions taken by modern educational theory as well as by professional education in other fields, and be willing to consider any new development which may come to help improve the educational standards of its members. The educational position of some professions will be discussed in the next chapter. We will be considering now some recent trends in higher education which cannot be ignored when planning an educational programme of the kind envisaged in this work, beginning with the question of relevance versus liberal education.

### 5.1. The notion of liberal education

The term itself has been used with several different connotations, being sometimes equated with general education, especially in the United States where some authors prefer it on the grounds that the word "liberal"

carries an elitist connotation. In any way, to define what is liberal is one of the oldest problems in education which goes far beyond Victorian times. Aristotle considered liberal education the one appropriate to the free "man" in order to bring his manhood and freedom to perfection - it was the education "cultivating his soul's powers to perform "leisure" activities judged desirable for their own sake, like contemplation of scientific and philosophic truth, rather than activities of "occupation" or "recreation", judged desirable for the sake of something else to which they lead".<sup>(1)</sup> Education for the free man, i.e. "the man who was free from the necessity to earn his daily bread by the sweat of his brow"<sup>(2)</sup> meant physical exercise, music, grammar, rhetoric, arithmetic, drawing and reading and writing. Its ultimate goals were beauty, truth and goodness rather than profit, wealth and success.

The theme of training in good habits was the criterion by which Aristotle judged the suitability of any subject to be included in the liberal education curriculum. But, in his philosophy even in the liberal subjects there was a limit beyond which their study would become illiberal - too great concentration on them, too much mastering of detail - these were liable to cause degradation of spirit (he calls degrading "those occupations which have a destructive effect on the body's condition and all work that was paid for").<sup>(3)</sup>

It is interesting and comforting when reading his work on education to notice the care devoted to the issue at such an early stage in civilisation and indeed many principles are still applicable today. What seems regrettable however and against the ideals of democracy as we understand them in our age is the restriction to the right to be educated to a privileged minority who was chosen by the economic assets rather than individual interests and abilities.

Thus, taking from the meaning of this Latin word, liberal education meant in the Greco-Roman world the education befitting the "liber" as opposed to the slave.

During the Middle Ages the concept changed to the education then thought most effective for cultivating the soul's powers - education in the seven liberal arts. The trivium (grammar, rhetoric, dialectic) and quadrivium (arithmetic, geometry, astronomy, music) were taken by the young in medieval universities before undertaking the studies of professional schools, and our concept of liberal education comes more from this curriculum than the educational system of Classical Greece.

The ultimate goals of education of Aristotle's ages didn't survive the narrowness of late medievalism when the desire for beauty and truth and freedom had been largely repressed. In such times, the universities represented important mechanisms in defence of educational and intellectual freedom despite the fact that most of their structure and practices were drawn from the established institutions of the day:- the church, monastery, the guild or commune.

ROSS <sup>(4)</sup> pictures the medieval university as "a self-governing community with an elected hierarchy, separated from the world of commerce, involved in a mission to learn and to teach at an advanced level, using mysterious rituals and dress to dramatize its uniqueness, and requiring from its members deep loyalty to and enduring support for each other and the university".

Despite the restrictions of religious dogmas, the idea that scholarship should be cultivated still remained in liberal education with the difference that it should not be so for its own sake, but to bear directly on the individual's good living. It should teach him to live in harmony with himself - by developing body and mind - and with the world.

Desiderius Erasmus, the eminent educational theorist of the sixteenth century considered the most important part of education that "the youthful mind may receive the seeds of piety, next, that it may love and thoroughly learn the liberal studies; third, that it may be prepared for the duties

of life; and fourth, that it may from the earliest days be accustomed to the rudiments of good manners."<sup>(5)</sup>

The idea of the all-round education, of the truly civilized gentleman which brings with it a somewhat connotation of snobbery for us today had penetrated England during the Sixteen and Seventeenth centuries from the humanists of Renaissance Italy, although the full force of liberal education did not enter there until the Eighteenth century.

As ROTHBLATT put it, "a liberal education can be Truth, Taste, sociability, liberality, humanism, sensitivity, sound critical principles, critical self-awareness, scientific detachment, a glimpse into the permanent realities of existence, civilization, culture - all these have at one historical time or another been identified with the purposes and meaning of a liberal education."<sup>(6)</sup>

In contemporary usage, any education, in any subject, accepted as relatively broad and general, rather than narrow and specialized, aiming at the preparation of the young for living rather than for earning a living can be said to be liberal.

A good picture of what is expected from a student who has had a sound liberal education is given by Shera <sup>(7)</sup> who calls him "the whole man" - "a kind of modern version of the Renaissance man, a man who is articulate, with a feeling for clarity of expression, and a competence in some language other than his own; he must be at home in the world of quantity, numbers, and measurements; he must be able to think rationally, logically, and objectively; he knows much about the world of nature and the society of which he is a part; he is sensitive to aesthetic values; he is aware of his cultural heritage; he knows his responsibilities as a citizen; he acts with maturity and a perspective that is born of wisdom, conviction, and tolerance; he has an understanding of method without being

a methodist; he possesses a sense of values both social and personal; in him the "two cultures" are united; he is a humanist in the broadest sense".

However, it would be unrealistic to make such requirements from every single student in our technical and industrial society. Education as it was in the past was for those rich enough not to need to work and for whom it was more important to know the great writers of antiquity or the classics and to be able to appreciate art than to be initiated in any practical job. The very idea that a liberal education must not be in any circumstances subservient to a career made it a privilege of a leisured class at times when expert knowledge was not required from the economic and political leaders of society. Nowadays, the situation is quite different. In a society which presents greater level of specializations, only a few can afford the luxury of an education not aimed at a profession. Career is the normal condition of life of nearly all men and women who seek education today. The Western society started moving towards this situation with the changes brought about by the Industrial Revolution in England and some other European countries. To mention some of the good changes, it created new industries, new cities, new wealth, new social classes including a new middle class of workers and a new élite of scientists and managers.

The term scientist itself appeared in the 1800s at the same time of a new "rational-empirical" outlook of nature - the religious explanations of unusual phenomena became no longer enough. It became clear the need for a technically-educated class of workers in greater number than the old-established apprentice system could provide. Education was called upon to play its part in the process of preparing the specialists required to do the new tasks and liberal education suffered a major set-back with these innovations.



Ortega y Gasset pointed out that "in order to progress, science demanded specialization, not in herself but in men of science. Science is not specialist, if it were, it would ipso facto cease to be true. Not even empirical science, taken in its integrity, can be true if separated from mathematics, from logic, from philosophy".<sup>(8)</sup> He also said that during the whole century, specialism dislodged culture from the individual scientist and by 1890, the European scientist was acquainted with one science which he hardly knew except for the small corner in which he engaged himself in active investigation. In this situation which reached its peak by the first years of this century, the individual would enclose himself in one section of certain area of human knowledge, helping to advance the progress of this area of which ironically he was consciously ignorant as a whole.

Also during the last century specialized education reached universities and colleges in the United States due to many factors among which were the growing technical needs of an increasingly complex society, the demands by employers for specialists, the Morrill Act (which required the state universities to set up agricultural and mechanical colleges to supplement the liberal arts), the influence of German universities (which began making more of the study of science early in the 19th century), and the elective system. Incidentally, such a system was introduced at Harvard by Eliot, who was himself one of the many thousands of Americans who studied at German universities in the last century and was greatly influenced by their values. The elective system generally meant excessive specialization at the undergraduate level. As E.B. Blackman exemplified, "a student who wished to specialize in mathematics, if he chose to do so, could spend the entire four-year undergraduate period of study without taking a single course in any subject other than mathematics."<sup>(9)</sup>

But the movement for a return of general education began in the 1930s among the higher education institutions which were trying to get the same standard of proficiency in general education as they did in the professional fields. Despite all divergences and discussions among educationalists on whether they had succeeded it or not, until after World War II the essential character of the modern university seemed intact in which liberal education was at the centre. Yet in the postwar period there seemed to be a process of Higher Education becoming more and more technical and vocational, with the clear shift toward creating specialists. That was when the liberal curriculum began fragmenting once more, presenting the picture of no coherence among its disciplines or subjects taught. At this time, however, the situation showed signs of an important difference - while in the past the "new" professions were seen as some kind of threat to the proper academic interests of higher learning (with the consequence that the ones which gained entry into university were rather isolated by it), now the new professional fields have grown on their own to become highly successful professional schools. This was mainly resulted from attempts to accommodate the liberal among the useful arts.

Specialization seems to be the answer that man found for dealing with the increasing number and complexity of knowledge. We can understand it better if we consider that until the beginning of this century it wouldn't be impossible for a professional to learn all there was to know about his subject - the picture we have is the one in which there would be a small number of scientists and researchers working in a few and rather well-known places around the developed societies; the publication of their findings, when not privately communicated through personal correspondence, would come in easily digested amounts; and so the boundaries of knowledge itself were not expanded enough to constitute anything beyond the

individual's own capabilities to absorb it. The scientist in those years was not a narrow-minded sort of citizen. D.J.Foskett tells us something about the communication abilities of the 19th century researcher: "it was customary indeed this was expected - for a man of science to read everything in a wide field, in at least English, French and German. Many scientists were also fluent in Latin and Italian; and they probably knew personally most of those working in their fields in other parts of the world."<sup>(10)</sup>

Today we are presented with a different picture altogether. Even with the most intense specialized education no professional can claim to know everything in his own field. Such a task is made impossible to be attained by several factors: the huge amount of research being done in any given subject in several corners of the world, and the consequent massive avalanche of information coming out of it; the sophistication of modern means of communication which can make that information available everywhere, together with the advancement of knowledge in all sectors of human activities. Thus, it seems that if higher education then becomes highly specialized nowadays and yet unable to equip the professional with all knowledge existing in his subject, a more liberal approach in his education has more validity than ever, for the individual must reach a balanced view of what he knows, with the whole of his area and with other branches of knowledge.

But in spite of this hazard the single-minded depth of one field was the answer adopted by Western societies especially from the 1960s. From the point of view of the establishment, it is worthwhile having specialists working in it - they have proved to be highly productive and efficient, qualities greatly commended in times of financial restraints. But looking from the individual's position, it is depressing to be only a part of the "machine", without quite apprehending the meaning of its

totality. If it is agreed that he can't afford not to work and so must have an education conducive to a career, it should be understood that he can't afford also an education and a career which do not add anything to the quality of his life.

One possible answer to the problem of having a specialized or a liberal education may be found in an appropriate mix of both: have a liberal approach within a relevant education. Relevance has been defined as "pertinence to a situation, relation, issue or concern which for any reason is in the focus of attention; significantly related to the problem at hand, or to the problems with which people are struggling in a given period".<sup>(11)</sup> It is clear the difficulty in having education dealing only with the "relevant" - it would be limited, compartmentalized with no coherence among the subjects taught and no consideration of people as ends rather than means, as all kind of education should have.

The newest version of relevance is vocationalism or as sometimes it is called, new vocationalism referring to this trend in the 1970s. The term "vocational" is generally understood as the one which includes all education and preparation for occupations, professions, and careers in the sphere of work.

"Vocational preparation", according to J.B.Francis, "means a specific exposure to the skills and concepts that will serve short-and long-range goals of practical contribution to society and to students' own livelihoods", while "a liberal education means an exposure to a cultural heritage, an opportunity to develop conceptual and communication skills, and the attainment of value commitments."<sup>(12)</sup>

Although frequently placed directly opposed to each other, a liberal education may not necessarily exclude a career-oriented education or vice-versa. Indeed if we consider all education as useful, liberal education is particularly useful for through the self-development of the individual

it enables him to discharge better his duties to society. This was clearly understood in various fields after many years of emphasis on the specialized education. On the subjects of science and technology in Britain, for example, several government reports (13,14,15) in the late sixties have pointed to the mismatch between the specialist education, which produces the so-called 'experts', and the needs of the country, urging the broadening of education in order to expose the students to social, economic, political and other questions of human values.

A liberal education, in its modern concept, is viewed then as a contribution to the development of the student's intellectual and moral reasoning power as well as a means to lessen the effects of extremely specialized and compartmentalized knowledge in our society. It is connected with the present tendency away from early specialization in higher education together with other new developments which must also be considered.

## 5.2. Some other basic aspects of curricular changes

We have seen that very few today could afford an education not aimed at a profession and we must admit that one of the purposes of higher education is to produce experts in various specialities. But as the number of specialized fields has enormously increased in the last years, there is greater need for an education which would impart to the student the idea of a unity of knowledge before he is allowed to dedicate himself to the specialization of his choice, and which would also help in reducing difficulty in communicating with specialists from other fields. Such an education would be a broadly based one and among the solutions educationalists seem to have resorted to in order to get it are: the interdisciplinary courses, the study of groups of related subjects or combined courses which give students the opportunity to reconsider the specialized subject previously chosen. Where there was the traditional subject-divided curriculum

there is now a tendency towards integration. This is entirely justified on the grounds that all knowledge is part of a whole which does not come to the individual pigeon-holed - the boundaries between the subjects are artificially made and the facts logically arranged so as to facilitate their study.

John Dewey, as one of the educationalists who discussed the validity of the classification of subjects as they are presented at schools, claimed that before going to school, the child has in mind the same idea of an external world as the unity and completeness of his own life. He goes to school and, in contrast with this idea, the divisions in the curriculum will fractionize the world for him in the particular set of facts pointed by Geography, Arithmetic, History, Grammar and so on <sup>(16)</sup>. As A.N.Whitehead put it, "there is only one subject-matter for education and that is Life in all its manifestations."<sup>(17)</sup> Thus, no particular subject should be presented to the students without the teacher showing its relationship with other components of the curriculum, and also no specific topics or skills within any subject should be taught without making clear their context in the broader fundamental structure of the subject itself.

The student should, as Newman put it, acquire knowledge and ideas with sensibility about each other, having the mind to view many things at once as one whole. He called it a form of "Universal Knowledge", which constitutes the perfection of the individual intellect. "Possessed of this real illumination", he wrote, "the mind never views any part of the extended subject-matter of knowledge, without recollecting that it is but a part, or without the associations which spring from this recollection. It makes everything in some sort lead to every thing else; it would communicate the image of the whole to every separate portion, till that whole becomes in imagination like a spirit, everywhere pervading and penetrating its component parts and giving them one definite meaning."<sup>(18)</sup>

In more practical terms, it seems that one subject is better valued and its distinctive features more clearly perceived in the light of its similarities and contrasts with other subjects.

In England, where undergraduate education is known to be more specialized than in any other industrial country, there are several examples of interdisciplinary courses and other attempts to minimize the effects of such specialization reported in the literature (19-25). Some universities, have concentrated on new courses such as Oxford which established physics and philosophy, and engineering and economics; others have offered a main field of study accompanied by related or unrelated subjects; while in some others an honours course on a special subject is preceded by a year of general study. The usual pattern consists of having humanities subjects as ancillaries in science, and particularly in applied science such as history or philosophy of science, or seeing it in relation to politics, economics or industry. What is not so common is humanities or social sciences students taking ancillary subjects from the sciences and that is one aspect which closely concerns the library and information studies.

In short, interdisciplinarity in education will cross the artificial boundaries among the disciplines of knowledge, showing the student their inherent inter-relationships and interdependence. These are easily seen when we realize that many important discoveries in one field could not have happened without advances in others. With the help of a microscopy, for example, the Italian anatomist Malpighi, discovered the capillary blood vessels and described the whole circulation of the blood in the human body which might perhaps have been done by Hippocrates or any other physician of antiquity, had the microscopy been invented some twenty centuries earlier.

Thus, the traditional training in the separate disciplines through solid, year-long courses, one leading to the next, has been adapting itself to make room for multidisciplinary courses, mounted by teacher teams and

more related is the needs and interests of students and to contemporary world.

Other recent trend in education has been the teaching of principles and methods for their application rather than factual knowledge. The time when the curriculum was largely restricted to the learning, and memorizing of classical texts <sup>(26)</sup> has gone. Today, memorizing should have a lesser place in the curriculum, except perhaps when dealing with some aspects of arithmetics or in the study of languages.

The sheer mass of knowledge which modern man is required to assimilate, together with its rapid rate of obsolescence, makes it more important the grasp of general principles than the acquisition of techniques and specific details. Any body of knowledge is likely to be of only temporary significance, hence its dependency on a conceptual structure. And also, teaching principles seems to reduce the need for assimilation of facts, since we tend to remember a formula that preserves an essence or a few concepts which can embody a very large number of facts.

Bruner <sup>(27)</sup> gave four reasons why the curricula should be organized around the fundamental concepts: understanding fundamentals makes a subject more comprehensible; organizing knowledge in terms of principles and ideas aids memory; mastery of general principles is the basis for transfer of training; and, finally, he argued, the emphasis on fundamentals reduces the gap between "elementary" and "advanced" knowledge in a field.

It must also be considered that the adolescent is better equipped to deal with principles and reasoning than the child who usually remains at the concrete level in learning. He thinks in verbal and symbolic terms and deals successfully with intangible and abstract concepts. The mere acquisition of knowledge leaves much to be said at a time when his behaviour becomes greatly directed by principles which he has examined and accepted.



One of the shortcomings of the traditional education was that it paid little attention to the evolutionary aspects of the student's personality and the physical, social and affective sides of human nature tended to be neglected. Although the individual's behaviour is viewed as a function of the total situation and influenced by environmental factors the emphasis should be on the individual himself. Today's society, where abrupt and sudden changes are happening all the time - in sharp contrast with the past when changes were only gradual, requires individuals with enquiring and critical minds. Courses in higher education need to encourage this questioning position as well as flexibility and inventiveness in the students. Each of them should be allowed to develop projects where he can follow his own procedures, asking questions, looking for solutions with the help from tutors, colleagues and the literature. Apart from catering for the existing differences between the students, it seems that they tend to learn better through a direct experience and especially so if this experience is 'discovered' by themselves.

As new subjects develop, and change in well-established ones is so rapid that it is nearly impossible to predict what content and which combined courses will be the most helpful in the near future, there is a greater need for flexibility in planning courses and in teaching in order to meet new needs as they arise.

The curriculum often raises different issues from different theorists concerning the ways in which human understanding may be organized for teaching and learning. There are the 'progressists', the 'essentialists', many sociologists, educational philosophers and many others who think the curriculum should be grounded: in the student and theories of personality, in our cultural heritage, in the attitudes and habits according to the community's prevailing mores, in some quasi-ethics or basic values in life, in the knowledge needed to live in modern world, in the skills required

for success in a profession, or in the ability to participate effectively as a member of a group.

It seems to us that no adequate theory of curriculum is complete with the contribution of one discipline alone. Each of these points which pertain to man should be given some consideration when planning any comprehensive curriculum programme bearing in mind that it must, above all, be relevant to the real and changing nature of knowledge, man and society.

### 5.3. Application to professional education

The educational programmes for professionals must be carefully thought, around the focal points of actual professional decisions and also considering the best academic theories and concepts presently available. This is important so because, on the one hand, students expect all subjects in the curriculum to be directly relevant to their future careers, and on the other, there is the fact that a mere vocational training course should not be placed in a higher education institution, and also education, of any kind, should be guided to the self-development of the individuals, their moral character and intellect, so it is really up to each professional school to provide for the balance. Among these theories and concepts, there are the recent developments in education, mentioned earlier in this chapter, whose application to professional education could be worthwhile examining.

To begin with, there is the tendency away from early specialization and instead to provide professionals with a broad base of knowledge which will try to avoid the difficulty in communicating with other specialists. Professional posts are being held in group practices to an increasing extent, and the students are very likely to work in teams or to cooperate with other professionals in their future jobs.

Professional studies may avoid a too-narrow specialization if, instead of being totally utilitarian, they carry a conception of a liberal education. Over thirty years ago, B.Truscot suggested that "a truly liberal education is best attained through a conscientious self-application to the subject or subjects in which one has elected to specialize in all their varying aspects, together with a rigidly self-controlled study, over the greater part of the university course, of a limited number of other subjects, chosen either from their connections with one's main interests or as providing a pure rest and relaxation from them".<sup>(28)</sup> It is important to note his reference to all varying aspects of a particular subject and be aware that every discipline of knowledge has a structure and by learning it we come to appreciate its intrinsic meaning and how its contents are related to each other and, also, we are aiming at a liberal approach if no subject in professional education, however specialized, is taught without some reference to its historical background, its relation to other branches of learning and its social and cultural implications.

R.S.Peters suggested that for higher vocational education to be considered liberal the study of the subject matter should be worthwhile in itself, with stress in the intrinsic standards of the subject rather than in the mere consumer value of the end product; that the knowledge and abilities required for vocational purposes would be transmitted in a less dogmatic way, encouraging the students to develop a rational thinking, judgement and a critical mind about what they are taught; and it should not be restricted to a specialist training or to one mode of thought but that the practical interests in the field should be used as centres from which students would be encouraged to develop an interest in wider areas of knowledge.<sup>(29)</sup>

The information professional, more than any other, needs a broad based educational background for he is going to deal with the wholeness of the world of knowledge. He must understand the processes and patterns of knowledge structuring, and of men's thinking, in order to organize and dispense, effectively, knowledge, information and the methods of acquiring it. "Our speciality", said E.A.Lekai, "should be our orientation towards the totality, towards the connection, the relationship, the hierarchy of 'pieces' available in our collections."<sup>(30)</sup>

D.E.Shaffer also favoured a liberal education because "it best prepares the librarian to form sound judgements concerning problems affecting all citizens; to make decisions regarding his library activities; to determine rightly how to make the most of his capacity and his patrons' capacities; to make sound social, professional and individual judgements; and to help in educating and disciplining men's reasoning powers."<sup>(31)</sup>

Library and information studies may provide a liberal education if they succeed in transmitting to the students a throughout grasp of concepts and principles and their application; an understanding of the internal standards of the information profession and of its methods of enquiry and criteria of validation, together with a wide breadth of the courses, emphasizing rational thinking, judgement and criticism. This approach will also help to consolidate the position of the library and information studies among the academic disciplines since it is often questioned whether their intellectual content and depth constitute an appropriate subject for university study.

Besides a liberal education, another way to avoid a too-narrow specialization and reducing the communication problems with other specialists is having students taking groups of related subjects. This trend is directly relevant to the educational programme envisaged in this work since it suggests that library and information students should share a core curriculum on

the subjects of archives, librarianship and information science.

The other trend of imparting principles to students rather than factual knowledge, seems to be of particular importance to professional education since the mastery of fundamental ideas of any field involves the grasping of general principles which then can be used in techniques and skills or in solving problems. Again, if we consider the rate at which knowledge becomes obsolete at the present, we should emphasize in professional education, not factual content but, to use Bell's words, "a more liberal conception of specialization itself, one that emphasizes not the specific subject, or the training for a concrete task, but the grasp of a discipline and the grounding in method".<sup>(32)</sup> In this way, the future professional is brought to relate the particular task to the general intellectual field of his subject and thus, acquire the agility of mind to understand concepts, make significant comparisons and perceive value implications.

Library courses have been generally known to have a high factual content in a vain attempt to cover all the information considered important and essential. It is then, highly commendable that greater emphasis is placed on explanatory concepts, principles and modes of thought in order to avoid that the whole subject degenerates into a mere accumulation of facts. The need for keeping the general principles is also felt because from the 1920s with the appearance of special librarians until today all the different practitioner groups and the new activities of the information profession - spread of school libraries, commitment to automation, proliferation of non-book materials, participation in systems, networks and co-operative schemes among others - have been pressing on library schools for modifications in the curriculum in order to accommodate their particular demands. Any reassessment of the content of the

courses must be done in terms of the theoretical foundations, otherwise the result can be a fragmented and disconnected curriculum.

Another educational development is that the curriculum has been more directed to the student's needs and interests and to the contemporary world. In the traditional curriculum the content of courses was selected and arranged on the basis of the judgement and past experience of adults as to what would be useful for the young in the future. This is no longer valid in a rapid changing society in which the pace of life and the widespread needs of its members have changed with it. Education is necessarily largely determined by the society it caters for and professional education is even more influenced by the nature of a society and its particular social factors since they are reflected, to a great extent, in the character and distribution of its members' occupations. An agricultural country, for example, would have different needs from an industrialized one, with regard to the education of its professionals. Education should then, derive its material from the present life experience of the learner, considering the past in the extent it helps to understand the present but mainly preparing the professionals to cope with the problems and unexpected changes in the future.

A last factor which must be taken into account is the modern trend to provide an educational ladder in the profession. Although the schools have to meet their commitments with their parent institutions, with the profession itself and their students' future employer institutions, they must seriously think in terms of the students themselves. In the case of the information professional, the library or other employer tends to think of its own needs first. It is not always concerned with the needs of its potential employees and their career development. It is a clear responsibility of the library school to provide an education with more than

only short-term educational needs but larger perspectives, in which the juniors will be equipped to take full advantage of the opportunities to progress upwards along their careers.

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## 6. MODERN DEVELOPMENTS IN PROFESSIONAL EDUCATION

Although some reference was made to the terms 'professionals' and 'professional education' in previous chapters, any clarification on their meaning was thought better to be left to the present chapter.

The conception of what a profession might be carries certain connotations which have proved to be different at different times in history and at different places. Originally the term was used to confess religious belief or conviction, and it referred to the vow taken by a monk at a time when theology was the only recognized profession. During the medieval period the usage was extended to include any occupation or business which was publicly offered. By the sixteenth century, the term received a narrower and more specialized meaning applying to "a group which though offering a public service did so through a relationship between a principal and a client."<sup>(1)</sup> In a clear reference to the three existing professionals - physicians and lawyers had joined the clergy by then - the term was reserved for those who by virtue of their knowledge and skills achieved a relatively high social status, followed or not by high monetary reward.

The Oxford English Dictionary says that profession is "a vocation in which a professed knowledge of some department of learning or science is used in its application to the affairs of others or in the practice of an art founded upon it."<sup>(2)</sup> 'Profession' implies something higher in dignity and prestige than vocation or occupation. However, they are all work activities and perhaps the difference between them is merely one of level, not of kind. The essence of the

professional claim today is that the professionals 'profess' to know better than others the nature of certain matters, and to put this knowledge to use for their clients' sake.

Professions enjoy privileged position in modern societies. Despite representing a small proportion of the labour force, they exert considerable influence over the activities of other workers and the community as a whole. One way in which this influence is manifested is their involvement in the production and dissemination of knowledge which ultimately guides the prevailing modes of thinking in a society. We can see, for example, that everyday concepts of health or ill-health, social adequacy, educational achievements, among others, are based to a large extent, in the specific forms and degrees of expertise currently dominant in society.

In addition to high status, there are other advantages attributed to professions - such as freedom for organizing themselves, freedom from governmental control, freedom for setting their own standards and qualifications, and so on - which usually drive members of an occupation to seek this recognition. It seems that this process is more dynamic today than it was in the past. There are some identified factors which contribute to successful professionalization, and guided by them, occupations can take deliberate action to become professions.

D.E. Shaffer listed nineteen of what he considered "characteristics of a true profession" which incorporated "the key thoughts of over 220 articles on the subject"<sup>(3)</sup> The usual complaint about this approach to the definition of a profession is that the studies which produce the characteristics or attributes are often based on a

somewhat idealized conception of the historically pre-eminent and most highly respected professions of medicine and law. The result is often a set of rather formal characteristics not always reflecting the present reality. Also, these characteristics do not take into account variations between professions or even within professions, as well as variations between different societies. Perhaps a new model of professionalism is needed and should be searched for librarians and many other new professionals. It is possible, meanwhile to single out elements which contribute for a profession to be regarded as such :

- a. A corpus of systematic, distinctive, and highly specialized knowledge;
- b. A long period of education and training through which its new members can master this knowledge and its techniques;
- c. Commitment to the welfare of the society, placing their interests above the interests of its members;
- d. Standards of ethical behaviour with the professionals having a high respect for confidentiality in their dealings with clients;
- e. A system of rewards, be it monetary or honorary;
- f. The right to determine its own code of practice and standards of education and training;
- g. Some sort of professional organization which protects its membership's interests.

Some others can still be added from Shaffer's list like the multidisciplinary nature of a professional discipline, the support of programmes of research intended to extend the profession's body of knowledge; the demand for continuous in-service professional growth;

and legal and public recognition. (4) This last is not the least important. To be publicly accepted as a profession means convincing the public of the legitimacy of its work and the monopoly of its field. In a few occupations this is no trouble, while for others it is a major task. Medical doctors, for example, can easily point out the danger of the 'misuse' of their knowledge and skills; but teachers, librarians, social workers and some other professionals can sometimes be at pains to draw public attention to the problems from their 'underuse' or to the benefits to society from their proper use.

The first two elements in the list are of great importance - the status of a profession is based largely on a claim to specialized knowledge acquired through a system of education and training. The total pattern of this system includes the recruitment or the time when the individual decides which subject field he intends to work in; then it comes the formal or informal education and training period; next, it is the initiation of the new-entrant in professional activities including the qualification; and finally the maintenance and updating of the acquired professional knowledge viewed today as the long-life process of continuing education.

During this whole period of training and education, the aspirant professional learns the skills, knowledge, and interests required for practice, and more than these, he learns professional identification and internalizes sets of expectations. He goes through what has been described by G. Millerson as 'professional socialization'. According to this author,

"The student acquires the values, the beliefs, the attitudes and assumptions associated with the right and wrong ways of behaving as a professional" (5)

The librarian develops a sense of the expectations that a user may have in seeking for information, he has a notion of the ways the user should behave in seeking his help, as well as the ways he himself should behave when trying to provide for the user's needs - the same applies to the doctor, accountant, teacher, engineer, and so on.

Professional education and training, however, is not only associated with the continuous development of the professional, but also with its position in relation to the wider educational system in a given country. There is close involvement or interaction between both : professions influence the general structure of education, and in turn are influenced by it. The system of primary, secondary, and tertiary or higher education have always, to some extent, affected patterns of entry, curricula, teaching methods, etc. in the education for the professions. Indeed, many strengths and weaknesses, developments and features of professional education have come about as results from the nature and development of the existing educational system. It can be seen, for example, that the professional institutes and associations formed during the last century have undertaken an educational role in view of the rudimentary state of the Victorian educational system - It must be remembered that compulsory elementary education for all was not introduced in Britain until 1880, and compulsory secondary education did not come into force until the beginning of this century - Thus, all major professional bodies had as one of their objects the education of their younger members, and it included general as well as their own special subjects.

Looking at the Brazilian professional education, it can be pointed out that a different educational environment as a whole - despite similar rudimentary, or even poorer conditions of the educational system at the primary and secondary levels, - has brought about different roles played by the professional associations in the country. Unlike their British counterparts, they were not entrusted with much power, or responsibility for the recruitment, education and training, and qualifications of their members - these matters had since the beginning been left to educational and government institutions. Higher education in Brazil started with the establishment of professional schools at the beginning of the nineteenth century, specializing in one field of study - medical, engineering, and law schools - and serving the needs of a colonial society. Even after the country became independent in 1822, education for the professions was slow to develop - by 1875 the country had a population of ten million and only six professional schools<sup>(6)</sup> which were also referred to as institutes or faculties. By 1920 when the first university was established in Rio de Janeiro, there were sixty-one isolated institutions for a population of thirty-one million, and in 1976, for a student population of almost 1,000,000, there were sixty-three universities and 786 isolated schools.<sup>(7)</sup> Every new programme of study in any professional field has to be authorized and recognized by the Federal Council of Education which also issues guidelines on many other aspects of courses such as duration, minimum content, etc. Although universities may enjoy a greater degree of freedom than the isolated institutions, as well as some privileges - the award of doctoral degrees, for example, is a right exclusive to



them - their autonomy can be suspended too if federal legal provisions or institutional bylaws have been violated.

Thus, with the central government's firm control over educational matters, and the establishment of professional schools since early times of higher education, professional associations in Brazil have not been traditionally involved with the formal education and training of their members, or the award of their degrees and qualifications. They have instead turned to other issues such as the provision of opportunities for the continuing education of the professionals, control and protection of their membership, enforcement of professional codes of ethics, setting of standards, expressing the profession's voice on matters of interest, trying to influence government and public policies in their fields, among many others.

Even within the same general educational environment - either in Brazil, or in Britain, or in any other country - professions are different with regard to the education and training of their members, for they must respond to the changes in society which affect them as well as to the particular needs of those within the profession. Referring to the development of professions as a whole in Britain, G. Millerson pointed out that:

"some were able to fit into the existing structure of the educational system as the system developed; other professions were able to adapt the educational system to fit their needs; yet other professions were forced to develop their educational structures outside the system."<sup>(8)</sup>

There are many uncertainties of professional education in the library and information field, as it could be seen in the chapter dealing with its early education. Some people even argue that it

cannot be considered a profession for its training is devoid of genuine intellectual content. Considering the variety of patterns in the educational structure of the various professions in Britain, it was thought that a brief analysis of what has been going on and is likely to go on in other areas of professional education, might help towards a clearer picture of the library profession's own developments as well as of its standing among the others.

The professional fields chosen were accountancy, banking, chemistry, engineering, and architecture, and the information was mainly sought with regard to the origins and nature of the field, the early education of its practitioners, development throughout the times, and main features of the current educational system.

#### 6.1 Educational developments in the accountancy profession

The accountancy (or accounting as it is also called) profession today covers a wide range of activities such as: the preparation and audit of profit and loss accounts; balance sheets and other accounting statements for controlling resources and assessing the efficiency of their use; the provision of information to guide managers in decisions on pricing, output, investment and finance; the preparation of taxation computations and advising on tax planning; insolvency work; the design of systems; special financial advice related to government policies; and various statutory duties in relation to the regulation of limited companies and their organization. (9)

The work seems to have its origins from ancient practices as it is already revealed in the business records found among the collections of the early libraries of Mesopotamia and Egypt. Among

the records which survived there are examples of military activities and the building of religious temples and monuments. Such large scale projects required estimation on the material and human resources needed as well as carefully planned statements on their sources - usually taxation and slavery.

In the Middle Ages trade increased and accounting records were developed as a means of controlling properties and other rights. A lord of a manor, for example, would have such a system in which the steward in charge of his resources would be required to 'account' for his activities and the resources under his management. According to B.V.Carsberg, that was the idea which produced the original use of the word 'accountant', or "one who is liable to give an account."<sup>(10)</sup>

The next phase in the development came with the industrial revolution which transformed the nature of accounting. Industrial activity became much more complex rendering inadequate the basic accounting for control purposes developed earlier. The rise of new organizational structures such as the limited liability companies brought about, for example, two new practices known today as the balance sheet, i.e. "a valuation of the net worth of a firm at a particular point of time", and the profit and loss account, i.e. "a statement of the increase in the value of the firm during the accounting period".<sup>(11)</sup>

As early as 1775 it was estimated that "five hundred young men were studying accounting techniques in the City of Glasgow alone."<sup>(12)</sup> and by the end of the eighteenth century - when an income tax was introduced - an accountant of some kind, whether he was a lawyer specializing in financial matters or a qualified apprentice, was to be

found on the staff of many large mercantile firms.

Accountancy work and the demand for it had developed to the point at which a need was felt for professional organization at about the same time it happened with the library profession. The difference between them was that many professional bodies were going to be formed in the accounting field catering either for a specialized type of accounting or for professionals who could not meet the entry requirements of other organizations. The Institute of Chartered Accountants in England and Wales was founded in 1880 and it remains the major qualifying body whose membership in 1972 amounted to 53,900. Next came the Association of Certified Accountants with 14,100, the Institute of Cost and Management Accountants with 12,700, the Chartered Institute of Public Finance and Accounting with 6,500 and some other smaller organizations.<sup>(13)</sup> These major professional bodies, since their establishment, have been involved with professional training and qualifications, and their examination syllabus are selective, reflecting their special interests from the wide range of professional functions. Their requirements have been broadly similar, involving some practical experience and success in professional examinations.

To become a member of the ICAEW, for example, the normal path would be: leaving school at about sixteen, starting a five-year period of 'articled' service with a principal member of the Institute in professional practice, and passing the three examinations set by the Institute. First, there was a basic test of general education which could be exempted by passing five subjects at GCE 'O' level; there followed the intermediate and final tests which comprised thirty-six

hours of examination. One usual complaint found in the literature was similar to the initial LA examination, namely, that they emphasized technical knowledge rather than analytical ability.

Perhaps this approach was a consequence of the apprenticeship system itself where the prospective professional worked closely with his senior, learning his techniques, standards and values in a way that little or no stimulus was given to the development of new practices or to fresh thinking about fundamentals. Later and working on his own, the accountant would rather tend to preserve tried practices than question their value or look for new and possibly better ways of dealing with problems.

It seems that the discipline of accounting, like librarianship, has had a pragmatic nature of development, with new procedures being devised or adapted to meet new practical problems posed by a changing environment, but without a theoretical rationale. This situation remained unchanged until well into the 1950's, despite the fact that some university studies of accounting had begun early in the twentieth century - in the University of Birmingham in 1906 and at the London School of Economics and Political Science in the University of London in 1919.

The number of accounting students in universities was small however (in 1948 it is believed that the number was no higher than seventeen students all over England), and some attempts have been made to raise the educational standards by encouraging the development of accounting in the universities.

One example of a voluntary scheme whereby prospective students could obtain both a university degree and a professional

qualification within less than six years, was devised by a joint committee of the universities and the accountancy profession. Fourteen universities in England and Wales were participating in the scheme when it started in the session 1966-67, students were usually members of the arts, economics or commerce departments, and the degrees taken were designated according to the practice of the university concerned, B.A., B.A.(Econ), B.Com., B.A.(Com), B.Sc.(Econ), B.Sc.Econ., B.Sc.(Soc.Sci). "The course of study proposed", says the booklet published by the Committee, "while affording the universities the medium for giving the student a liberal education and an intellectual discipline, is also intended to enable the student to understand the principles underlying his profession and to derive greater profit from his actual experience in the office."<sup>(14)</sup>

Everyone is quick to see the benefits which may come from graduate and postgraduate studies as well as research work carried out in the academic setting of a university to the theoretical foundations of a field which finds itself in the process of growing and establishing as a profession. But accounting activities are not controlled by a single body and a unified structure of educational policy is not easily arrived at among its professional institutions.

Just like in librarianship, there are some doubts regarding the intellectual content of the field. B.V.Carsberg, himself a professor of accounting at the University of Manchester, pointed out that with the exception of audit work - which requires a "reputation for integrity, supported by a code of ethical conduct" - most accounting activities have remained unrestricted until the present time. "Any person", he said, "even one with no relevant qualifications, may set

up in business as an accountant and offer advice on the whole range of accounting topics. Members of the professional bodies have to compete for work by demonstrating that they have specialized skill."<sup>(15)</sup>

Accountants were, in fact, meeting stiff competition for work, especially in industry, with the new group of financial experts, the management consultants, and also with the graduates of the newly-established British business schools. These market forces, together with a growing public disaffection regarding the lack of uniformity in accounting methods, have had a significant effect on the raising of educational standards and the search for a sound theoretical base for the profession.

The various professional bodies have taken separate positions but along the same development path, and the late 1960's saw the accounting profession embarking upon a new programme in which non-graduate students were required for the first time to undertake full-time studies of accounting at a Polytechnic or similar institution.

The examinations taken by new entrants are probably kept under firmer hold by professional bodies than does the L.A. in the library field but accountancy also seems to be firmly on its way to a graduate standing. This is not so much an internally generated achievement but a result from external pressures. The largest professional accounting firms, for example, are restricting their admissions substantially to graduates, which favours better salaries, higher status, and, in turn better able students being attracted to the profession - in 1975, 54.5 per cent of new entrants were graduates.<sup>(16)</sup>

Another trend common to the accounting and library professions is the realization that the education of their members is a lifelong

process. In this respect, the North-American counterpart of the Chartered Accountants, the Certified Public Accountants, are required from their members to attend some approved courses every year in order to retain their qualifications. This is a rather recent issue examined by the accounting profession in England, and the ICAEW, before 1974, had no other programme of education beyond that for basic membership. In that year the recommendations of an enquiry into professional education and training were published in the Solomons report<sup>(17)</sup>, and on this subject of postqualification education support was given to the idea of awarding fellowship by examination.

This report also recommended that the examinations of universities and polytechnics should be accepted by professional bodies which should confine themselves to a final test of practical competence before admission to membership; and that some course arrangements could be made as an interim step but that the long-term goal should be for a graduate entry to the profession.

A final word on the accounting education is that many of its important matters have not yet reached a settled state, but by the many similarities in its past developments as well as the many issues and concerns presently shared with library and information education, it will be interesting to be aware of the directions it will take in the near future.

## 6.2 Educational developments in banking

The traditional image of banks has been the monetary depositories involved mainly with short-term borrowing and lending, and the transmission of funds. The whole field however experienced massive



growth and revolutionary changes during the 1960's in developed countries, and diversified into a much wider range of activities and financial services to its customers. This new position was based upon the well-known great technological change after the last war and the development of the whole spectrum of local, national and international business community. The modern large banks have become complex business enterprises with new large-scale international interests and greatly involved in activities outside traditional branch banking.

This expansion in activities meant a blurring of the boundaries among banking, insurance, accounting and other financial institutions which, in its turn, meant that banking staff now need to know new subjects - for example, taxation, investment and leasing - and new business methods, since they advise personal or corporate customers on all sorts of financial matters.

In order to meet this expansion, an adequate system of education and training for banking manpower was required. The traditional pattern of training had been for staff to enter at the lowest level and progress to a managerial appointment after long spells of clerical and supervisory work. At some point during their career, they would take the Banking Diploma awarded by the Institute of Bankers - founded in 1880 in Britain and its North-American counterpart in 1899 - after successful examination on business and practical banking subjects.

The Council of the Institute appointed a working party in April 1972 to examine its qualifying role in both the formal educational programme leading up to examinations, and 'post-graduate' activities since, as its published report pointed out, 'the traditional

reliance on a mainly technical qualification was no longer adequate."<sup>(18)</sup>

The recommendations of the Wilde Committee envisaged far reaching changes in the formal educational programme, but not as quite on the postgraduate activities. "As far as the achievement of professional status in banking is concerned", it said, "the holder of a master's award would have no advantage over the holder of a first degree."<sup>(19)</sup> The Institute's position, however, is that the future of postgraduate qualifications will depend to a large extent on the value attached to them by the banks as employers, and it also acknowledged the initiative of some universities and polytechnics in developing such qualifications as well as proposed itself to co-operate with them.

With regard to the first educational programme, the Committee pointed out the drawback in the Institute's examination structure which for the great majority offered a single curriculum with no variation of level or course content. Considering also that students today tend to continue in education to the highest level which they are capable - which means that good school-leavers now go on to higher education - the report called for both greater variety of course content to allow for specialist interests, and the creation of different educational levels for different types of work : clerical, supervisory and managerial.

According to these three categories of staff, the Wilde Committee proposed a new three-stage structure for the Institute's qualifications, and candidates would be expected to take the most appropriate levels of study in the light of their pre-entry educational background.

In the first category, were included the clerical jobs which require technical expertise and some knowledge of the financial world. For this staff, Stage 1 would be appropriate i.e., a course in general business studies together with a paper on Elements of Banking.

Stage 2 is for the senior clerk/supervisory/junior management level which needs a more advanced course in applied business studies, a detailed knowledge of technical banking and an introduction to the principles of office administration. This stage could lead to the Associateship of the Institute (AIB) which requires a minimum of three years of practical work.

Stage 3 is intended for the management staff for whom the main emphasis in their studies would be on advanced banking and finance, together with relevant management topics. This stage, at degree level, could lead to the Institute's Management Diploma (MIB). The new scheme was approved and came fully into operation in the United Kingdom in 1975,<sup>(20)</sup> but obviously it will take some time before all changes can be implemented and their results fully appreciated. One example of gradual change can be seen in the tuition arrangements. Traditionally, banking education has been mainly an evening occupation in technical college classes or correspondence courses - no one would dream of full time study for banking ten years ago, even in the most advanced American schools.<sup>(21)</sup> Today, many universities<sup>(22)</sup> and polytechnics in Britain are providing courses on banking combined with other subjects on block release basis, in addition to the many correspondence or private studies still remaining.

It may be worth noting that full-time courses and professional qualifications are by no means the norm in other European countries as well. (23) In most cases, the public education system (providing a general educational base) plus the banks' internal training seem to be sufficient to provide all the banking education needed by their managers. On this aspect, it is likely that some kind of leadership is expected from the Institute itself, and that its policies on professional education will have great influence outside Britain, taking into account its worldwide membership - there were 30,000 overseas members in 1976, out of a total of 105,000 drawn from over 1,100 different banks in over 100 countries. (24)

Generally speaking, banking seems to have greater difficulties than librarianship in achieving the professional standards necessary to be regarded as a profession. First, its subject field is so clearly related to business that makes difficult any identification of its own body of intellectual knowledge. Second, its professional ethics or altruistic nature has been questioned on the light of the profit-making competitive, and self-interested ideals of the banking and business practice. (25) Third, practitioners and employers usually have a big say in decisions concerning banking education, and consequently the practicum element in its content is strongly accentuated. The banks as the employers have always directed the policies and provisions of the Institute of Bankers, as well as taken themselves for so long the task of training new entrants through their own training programmes and colleges. It is common to find in the literature, for example, reference to major banks with classrooms, conference and seminar rooms, individual instruction carrels, libraries, study rooms,

simulation laboratories, and audiovisual systems which include closed-circuit television equipment, studios, control rooms, and viewing rooms.<sup>(26)</sup> There has been a tendency however towards the teaching of banking being placed in universities, polytechnics or technical colleges where, perhaps, the academic element in its content may receive greater attention. The Wilde Committee reinforced this tendency when, while recognizing that some of the teaching would be carried out in the banks' own training colleges, it recommended for most of the teaching to be carried out in the public sector colleges "on both educational and expense grounds."<sup>(27)</sup>

Another modern trend of professional education reinforced by the Committee was the emphasis on the need for constant up-dating in the career-long banking education, and the Institute seems to be acting satisfactorily on this respect.

Finally, it can be said that banking is another field in expansion. The most important aspects of this expansion and its likely outcomes have been dealt with by the Wilde Committee. The professional education of its members has been through a test period, and some more time is needed before any real assessment can be made. It seems that its pattern for the future will depend on the extent to which the Committee's recommendations will have been put into practice as well as on the ways in which the profession will have reacted to the results by then.

### 6.3 Educational developments in the chemical profession

Three different lines of ancestry associated with the modern field of chemistry were identified by C.A. Russell<sup>(28)</sup>; its heritage of analytical techniques and attitudes from the assayers or craftsmen of the mines and metal-working shops in medieval Europe; second, the foundations of chemistry founded in the assorted traditions of the medical and para-medical profession (including pharmacists, apothecaries or druggists); and a third and longest held view by which the intellectual origins of chemistry would be in alchemy.<sup>(29)</sup>

This last belief, however, has been a constant source of embarrassment to many chemists, given the character of charlatanism which permeates this ancient practice. Contrary to most of the opinions expressed in the literature, D. Steele defended the reasonableness of alchemy on the grounds that it developed a logical and coherent structure, and it was, initially at least, directed towards a high ideal : the perfecting of matter. According to him "That base metals could be fairly easily turned into alloys which could be passed off as gold, and that such techniques could be the source of easy money, was not alchemy but pseudoalchemy."<sup>(30)</sup>

In any event, alchemy existed for a long period in history from about 300 B.C. (around the twelfth century in the West) to A.D. 1600, when it gave way to new developments in the field : from the 'iatrochemistry' or chemistry applied to medicine of Paracelsus and Van Helmont, and the 'modern' chemistry of Boyle and many others who dominated the history of British chemistry from the seventeenth to

the early nineteenth century, until the present era of industrial chemistry.

Despite the early associations with apothecaries and druggists have since long been broken - the Society of Apothecaries was founded in 1617, and the Pharmaceutical Society of Great Britain in 1841 - there is still a confusion of terms, typical of the English language, among them. Carr-Saunders & Wilson commented on the subject that, for chemists, "it is a source of annoyance that the only title which they can employ is also used by the members of another vocation who possess an alternative title."<sup>(31)</sup>

Chemistry is a basic discipline which began to be taught as a subject in its own right in Britain with the founding of the Royal College of Chemistry in 1845. Before this time, it was taught either as an option under the heading of general knowledge or an ancillary subject in medical curricula.<sup>(32)</sup> It was defined as "that branch of science which is concerned with the composition and properties of substances and the changes which they undergo"<sup>(33)</sup>, and its traditional divisions are: organic, inorganic and physical chemistry.

Nowadays, it has application in a wide range of other fields such as biology, geology, engineering, medicine, agriculture, and the arts among others, so that its professionals have the choice of either work in the field - in this case finding their way in food, textile, pharmaceutical and other industries, or in teaching, or in medical officers of health - or they can use their chemical education as a route to other professions which apply its principles.

Despite this application of chemistry to practical needs since the early stages of the industrial revolution, the education of

the chemist is considered less vocational than that received by most professionals. The (Royal) Institute of Chemistry, established in 1877, determined then the fundamental academic principle which still today is the basis of qualifications for professional chemists. Its associateship, for example, requires from the student "a systematic course of three years' training in theoretical and analytical chemistry, physics and mathematics" with the emphasis being on "sound training in the principles of the sciences rather than vocational training."<sup>(34)</sup>

The Institute was founded with the explicit goal of training professional chemists and indicating standards and curricula, since there was already the Chemical Society, created in 1841, but whose Charter did not include the responsibility for the training of chemists. During 1971 arrangements were made for the amalgamation of both institutions, which was implemented in 1972 - under this scheme the Chemical Society would continue to be concerned with basic chemistry, and the Institute with the professional status of the chemist. There are also other professional bodies and negotiations have been made for a unification of all of them so that a single body would represent all the interests of chemists and chemistry in Britain.<sup>(35)</sup>

With regard to the early education of chemists, it had more academic beginnings than that for accountants, librarians and other professionals. In addition to the tone set by the Royal College of Chemistry, the discipline was among the science subjects which were then becoming the focus of attention of schools, industries and the government itself. The Society of Arts, and the Department of Science and Art, which had been established as a result of the enthusiasm for



science and technology generated by the Great Exhibition of 1851, instituted a series of examinations in scientific subjects by the late 1850's with the aim of raising the standards of science education as well as encouraging the application of the sciences to practical problems.

By the late 1860's however, it was realized that formal academic training in the principles of science was not sufficient to provide complete training of a professional in any field <sup>(36)</sup>. Thus, it was suggested that prospective chemists should follow a period of apprenticeship or pupilage after formal scientific training, as well as undergo a system of examinations in order to get their professional certificate.

The point was that the Chemical Society was not a professional association, i.e. not interested itself in the education and status of chemists, and the education and training in chemistry remained entirely under the sphere of the several universities and colleges throughout Britain, until the foundation of the Institute of Chemistry which took for itself the goal of "...raising and establishing the status of the chemical profession, by drawing a marked distinction between duly qualified practitioners and others, and by promoting the acquisition of such knowledge and skills as are necessary..."<sup>(37)</sup>

The Institute today has the functions of a qualifying, examining and professional body. It services the Joint Committee for Higher National Certificates and Diplomas in Chemistry and Applied Chemistry, and the Committee for Ordinary National Certificates and Diplomas in Sciences. It also has its own examination for the Graduateship which is considered equivalent to a good honours degree in

chemistry.<sup>(38)</sup> The other grades of its membership are: licentiate-ship for chemists with academic attainment equivalent of a good pass degree, and a period of approved experience in practice; associateship for those who have passed the Institute's examination or its equivalent qualification and have had a minimum period of two-year experience in the practice, application or teaching of chemistry; and finally, the fellowship for those who have attained a "high level of professional maturity and responsibility in any field that promotes the advancement, application or teaching of chemistry."<sup>(39)</sup> In its third function, the Institute is concerned with the professional status of chemists as well as their ethical conduct. Under its Royal Charter, it is empowered to act in consultation with Government and employers of chemists in matters relating to conditions of employment and general welfare of its members. It is interesting to note that the Institute has been carrying out surveys of earnings of chemists for more than thirty years and it is greatly involved with these matters despite the formation in 1917 of the British Association of Chemists which is registered as a trade union.

In a general survey of chemical education in Europe, the United Kingdom reported a declining number of students entering universities and polytechnics to study chemistry during the early 1970's<sup>(40)</sup>, and M. Tomlinson pointed to two factors contributing for it: the adverse publicity given to chemistry by the mass media - "Chemistry is blamed for most scientific 'mistakes' as the problems of pollution, energy and resources become major public issues" he wrote - and the lack of job opportunities for chemistry graduates, a problem, according

to him, created by the "stop-go-stop policy of the major chemistry-based industries towards the recruitment of graduates".<sup>(41)</sup>

Statistics published by the Chemical Society in 1974 seemed to confirm this trend - it showed that only one in ten of chemistry students in English schools goes on to read chemistry at a university<sup>(42)</sup> - but less students in university chemistry courses do not necessarily mean that the discipline is attracting less students nowadays. There are for example, part-time or shorter vocational courses outside universities leading to careers such as laboratory assistants, and also many students continue their studies attempting to use their chemical knowledge to solve problems in other fields of enquiry.

It seems that the realization of the close relationship between the work of the chemist and that of the physicist, the biologist, the mathematician, or even the engineer, the architect or the economist greatly contributed to radical change in the content of chemistry courses and teaching methods during the last twenty-five years or so. Signs of change appeared first in the United States in the late 1950's through new departures in content - aiming at making it less factual and more a matter of principles - and using new integrated approach in its teaching emphasising the natural inter-disciplinarity of chemistry itself.

In England similar developments were initiated by the Nuffield Foundation, followed by several schools at secondary and tertiary levels. An early example of this integrated approach occurred in 1961 at the University of Sussex with the establishment of the School of Molecular Science. I. Gottlieb gave this account of the school's activities:

"This school is concerned with the whole range of molecular phenomena, from the properties of simple diatomic molecules of theoretical interest to the chemist and physicist, to the macromolecules of biology and technology. A special feature is the integration of physics and mathematics with the chemistry. Quantum mechanics, statistical mechanics, atomic structure, along with the supporting mathematics are taught by the physics staff. The chemistry staff provides the instruction in molecular structure, crystallography, and molecular spectroscopy. In the final examination there is a common paper in physics and chemistry on topics so studied." (43)

Like in the library profession, many people have criticized this move towards principles and theory on the grounds that chemistry is basically an experimental science and so the practicum element should be the predominant one in the education of its professionals. And again similar to the library profession, chemical educators seem to be looking for a balanced approach. J.D.Gómez-Ibáñez expressed an often agreed view when he said that:

"if we are to convey to our students a real feeling for what chemistry, is, we have to bring out and emphasize that interplay between the empirical and the abstraction, always pointing out the context and circumstances under which the abstraction is made." (44)

The practical work is considered an essential part of chemical education - in both HNC and HND it accounts for 60% of total time<sup>(45)</sup> - but there has been a tendency to diversify its range as well as to integrate it more closely with theoretical work.

It can be noticed that strong links exist between industry and academic institutions with well established schemes of co-operation particularly in the United Kingdom, Germany and Switzerland among other European countries. In England, a Committee was set up in 1966

to enquire into the relationship between universities' courses in chemistry and the needs of industry for, at that time, there was criticism of the universities for their first degree course in science which produced graduates interested in careers in pure research only. The report of this Committee published four years later presented "no startling revelations and no drastic proposals for reform",<sup>(46)</sup> and considered that the relationships between industry and university chemistry departments were generally sound. Referring to the first-degree courses, the Committee recommended that it should continue to combine general intellectual education with a basic vocational training which was seen not as an introduction to all aspects of chemistry but rather as an adequate background of information. It considered much more important that the graduate:

"should possess enthusiasm, open-mindedness, and the willingness and ability to acquire the specialized knowledge he subsequently needs than that he should have attempted to gain all the skills or range of knowledge necessary for immediate competence in all the posts open to him."<sup>(47)</sup>

The report expects some participation from industries as employers in the further education of newly graduates - especially those who do not intend to follow post-graduate studies - by providing up-to-date information on modern industrial processes as well as training opportunities so that the professional can strengthen and direct the acquired principles and skills to the particular area in which he is going to work.

Besides the application of chemistry in industry, it has also been emphasized the application of chemistry in everyday life at both school and university level. P.J.Farago & M.J.Fraser gave the example

of African students being examined on their knowledge of snow by remote examiners in European universities.<sup>(48)</sup> as a thing of the past. As it can be seen in the international surveys and publications already mentioned, there is a movement in both developed and developing countries to teach students about the materials of the immediate world around them and to make chemistry more relevant to their surroundings and everyday experiences.

Other current trends observed in the professional education of chemists are: chemistry is a rapidly expanding subject and the education of its professionals has also been changing during the last years; development of new curricula by course teams, producing whole sets of learning materials and emphasizing the interdisciplinarity of the discipline; individual learning methods and the heuristic or 'guided discovery' are more frequently used; students are required to understand and apply chemistry rather than to recall facts; and finally, there has been an increasing provision of courses in chemistry for non-science specialists for as a basic discipline it is applied in many other fields, and also there has been a recognition of its social implications and influences on people's lives.

Chemistry has become a diffuse discipline. The notion that it is neutral and free has been replaced by a more 'humanized' approach. As the American Chemical Society pointed out:

"Particularly in the first year, special efforts need to be made to give students an appreciation for, and historical insight into, the immense impact of chemical science on thought and technology and the significance for nations and for man and his environment of synthetic chemicals and chemical transformations in agriculture, industry, medicine, and other segments of a modern, technological society." (49)

#### 6.4 Educational developments in the architectural profession

Architecture is traditionally regarded as the art of building following man's requirements of shelter and warmth. One turning point from primitive building to architecture must have been the introduction of an element of measurement in the construction of shelters. The most ancient buildings known to have been constructed on preconceived geometrical plans are Sumerian temples of the year 4000 B.C., and from that time until this century, the development of architecture has been identified with the erection of temples, churches, palaces, schools, houses, etc., i.e. the design of single buildings.

In its modern concept, however, architecture is concerned with the environment in which people live, and this includes a building, a city street, a park or any other space between the buildings. The empirical nature which dictated the origins of his field is still valid in that the modern architect's major concern is the health, safety, and welfare of his client and the community at large with regard to shelter. But he is also concerned with the shape and planning of the external environment and the effects from the industrialized building methods presently used. His new expected role is to integrate his individual works or the parts of a city into a harmonious whole.

During the seventeenth and eighteenth centuries architecture still ranked with painting and literature as an art rather than a profession, although there were some architects at certain times who were "scarcely distinguishable from builders and contractors" to use A.M.Carr-Saunders & P.A.Wilson's words.<sup>(49)</sup> According to these

authors, there was a growing commercialization of building as well as the invention of new materials - such as the white brick and new kinds of cement - which attracted the interest and commercial participation of many architects. But these were soon to be 'rescued' by some of their noble colleagues as well as the Architects' Club - their first society and an extremely select body.<sup>(50)</sup> founded in 1791 - which manifested itself against improper relations between architect and builder.

Other societies came into being such as the London Architectural Society in 1806, the Architectural Society in 1831, and the Institute of British Architects in 1834 which thirty two years later became by Royal Command the Royal Institute of British Architects (RIBA). With the other bodies either extinct or absorbed by it, the Institute has held since its beginning a dominating position in the architectural profession, even after the foundation of other bodies later on..

According to its Address and Regulations published in 1835 the Institute was founded

"for facilitating the acquirement of architectural knowledge, for the promotion of the different branches of science connected with it, and for establishing a uniformity and respectability of practice in the profession."<sup>(51)</sup>

There were no initial provisions for its direct involvement in the education and training of the new members, and suggestions of the institution of examinations for students and the granting of a diploma to successful candidates were met with hostility by many of the Institute's members who took the view that 'art cannot be taught'. The process was rather slow but eventually the Institute became an



examining and qualifying professional body - after May 1882 all those engaged in the study of architecture would be required to pass an examination, and the 1887 charter conferred on fellows and associates the right to use the initials 'FRIBA' and 'ARIBA' respectively.

The other institutions at that time involved with the education of architects were the Royal Society of Arts - then the Royal Society of Arts, Manufacturers and Commerce - which was founded in 1740, and included a school of drawing, and the Royal Academy, formed in 1768 and described in 1933 as "the most successful architectural school in this country until very recent years." (52)

Although there are some references in the literature to full-time courses as early as 1891<sup>(53)</sup>, the traditional apprenticeship system of training remained in effect until after the second world war. It was usual to become articled despite the fact that the Institute did not demand actual evidence of service under articles. The prospective architect could then follow some correspondence, evening or part-time course before taking the RIBA's examinations, which constituted of four stages: intermediate, parts one, two and three. The fellowship remained open to any architect of seven years' standing.

Due perhaps to its relationship with the arts, architecture did not seem to have encountered the reluctance of being regarded as an academic discipline as had accountancy, librarianship and other 'technological' subjects. A number of universities had been setting up schools of architecture since the early 1900's and they gradually secured exemption for their students from the intermediate and parts one and two of the RIBA's examinations - the part three or final examination is until today required from all the students, and is

conducted by each school with examiners drawn from the profession. By 1920 the Institute had set up a Board of Architectural Education responsible for both the examinations and for the recognition of schools for purposes of exemption.

It seems to have been the Institute's own policy to replace the old system of articled pupils in architects' offices by full-time instruction. It manifested itself in favour of this change at the RIBA's Oxford Conference in 1958 as well as in a series of documents it produced some years later following an important survey into the profession. <sup>(54)</sup>

The apprenticeship system was formally abolished in 1968, and direct entry to the RIBA's own examinations - which was the main means of qualification for most until thirty years ago - is now only permitted for certain special categories of candidates such as architects with overseas qualifications not recognized by the RIBA, mature candidates, corporate members from other related professions - e.g. the civil engineers - and a few others.

The normal pattern of architectural education today in the United Kingdom consists of five years' full-time education at one of the thirty-four recognized schools of architecture - sixteen of them at universities and eighteen at polytechnics and equivalent institutions - together with two years of professional training in practice under the supervision of the schools. At the end of the first three years a first degree - an Honours B.A. or B.Sc. - may be awarded. There is then usually a break of one year of practical experience, followed by a further two years of full-time study and another year of office experience leading to a graduate diploma - Bachelor of Architecture

degree. The full-time course may be shorter in some schools which may also award degrees and diplomas at different stages in the students' careers. The practical training period used to be one year until November 1962 when the extension came into force after an investigation carried out for the Board of Architectural Education on all aspects involved in the practical experience and whose findings and recommendations were published in the Layton Report.<sup>(55)</sup>

The seven years culminate in professional examinations which leads to registration under the Architects' Registration Acts 1931 and 1938. Architecture differs on this aspect from the other professions mentioned so far in which it has a body specially established for this purpose : the Architects Registration Council of the United Kingdom (ARCUK). It is the statutory body, and the persons on its register have the right to the membership of the RIBA which is voluntary but generally regarded as professionally desirable. In 1973 the RIBA had 21,000 members of which about 5,600 were resident overseas. At that time there were some 24,800 names on the register of the ARCUK and this figure, according to A.R.Males, represented "the highest number of architects per head of population in the world."<sup>(56)</sup>

Another peculiarity to be noticed is that although no one can practise as an architect in the United Kingdom unless he is registered under the Registration Acts, the practice of architecture is actually not restricted to architects. This is so because both acts protect only the title 'architect'. Several attempts have been made in the past to confine the work of the profession to those qualified<sup>(57)</sup> but they did not seem to have succeeded.

Perhaps connected with this problem, there seems to have been in recent years some difficulty in identifying clearly the work of the profession itself. Change in the structure of architecture has been substantial since the early 1960's in all public, industrial and commercial, and private sectors with the major innovation in large multidisciplinary organizations offering all-in, complete design services. Even in small scale projects the trend has been increasingly towards team-work with architects, engineers, builders, surveyors, economists, planners, designers, accoustic consultants, and other professionals involved in complex architectural problems created by urbanization. In 1962, E. Layton wrote in her already mentioned report on practical training of architects : "The profession is in too great a state of turmoil about the functions of the architect and his relation to other parts of the building team for there to be much general agreement about the education he should receive."<sup>(58)</sup> In 1964, the Tavistock Institute of Human Relations was commissioned jointly by the building professions to undertake a study of relationships within the construction industry, and its findings were published in two reports : one dealing with the traditional pattern of communications in industry<sup>(59)</sup> ; and the other dealing with the relationships between the parties to building design and production<sup>(60)</sup> . In this second study, two characteristics of the building industry were distinguished : firstly, the interdependency between designers, manufacturers, suppliers, specialists, and so on; and secondly, the uncertainty of the participants concerning their changing roles, relationships and responsibilities.

These characteristics seemed to be in a marked contrast with the clear, rigid and formal characteristics of the nineteenth century architectural profession which had then already progressed from a totally artistic status to a position where it was recognized as an art involving professional knowledge.

Architecture has moved even further during the last twenty years, and it is today increasingly dependent on technology, subject to the research of social scientists, and with a wide range of employment and allied activities open to graduates such as city planning and urban development, teaching, research, business management, construction management, real estate and financial consultation, interior and furniture design, programming, graphics and several others. Consequently, there has been an enlargement of the role architect is asked to assume nowadays. His duties may include advice on choice of site and on legal restrictions, the conception of the project, the estimation of all services and mechanical installations, the supervision of the erection of the building, and the identification of all problems and needs. The project may be as simple as a private house, or as complex as a hospital or a library; also, the architect may work alone or in a large team. The varied range of activities and the scope of the architect's involvement was described by A.R. Males as "one of the fundamental problems of architectural education."<sup>(61)</sup> He argued that with the wide range of topics covered in an architectural syllabus there is a danger that the base discipline may be lost through inadequate definition in the weight of supplementary material. He then called for a precise identification of the core theme and the selection of subject content<sup>(62)</sup>.

The same author indicated that "concern about the identification of design as a discipline in its own right is a feature of the last decade"<sup>(63)</sup>, but today there seems to be general agreement that it is the central or core discipline of architectural education. The structuring of courses in architecture seems to be a matter of approach to design, and - perhaps due to the relatively recent emphasis it has received as the core theme - many different approaches have been used to it : design as innate skills and flair, design developed by specially devised techniques, design as creative decision-making, and so forth.

In the United States, the courses usually have a core of design - graphics, landscape architecture, engineering, and urban design - and building technology, supplemented by options on mechanical equipment, plumbing, heating, ventilation, air-conditioning, lighting and power distribution<sup>(64)</sup>. With less emphasis on technological subjects, a typical course in England might include : theory of design, environmental studies, building science, history of architecture, building services, structural design, urban design, landscape design, appreciation of art, professional practice, law, building economics, and management<sup>(65)</sup>.

Management was introduced in the curriculum in the early 1960's after being recommended in the already mentioned study by M.Austin-Smith et al. At the beginning it was confined to a few schools and a few senior courses for experienced architects. Today it is an integral part of the general teaching in the first three years, and through special courses in the fourth and fifth years; and intended among other things, to increase the efficiency of architects in

the organization of their work, to cover the law and ethics of professional conduct, and the roles of the other members of the building team.

The professional training aspect of the course is jointly undertaken by the school and the profession at large. The trainee architects receive a full salary during their periods of employment. The profession provides the employments, and the offices are selected and supervised by the schools which lay down a pattern of training to be covered by the trainees. According to E.Layton, one of the objectives of this scheme is to integrate school and practical training throughout the seven years, and to place the main responsibility on the schools for co-ordinating the whole and integrating theory and practice.<sup>(66)</sup> The examination at the end of the seventh year is intended to test the effectiveness of the two-year practical training period, and it includes a professional interview and an oral examination.

Another practical element in the course is the studio work which the Layton report criticized for absorbing too much of the official working time - it had then twenty hours a week. The alleged reason was that design is the dominating function of the architect and, perhaps more important than this is that Visiting Boards assess a school on these students' portfolios of drawings as well as award certificates for good performances on them.

Visiting Boards are the means by which the RIBA and ARCUK maintain a supervisory role in relation to architectural education. They examine each recognized school every five years on the aspects of resources and the content and format of the courses. They are said

to maintain a live and direct link between the aspirations of students and educators and the realities of practice, and their comments are taken seriously by the visited institution. No one can deny, however, that it is rather peculiar to have the authority of a Visiting Board within a traditionally independent institution such as a British university. (67)

That is one way found to maintain the professional standards achieved since the early 1960's when the decision was taken to move architectural education towards the university sector and academic respectability. Until that time, research had not been recognized as a possible road to professional qualification. The Layton report recognized the insufficiency of postgraduate work and the need for fundamental advances in architectural knowledge. "Architects", it pointed out, "have not in the past concerned themselves nearly enough with the basic development of new ideas and new techniques". (68) And as a means to encourage postgraduate work and research in Schools of Architecture, it recommended that a year of approved postgraduate work or research should count as part of the two-year period of practical training.

On the other end of the scale, there are provisions for the qualification of the architectural technicians, normally through a day release or block release basis courses at a college, supplemented by evening study. In addition to this part-time study on building technology and many other subjects, the training of technicians involves a period of work under the direction of an architect and an oral interview. They are offered three grades of membership - probationer, student and member - by the Society of Architectural and



Associated Technicians (SAAT) which was inaugurated in 1965 as an Associated Society of the RIBA.

There are signs of change for the future professional education of architects. With the growing volume and scope of specializations in the field, the role of the general-practitioner architect and the traditional pattern of courses have been questioned. It has been suggested that architecture should be made a postgraduate subject preceded by a general first degree. A.R.Males pointed out that it was being discussed in Manchester University the possibility of establishing a non-professional, non-vocational course in architectural studies, drawing heavily on the social aspects of the field, and according to this author, "the long-term prospects for such a course appear to be good."<sup>(68)</sup>

Several schools have made tentative proposals towards restructuring but it seems that the pace of change within the system of architectural education has been slow in the 1970's due, perhaps to the period of economic uncertainty which affected the profession and the construction industry as a whole. It may be that architecture and all the other professions will have by now learned not only to live with the present recession but also to use it as a stimulus towards changes, in which case the outcomes will be seen in the near future.

## 6.5 Educational developments in the engineering profession

Closely related to architecture is the engineering profession. Perhaps the principal difference between the work of the engineer and that of the architect is that in the first, practical considerations are ever present, while in the architect's job there is still some element of artistic creativity involved.

The Chambers' encyclopaedia considered engineering, in its broadest sense, that "branch of human endeavour by which the forces of nature are brought under human control and the properties of matter are made useful to man in structures and machines."<sup>(69)</sup> The engineer draws upon existing knowledge and skills for practical ends, and the result may be not only structures and machines but anything from a pin to a space shuttle, from a new cross-bred type of corn to a bridge, from a child's toy to a nuclear power station. It is his concern to organize the conception, design and manufacture of these things, to assess the resources available and to estimate in advance the time and money to be spent on the work.

Engineering has been identified with almost every kind of human activity since it began with the rise of urban civilization in ancient times, with the purpose of fulfilling human needs or desires that an agrarian society could no longer cope. The early regions of development were in turn: Mesopotamia and the Near East, Egypt, Greece and Rome - the Western World was reached only after the Renaissance.

The oldest branch of the profession is that which concerns itself with the design and construction of roads, canals, bridges and

structures of all kinds, at first for military, later for civil, requirements - hence 'civil' engineering. Nowadays, it denotes generally the kind of engineering required by public authorities. It was established in England about the middle of the eighteenth century, and recognized as a profession by the end of that century. This process was greatly furthered by the foundation of the Institution of Civil Engineers in 1818 - incorporated by Royal Charter ten years later - which had the object of "facilitating the acquirement of knowledge necessary in the civil engineering profession and for promoting mechanical philosophy."<sup>(70)</sup> During this early period, the Institution included among its members all engineers of national reputation regardless of their specialized knowledge.

The second branch of the profession is mechanical engineering which concerns itself with the design, manufacture, operation and maintenance of all man-made machines, regardless of their kind or size, together with machine tools. It has been recognized as a profession since the early nineteenth century, by which time the application of steam power to the driving machinery in factories, winding in mines, propulsion of ships and to railways had consolidated the new source of energy as reliable, and given an enormous impetus to the field.

The last of the three main branches is electrical engineering, dating from the second half of the nineteenth century, when the invention of the dynamo, among other developments, provided the means of converting mechanical into electric energy, and electric lighting and power were introduced on a modest scale. Nowadays, huge and powerful generators are being built, with their transformers, cables and switchgear. The field has also developed giving rise to electronic

engineering, including radio, television, video recorder, the electronic computer, micro-processors and all sorts of new computerized devices.

In fact, all three great branches of the engineering profession have in their evolution produced a large number of specialist subdivisions, each relating to some function or to some particular plant or operation. Thus, we can hear today of such fields as mining engineering, metallurgical, chemical, electronic and radio, gas, marine, structural, production, or even genetic engineering.

With such diversity, it is hardly surprising to find that there are fifteen specialist institutions within the engineering profession in Great Britain. The total corporate membership - i.e. excluding student members - of these bodies in 1973 was about 200,000 of which 112,800 represented the membership of the 'Big Three', i.e. the organizations of civil, mechanical and electrical engineers.<sup>(71)</sup>

The profession, however, seems to be able to keep a certain degree of unity, by linking all specialist bodies to the Council of Engineering Institutions (C.E.I.), which is a chartered body formed in 1965 with the special function of establishing standards for the qualification of professional engineers. The fifteen institutions continue to regulate the conditions of admission to their own membership, and only those who have become corporate members of one of them and who are nominated by it to the CEI can be registered as chartered engineers.

The CEI's own examinations also reflect a unified approach. The Part I is intended to represent about one year of the work required for a degree, and consists of four compulsory papers - Mathematics,

Mechanics, Properties of Materials and Presentation of Engineering Information - to be taken by all candidates, whatever their specialisms, plus two out of four options. In the Part II examination, all candidates must take the compulsory paper 'The Engineer in Society' and five other subjects specified by the individual institution that the candidate wishes to join.

The CEI, however, provides an alternative route to the status of chartered engineer. The profession has, in fact, a long tradition in the formal instruction of its future members within educational institutions. As early as 1747, a school for the workers of the Corps des Ponts et Chaussées was founded in France and became known as l'École Nationale des Ponts et Chaussées, which is considered the first school of engineering in the world.<sup>(72)</sup> Other schools followed in France and the practice spread to other European countries and the United States as well. In Germany a mining school was established in 1765 and a surveyor's school in 1799.<sup>(73)</sup> In the United States the Military Academy at West Point was organized in 1802 and its curriculum was set up to provide engineers for civil and military purposes.<sup>(74)</sup> A real impetus to the development of engineering education came with the passage by Congress of the Morrill Act, already mentioned in the last chapter. The number of institutions offering engineering programmes between 1860 and 1890 increased from 6 to 110, spread in land-grant colleges, state universities, and private institutions of higher learning.<sup>(75)</sup> In Great Britain, Norwich University was established in 1819 and offered the first engineering courses - perhaps it should be remembered that engineering was among the few subject-areas related to newer professions that were accepted by the

British universities of the nineteenth century - King's College had a department of engineering in 1838; chairs of civil engineering were founded in Glasgow in 1840 in Edinburgh in 1868, and in Cambridge in 1875. (76)

The Industrial Revolution was undoubtedly the main driving force behind the emergence of new kinds of engineers and a new system for their education and training. Until that time the apprentice method was used, and some knowledge of art and of mathematics together with some intuition and experience was everything to be required from prospective engineers. The increased scientific and mathematical knowledge required of engineers and the expanding demand for them generated by the Industrial Revolution, however, made the apprentice method no longer adequate. It was felt the natural need for the organization and transmission of a codified set of principles and practices of the best engineering practitioners in order to ensure some minimum educational standards from all members of the profession. As A.M.Carr-Saunders & P.A.Wilson pointed out, "the great engineers of the eighteenth century were in fact of very mixed origin and of very different standards of education" - some were fellows of the Royal Society while others could scarcely read or write. (77) It could also have helped towards this situation the fact that individuals from different levels and trades were working as professional engineers in the then newly-established engineering industries : the makers of textile machines, steam engineers, boilers, locomotives, mining pumps and winding engines needed professional engineers and due to their shortage, their places had to be filled by carpenters, clockmakers or by anyone who was used to working in wood or metal and could set up

wheel work or fit parts of machinery together.

It may be worth noting that at that time there were two distinct groups in the engineering industry - the engineers who were the technically trained white-collar workers and who were, roughly speaking, professional men, and the mechanics who were the skilled manual workers but not considered as belonging to any order of professionals. Today the word 'engineer' is used to describe both groups of professionals, and this confusion may be responsible for the relative low social status of the engineer in Great Britain, when compared to other countries - in Brazil, for example, the engineer is a peer of the medical doctor and enjoys high status and great prestige in society. Thus, as it has often been pointed out in the literature dealing with engineering education, it is important to distinguish between the engineer at professional level, with his comprehensive training and responsibilities for overall concepts and organization, and the skilled or semi-skilled engineering worker in a factory or on site who is concerned only with the practice of a trade and has no higher responsibilities. (78)

There is, however, no ambiguity in the meaning of the term Chartered Engineer (C.Eng.), denoting a person admitted to one of the chartered engineering institutions and who had completed satisfactorily the following requirements laid down by the CEI :

- "a. education at degree level;
- b. training in the practice of his profession;
- c. a period of responsible professional experience in an appropriate field of engineering." (79)

Items a and b normally occupy about five years in total, and item c at least a further two years. There are several ways in which the

required academic and practical training can be combined - the student can enter a university or polytechnic direct from school at the age of about 18, and on graduation join a firm or industry for practical training; or he can join a firm immediately on leaving school and start a full-time degree course after a year's practical training or even spend a series of alternate periods of about six months each in industry and in college until the total time has been completed. On completion of the degree, a registered student usually becomes an Associate Member of the chartered engineering institution of his choice. The particular institution also lays the requirements to be met by him in the practical training whose organization, unlike what happens in the architecture profession, is left more to the industries than to the schools themselves.

At the final stage before admission to chartered status, namely the acquisition of responsible experience, the young engineer will be offered a staff position in an office, workshop or laboratory, or on site, entailing a modest degree of responsibility.

One aspect of engineering education which may be of interest to library and information studies is that despite the wide range of different branches of engineering, the profession seemed able to have identified the essential unity underlying them all. A.J.Morton pointed out that :

"they are all subject to the same natural laws governing stress, motion, vibration, temperature and other fundamental factors, and thus the same types of calculation are applicable to all."<sup>(80)</sup>

These common laws and principles are present in most courses, especially at the beginning, giving the student the possibility of



transferring from one engineering degree course to another up to the end of the first year. In the Part I of the CEI examination also no specialization is required on the choice of options in order to facilitate easy transfer from one branch to another at that intermediate stage.

In any event, there seems to be a core of studies which all engineering students are required to take. A.J. Morton, himself a professor of mechanical engineering at the University of Manchester, identified these central subjects as "mathematics, the properties and strength of materials, the fundamentals of heat and power (thermodynamics), the motion of fluids, the basic laws of a.c. and d.c. circuits and machines, computation and engineering drawing".<sup>(81)</sup> To these, he added the subjects of management and control of people and organizations which have been taught to an increasing extent in most schools.

This author also believes that the student who has reached degree standard should be able by his own further study, to master any additional specialized engineering subject necessary in his new employment. On these lines, even the student who knows the particular field he is going to work in the future, is advised not to enter one of the more specific courses available nowadays for they usually limit the student's scope of future work.

D.Brancher went further on this point of specialization when he stated that:

'Any tendency on the part of the engineering graduate to see himself as 'electrical' or 'production' and to build a high protective wall around his self-concept, limiting both

his terms of reference and the applications of his skills, not only prevents the wider contribution of engineering in society, but also, understandably, lowers both the status and attractiveness of engineering as a profession." (82)

Traditionally the English schools of engineering have been concerned with general education and moral or personal fulfilment of the students - research has received the equivalent emphasis in German higher education, and professional competence and service to the state in the French technical education of the engineer - but utilitarianism in technological education was predominant during the first half of the twentieth century, due perhaps to economic pressures and the impact of two world wars. In its presidential address to the Institution of Mechanical Engineers in 1960, O.A. Saunders pointed out that:

"the present age of specialization in engineering is giving way to a realization that there is more in common between the different branches than is first apparent; the present divisions of engineering are transient and likely to give way to a closer integration of the engineer's work." (83)

It seems, in fact, that during the 1960's and 1970's the idea of developing the human being's potential returned to Great Britain and the United States where educational programmes in engineering have been at the centre of interdisciplinary experiments - many of which were mentioned in the previous chapter - aiming at integrating disciplines from the humanities and social sciences into technological and scientific subjects. The need for capable management also helped towards this approach, together with an increasing public awareness of the social implications of technological innovations

brought about by scientists and engineers alike and, generally speaking, engineering education nowadays reflects an attempt to impart to the future engineer this social responsibility and the aspects of their job which go beyond technology.

One example of such an attempt is the CEI examination subject 'The Engineer in Society'. The field covered was described by the CEI as "exceptionally wide" and comprising aspects of "history, sociology, economics, management, legislation and communication."<sup>(84)</sup> Previous examination papers included questions like: to rewrite in a direct, clear style, a passage given in verbose and woolly language; to discuss whether an engineering organization which found itself in financial difficulties should be given financial aid by the Government; to suggest what notes an engineer might make to prepare himself to take part in a television discussion programme on 'Man's desecration of his environment; to discuss how to keep abreast of new developments and techniques in his field; and to discuss about the effect of computers on the role of managers in industry.<sup>(85)</sup> In addition to requiring the participation of the engineers in the solution of social problems and in many other non-technical aspects of modern life, this broad subject represents a cohesive force among the engineering profession as a whole.

Another interesting feature in engineering is that it is a three tier profession in Britain. In 1971 the Engineers' Registration Board (ERB) and Composite Register were set up by the CEI and it is made up of three autonomous sections devoted to the three levels of professionals recognized within the profession : the chartered engineers - whose academic standard had already been mentioned; the technician

engineers (T.Eng.(CEI)) - whose academic standard should be roughly exemplified by an H.N.C. plus a period of five years engineering experience; and the engineering technicians (Tech.(CEI)) whose basic requirements are a minimum age of twenty-one, the equivalent to an ONC., and three years engineering experience. Professionals in the last two categories should also be members of one of the societies listed in the Technician Engineer Section of the ERB.

In the North-American system of education for engineers it has been long recognized the need for a second-tier of professionals with skills in such fields as drafting, technical design, assembly, construction maintenance, among others. So, a number of technical or 'mechanics' institutes were established at the beginning of this century, providing a separate training system for technicians through a two year certificate or diploma. The bachelor's degree is the basic professional degree but the student who wishes to continue his studies has the following choices: the master's degree which usually consists of one full year of graduate work; doctoral programmes, consisting of three years of full-time work; and the intermediate degree which involves one year of study beyond the master's degree and a design project or report demonstrating the student's professional proficiency rather than his research ability.<sup>(86)</sup> The provision of opportunities for continuing education, like in Britain, has received much attention from schools and professional organizations, with a specially appointed committee in 1964 to survey the scope of the problem and to recommend proper action.<sup>(87)</sup>

A final word on the engineering education in Britain is that, like all previously examined fields, it has also been undergoing a

process of change, although this may happen at a slower pace, specially due to the complexity of a profession having so many branches. In the field of civil engineering, for example, a committee was appointed by the Council of the ICE in 1973 to look into the whole field of education and training of its members. The report, approved and published in 1975, pointed the way to radical changes in the next ten years - one of the recommended changes was a post-graduate course of some kind prior to admission to corporate membership. (88) It is likely that such trends will be followed by other engineering branches for it is of their interest, as well as their members' - to have the basic similar requirements and to raise the education and training standards of the profession as a whole.

#### 6.6 General considerations from the survey

Although the forerunners of contemporary professions were in existence many centuries ago - the Inns of Court in Britain, for example were established by 1400 and the Royal College of Physicians of London was founded in 1538 - the rapid growth of professional occupations is clearly a phenomenon of industrialization and the new lines of thinking brought by its consequent scientific and technological expansion. These new developments in science and technology crystallized into techniques which provided the basis of new professions, from engineers of every kind, through architects, chemists, accountants and many others.

It could be seen that professional associations represented a vital element in the internal organization of most professions.

They not only legislated for and on behalf of their members - as it is still the case today - but also particularly in England, they played a leading role in the education and training of prospective professionals. Some of the associations - such as the Royal Institute of Chemistry - were established primarily as learned societies, while others - such as the Institute of Chartered Accountants, Institute of Civil Engineers, etc. - were offering qualifications since their foundation.

The picture of the professional education at the beginning of the nineteenth century - with few or no qualifications available, with education being mainly in the form of practical training through apprenticeship, with limited contact with other professions or specialized fields, and many other features - has been greatly altered. It can be noticed, from this brief survey, many of these changes and modern trends in professional education which are of interest to librarians and information professionals.

There has been a move from a reliance on practical training and experience as a means of acquiring expertise towards a strongly academic theoretical base. The apprenticeship method was valid in the nineteenth century, perhaps even in the first half of the twentieth century, when the rate of discovery of new skill was slower, and the transfer of knowledge from the master to the apprentice seemed to meet all his learning needs. However, the growth of scientific and technological knowledge in the last thirty years has rendered the apprenticeship inappropriate for today's society when there is more need to learn the principles and techniques in a given field and less need to rely on the judgement that comes from experience. The balance

between formal education and experience as instruments of learning has been changing in favour of education. But it does not mean to say that the experience requirement has been eliminated from professional studies, but only that it has received less emphasis than in the past. It has been confined to some form of practical instruction given in or under the main supervision of the institutions which provide theoretical training - as it is the case in architecture - or with industry or other employers taking joint responsibilities with professional associations - as it is the case in engineering, banking and others.

Even certain professions like accountancy and banking, which remained largely outside the university ambit in the past, have been moving towards university position. This advance of universities and other higher education institutions has been accompanied by some voluntary relinquishment by professional associations of their educational function - their present examinations are usually regarded more as an alternative than normal route to professional qualifications, being applied only to mature and other special categories of candidates.

The increasing importance of intellectual knowledge for the practice of technical and commercial professions together with the growing complexity of industrial and commercial processes has required higher standards of competence acquired through training and education and has placed a premium on the possession of certificates and diplomas. Professions are generally requiring today higher educational levels for entry, with many of them planning to move to all-graduate entry in the near future. An increase of new programmes at post-

graduate level is a feature common to education for nearly every profession in Britain in the last fifteen years, when attention has been also given to the intermediate and technician levels. On this respect, the position of the various commissions enquiring into the education of new entrants is worth noting. They have recommended for clearly defined and flexible career patterns with greater diversification in professional qualifications to allow for individual differences, and for the provision of increased opportunity for adequate education at all levels.

These reports have also recognized the place of continuing studies as part of the normal activity in professional schools and professional associations. Academic degree and professional qualification are no longer a golden passport to a life-long career. Professional practitioners need to refresh knowledge, to become aware of changing problems, to master any additional specialized or related subject necessary in his work. Given the quick pace at which knowledge becomes redundant, and the wide range of specializations available in most professional fields at present, it is likely that the maintenance of professional competence will be one of the most essential aspects in professional education in the near future.

One aspect which bears great significance on library and information studies is the explicit recognition in the professional education for the chemists, accountants and engineers that it is impracticable for the schools to provide detailed knowledge needed for immediate competence in all the posts open to their graduates. It is generally considered to be the employer's responsibility to make the new professional acquainted with the special nature of the work



and to provide opportunities for his further development, in which the graduate can greatly help by his own further study provided he had been instilled with a fundamental body of knowledge, principles and skills underlying the whole of his professional field.

The acquisition of a broad basis before specialization has become even more important in a rapidly changing society. Professional education should provide the flexibility needed by the graduate to cope with a world of continuous change. It is likely, for example, that young people of today will have to change careers at least once during their working lives, and this is one of the recommended ways to ensure flexibility and mobility amongst the employees of tomorrow - with strong pressures in the job market and the recent advances of knowledge in most subjects, young professionals may seek fields allied to their basic discipline or adapt more easily to the changes in their own field.

There has been also a change in the way professions interact among themselves and with the outside world. In the past, professionals had limited or no contact with other professions or specialisms, living within their own world. Working conditions are different today. The young professional is likely to become a member of a team composed of people with a wide range of backgrounds, be involved with committee work and such jobs as oral and written reporting, supervising, letter and memorandum writing, etc. Thus, he needs general communication skills and also the ability to communicate with other kinds of specialists and appreciate their activities.

Professional schools have been responsive to these new demands in many different forms. Some examples can be found in the

inclusion of communication studies in the curricula; the experiments with interdisciplinary programmes at least at the initial stage of the courses; the inclusion, to an increasing extent, of management studies; and, particularly in the case of chemists and engineers, the development of a sense of social responsibility in the professional, especially with regard to the role played by his profession in the solution of complex social problems.

A final aspect which can be observed in most professional fields is the expansion in the number of students as well as in the range and variety of subjects offered at degree level by universities and polytechnics. The 1963 Robbins Committee on the future of higher education in Great Britain, pointed the way to higher education for all who could qualify, and there has been, in fact, an increasing openness or freedom of entry into skilled occupations and professions for a wider section of society. Time has passed when the professions were regarded first and foremost as occupations for the gentlemen. To most men and women, the educational system has become the main means of access to high-status occupations and to social mobility in society. The economic recession in the early 1970's did not seem to have curtailed this expansion in the professional fields examined, but it has underlined the fact that the employment market cannot absorb an unlimited number of graduates. Hence the importance of giving careful thought to the educational prospects of professionals in every field and to the planning of its manpower resources for the future.

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## 7. The development of core curriculum

### 7.1. Origins of the core concept

The core, as a new scheme of curriculum organization, seems to have been experimentally designed about fifty years ago in the United States at a time when a new scientific approach was emerging in several fields and particularly in education where greater attention was being devoted to curriculum studies. The concept, however, had grown out of much earlier thinking about the subject of unifying learning. In the United States, Colonel Francis W. Parker seems to have been one of the pioneers against the isolation of subjects and in favour of a curriculum synthesis based on the unity of nature and the findings of child study. He was called the father of progressive education by Dewey and the impact of his educational theory began in Quincy, Ma. in 1875. When he moved to another school in Chicago in 1883, he worked out and applied ideas for the unification of subject matter and his theory of curriculum concentration. In this theory, the curriculum content was to be unified into central subjects, which should be built with everything the child had contact in his environment. All the central subjects - geography, physics, chemistry, biology, anthropology, history, etc. - were to be considered as one subject, synthesized through the interdependence of nature.

As could be expected from anyone daring to oppose the subject-based curriculum - a well established practice since the medieval trivium and quadrivium - he was called charlatan and criticized by many but, in general, his methods were approved in educational circles. He himself agreed with those who commented that his ideas were not original. He based them on the idea of synthesis of Johann Friedrich Herbart, a German philosopher who had stressed the importance of concentration,

having a subject such as history or literature as the core of the curriculum, and the correlation of the other subjects around it. The Herbatians were probably the first ones to talk on the unification of subjects and although their influence in Europe was felt in the 1860s, the impact of their thought reached the United States only twenty years later. There, at the 1895 meeting of the National Herbart Society<sup>(1)</sup>, there were significant discussions on curriculum unification, and in the words of D.Tanner & L.N.Tanner, "never before, or since, was this topic given so much attention by a body of educational theorists".<sup>(2)</sup>

With Parker and the Herbatians then it began the interest in total unification of the curriculum and by the end of the 19th century, other educators were proposing and debating a number of plans involving correlation of studies and other means of organizing the curriculum in order to accentuate the relationships between subjects. But, although they saw the nature of knowledge as the basis for the unification, there was no agreement on which fields should be the binding centres. The Herbatians, for example, favoured the subjects of history and literature while for Parker, science should be the organizing centre of the curriculum. Such a failure in getting to a singular agreed-upon plan for unifying the curriculum, together with other events at the time - such as the official approval of the credit system in American schools - helped in maintaining the diversification in the curriculum and the traditional views of education.

Even during this period of increasing specialization in education, there were voices expressing concern about the fragmentation in the curriculum because of the existing trends towards specialization. Among these voices was John Dewey whose writings were to influence greatly the report of the Commission on the Reorganization of Secondary Education appointed in 1913 which had, on its turn, immense impact on American

educational policy. The Commission identified seven main objectives of education: health, command of fundamental processes (reading, writing, arithmetic, and oral and written expression), worthy home membership, vocation, citizenship, worthy use of leisure and ethical character, and suggested that they could best be met in a unified organization involving the use of "constants", i.e. those courses required of all students. These were to be determined by the objectives referred to above, with the exception of vocation and worthy use of leisure. (3)

It can be noted that the term "constants" was very near in meaning to the core - or to one of the different ways of interpreting it - which had not yet been used up to then.

The core concept was going to be born out of the progressive education movement which was initiated about this time - 1915s - in the United States.

Under the stimulus of the various commissions of the Progressive Education Association much experimental work was done on curriculum which helped to extend its concept to more comprehensive terms than simply the outlining of courses of study in the various subjects. New developments in other fields which were producing new ideas and facts relevant to education were taken into consideration. In Psychology, for example, new theories about intelligence, perception, creativity, thinking and learning were revealed while in anthropological literature, the concepts of culture, socialization and social learning had been redefined, bringing new lights on the role of the school and consequently, influencing the curriculum planning and objectives. Also during this period, studies of group dynamics were suggesting new ways for effective dynamic of learning in groups which could bring new possibilities of planning the conditions for learning. Thus was emerging a new scientific approach

to education and H. Taba went as far as to comment that "The experimentation and research of the day contained the essential elements of a renaissance in a theory of curriculum building".<sup>(4)</sup> Many different trends were manifested such as 'laissez-faire' individualism, child-centred movement, learning as investigation, and activity, curriculum. But it must be said here that these models of developing the curriculum in primary and secondary schools were characteristic of a progressist movement happening in rather few places, usually especially established experimental schools or laboratories attached to teacher training institutions. For the great majority of educational leaders, however, there seemed to be little questioning of the conventional school subjects. Rather, they preferred to use the adaptation technique, i.e. apply the principles of child development and other educational developments of the time as a guide for the reorganization and placing of subject matter in the curriculum. These ways of organizing knowledge, within the framework of the subject curriculum - for example, in terms of disciplinarity, correlation, fusion, or broad fields - did not seem to provide the answer for many educators who argued that all these schemes still retained the essential characteristics of the subject curriculum with limited relevance to the problems and experiences of the learner's life. In response to this need and following the trends of the existing experimental ferment, progressive educators sought a new curriculum synthesis. The result was the development of the core concept as an alternative to the traditional subject curriculum, providing, at the same time, a basis for study of pressing social problems and issues.

## 7.2. Core : definitions and characteristics

The core curriculum was then introduced with quite ambitious aims. The first of them - to replace the disciplinary curriculum - has proved

to be a very difficult task. So much so that only a few today would expect the core approach to be effective if applied to the whole curriculum. It is a more usual practice having it as a part of the programme, in a first year, for example, of a three or four-year course. The core programme was also supposed to promote a greater integration counteracting the compartmentalized curriculum of the day; to serve the needs and interests of students and to relate what is learned with life and its problems.

The term itself is seen and defined in a variety of ways. One author alone, H. Albery, in 1953 described six different designs as core programmes. Three of them pictured the core as consisting of a number of logically organized subjects or fields of knowledge: each of which may be taught independently; or some or all of which may be correlated; or even all of which are unified or fused - in this case, one subject serves as the unifying centre.<sup>(5)</sup> The first two options, resemble the widespread notion of the core as nothing more than that part of the curriculum that is common to all students, in contrast with other parts which have specialized functions or are elective. These patterns of organization do not really differ from subject organization in which the boundaries of disciplines are clearly delimited and hence they deprive the core of one of its important aims, namely to develop integration of learning by unifying subject matter. The third option may be acceptable in the context of this work as long as the subject placed at the centre, or any other being studied, does not become dominant and so undermining the qualities and contributions of the other fields.

R. Pring, writing on curriculum organization for the Open University Course Team, did not use the word "core" as referring to those subjects

which are compulsory as opposed to optional on the curriculum. He saw in this kind of organization, various curriculum activities or even various subjects focused upon a particular core of studies. Such a core or area of interest could be a way of introducing the students to many of their other studies.<sup>(6)</sup> This is not the sort of core envisaged in this work, especially so for the reason that it presupposes the subordination of different activities or subjects to certain core studies and in the same way, teachers are given greater authority than others if they are responsible for the core area to which other curriculum activities are subordinated.

Still another view of the core was given by D.Tanner & L.N.Tanner who saw the core as a distinctive kind of curriculum organization, replacing the subject curriculum in general education, and organized "according to the problems and needs of students that demand personal and social understanding and action". Thus, the divisions of subject matter are dissolved "since the problems are not confined to singular disciplines, or subjects, or subject fields that constitute the separate bodies of organized knowledge".<sup>(7)</sup>

The core curriculum is frequently associated with liberal education, being sometimes called general or foundation course. This may be so because it is usually more concerned with education of a general basic nature than with specialized training and its foundations are expected to rest upon fundamental principles and theory rather than on specific skills and techniques. Also the problems and issues are tackled through open-minded approaches, the methods and procedures employed in the classroom are democratic, and the atmosphere is a permissive and open one, encouraging even the timid students in their articulation of views.

The core curriculum was also developed as a problem-solving technique through reflective thinking, dialogue among the students and a sound

teacher-student interaction. When educational theory strongly advised to impart to the learner the ability to solve social problems and it was realized that such a topic rarely fell within one subject field, teaching problem solving naturally led to the development of the core curriculum.

Above all, however, the important characteristic of the core is that it represents an attempt to combine logically related fields together and in so doing, it helps to avoid fragmentation of subjects in the curriculum. Through a unified common core in any field of knowledge, the students are provided with the opportunity to perceive the relationships among the subjects which constitute that particular field and in this way it helps in developing some unity among various disciplines and bringing some measure of coherence in the curriculum.

One criticism of the core curriculums and other attempts to integrate knowledge frequently found in the literature is that they are vague and not precise and fail to offer adequate training in disciplined thinking. This seems to have happened in the past when courses were composed by merely combining existing topics from many fields rather than selecting with careful analysis of basic ideas and concepts in the fields involved in order to identify the essentials relevant to several or all of them. In this way, integration of knowledge should be possible without any loss in depth, precision and discipline of mind. "The more basic the ideas," said H. Taba, "the more they tend to point to interrelationships with ideas in other fields, ..." <sup>(8)</sup> But, it is not easy to decide which ideas are basic and significant, and for this task it is especially important to have teachers with some breadth and depth of background knowledge in the other fields involved. This, in its turn, is difficult to find because teachers themselves are usually products of discipline-centred curriculums and so still conditioned to specialized areas, making difficult any form of



integrated thinking. Having solved this problem, the next difficulty is the effective arrangement of content around the chosen foci. The failure to offer systematic knowledge is another criticized aspect of the core but if we consider the framework within which the core is designed we must admit it can afford some disregard to possible gaps in content, scope and sequence of studies in order to be relevant to the student's life, needs and interests. Also, it may be argued that in the early stage of the educational programme in which the core is commonly used, there may be no great need for such systematic knowledge. If, on the one hand, the scope of the content is defective in the core, on the other, the pattern of learning experiences is emphasized and usually this element of the curriculum receives greater attention from educators than in the discipline-centred curriculum. H. Taba pointed out that for a successful integration the organization of learning experiences must be determined by the nature of the problem or concept and that there must be appropriate integrating threads. By these, she agreed with Bloom's definition of an integrative thread as "any idea, problem, method or device by which two or more learning experiences are related".<sup>(9)</sup> These threads can be found in objectives common to several courses and which combine facts with broad principles, theory with practical problems, and which can be used as a basis for organizing instruction. She mentioned some concepts like freedom and responsibility, as examples of integrative threads as well as the principles governing the development and use of political controls, which is a more effective thread than the particular facts about wars and revolutions.

As the students are given great responsibility in their learning activities, the core approach also requires considerable teacher resourcefulness and a greater investment in instructional materials from the school budget than the traditional subject curriculum.

It is widely acknowledged that the core represents an improvement over the piecemeal subjects but it is also recognized that it needs a special organization - perhaps with more intellectually challenging content, special planning procedures for teachers and students, and adequate materials which represent a sound preparation for mature understanding - if it is going to be of real value to the remaining of the educational programme. Administratively speaking, it has proved to be not so convenient to be handled by educators as the subject approach - it seems to be more difficult to be planned properly, and to be taught and evaluated competently. These factors may perhaps explain why the core concept is not so spreadly used despite being very often commended in curriculum literature.

### 7.3. Core experiments: from secondary to higher education

There is very little sound research on the results of integrated programmes from the times of the progressive movement. Three early studies frequently mentioned in the literature as shedding some valid and reliable light on the subject are: Wrightstone in 1936<sup>(10)</sup>, Jenkins et al in 1947<sup>(11)</sup>; and the Eight-Year Study<sup>(12)</sup>, a comprehensive curriculum experiment conducted in the 1930s but releasing its findings in 1942. All of them did favour the integrated programmes, especially the results of the Eight-Year Study which strongly recommended the continued development of the core approach. Despite the encouraging evidence from the Study by 1950 only one of the secondary schools in the experiment - the total number was thirty - had continued to use a core curriculum.<sup>(13)</sup>

It seems that those beginnings of experimentation and research with curriculum in the United States were not exploited in the period which followed the World War II. Although a few progressive experimental schools still looked for more reaching forms of curriculum reconstruction, the

majority doubted whether curriculum integration, or any other new approach was as effective to learning as separate subjects. Indeed, there seemed to be a growing conservatism which discouraged any further effort in continuing the development of new educational practices. Such conservatism, reinforced by the McCarthyism and its censorship of content, led to the decline of the core curriculum which required the free and open examination of economic and political issues of the time. As D.Tanner & L.N.Tanner summarized it "the growing specialization of knowledge, the increasing fragmentation of society, the inertia of educational tradition, the dearth of appropriate curriculum materials, and the opposition to the treatment of controversial problems - all served to prevent the core idea from gaining general acceptance".<sup>(14)</sup>

Although past experiments with the core course remained at elementary and secondary levels, with other methods used for unifying curriculum, especially interdisciplinary courses, most attempts had been made in colleges and universities. The picture has been changing however, and when the core curriculum was fading away from secondary schools, more experiments with it were introduced in higher education courses. Since the early 1970s, most of the activity in the interdisciplinary curriculum development is in higher education where a number of universities are organizing interdisciplinary studies, some with the core approach. The Group for Research and Innovation in Higher Education, with the support of the Nuffield Foundation has made known many case studies in interdisciplinarity. Typical examples of integrated courses comprise : environmental sciences and engineering (at the universities of Exeter, East Anglia, Sheffield and New University of Ulster); science, technology and society (at the University of Edinburgh, Manchester University and Middlesex Polytechnic); integrated social sciences (at the universities of Birmingham, Kent, York and Polytechnic of Central London);

humanities and cognitive studies (at the universities of Sussex and Warwick).

In the method of area studies, the idea usually is to bring together politics, economics, social history, geography and languages in the study of a given area which may serve as a core. In the process, contradictory assumptions, incompatible hypotheses and procedures may come about which show the many disparities of the division between disciplines helping the students to replace any conceptual fragmentation of knowledge by a broader interpretation of the whole.

Thus, the formula which seems to have originated in the United States had been spread elsewhere, and from its early applications at secondary levels, it began to be used in higher education courses, including in the education for the members of the library profession.

#### 7.4. Core curriculum in library and information studies

It is not certain when and who introduced the use of the term 'core' in library education. In the survey of library training made by C.C.Williamson in 1921, he found that the usual pattern in library schools was a common 'core' of the traditional library subjects followed by elective courses chosen by students according to their specialities. Talking about the new syllabus introduced by the British Library Association in 1930, G.Bramley also referred to the usual 'core' subjects of librarianship.<sup>(15)</sup>

Since these early times the core curriculum has been subject of discussions of library educators. E.J.Reece recognized in 1936 that there was a common core of "aim, function, setting, scope and process, all of which librarians transfer from one section of their field to another."<sup>(16)</sup>, and he proposed a core curriculum based on the activities

involved in the library work namely: "Fashioning a library collection"; "Organizing and caring for a library collection"; "Using a library collection" and "Directing a library enterprise". J.P.Danton, writing in 1946<sup>(17)</sup>, also recognized a core for all the students in the B.S. programme who would continue into a specialization.

By the late 1940s, a new pattern of library education was emerging in the United States in which particular emphasis was placed on a core curriculum. Besides the individual recommendations, at the Conference on Education for Librarianship in 1946 at the American Library Association Headquarters it was suggested that "Minimum essentials, totalling approximately one semester of study, should be incorporated in the undergraduate curriculum".<sup>(18)</sup> But this undergraduate curriculum was not highly regarded among many educational leaders, especially outside the public library field. One of the resolutions of the South-eastern Conference on Library Education in 1948 was from the college and university group which stated that "while graduates of the undergraduate core curriculum could be used in junior professional and subprofessional positions, those people would not be receiving the type of education which would produce college and university librarians".<sup>(19)</sup> Their position was not so much against the undergraduate core curriculum itself, but against having such a core with professional library subjects which they believe would hinder the general education of the librarian and lower the standards of the profession.

Nevertheless, there was already a consensus on what should be the contents of a basic course for school librarians but no agreement yet reached on such a core for all librarians. The issue was taken up by the above mentioned conference which had among its aims "to define, and if possible, adopt a core curriculum suitable as a basis for the

education of all beginning librarians"; and "to examine the core curriculum for school librarians which had been adopted by the Library Committee of the Southern Association of Secondary Schools and Colleges to see if it met the requirements of a basic core for all librarians".<sup>(20)</sup> There was agreement among the participants on three broad divisions of library knowledge and skills recognized by school, public and university librarians alike: library materials,, library processes, and library foundations. However, the most important contribution of this conference was its recognition that a core curriculum was desirable for all librarians, and its work in defining it as "that program of instruction which results in the acquisition of basic understanding and skills which are the common denominator of library service".<sup>(21)</sup> It also indicated that such a core at the undergraduate level, plus another year of study in subjects other than librarianship would be the ideal preparation for professional library practice.

Many library schools were trying to reach a consensus on a basic programme resulting in variations in their form and details. The University of Denver developed a new programme in 1947 in which the core, at undergraduate level, would prepare partially-trained school librarians as well as non-professional assistants for work in large libraries. The successful completion of the undergraduate courses would also make the student eligible for admission to the graduate part of the programme. The new Columbia programme centered around broad areas of study, like foundations, resources and methods.

The University of Chicago adopted a new master's programme in 1948 with three phases starting at the junior undergraduate year with the core curriculum, passing to a specialization within librarianship, and

then study in a related subject field. The innovation from this programme was that bibliography, reference, selection, cataloguing and classification were integrated into a series of courses under the heading "Interpretation, Evaluation, and Use of Library Materials". These together with the courses "The Library and Society", "Communication and Libraries" and "The History of the Public Diffusion of Knowledge and Ideas" comprised the nine courses offered in the well-known Chicago core.

The Standards for Accreditation by the ALA Council, published in 1951 brought some uniformity into the existing diversity of programmes but it did not clearly define what constituted the core, or its content and placing. It stated that the basic programme should require "a minimum of five academic years of study beyond the secondary school level" and besides a part of general education that it should include "study of professional principles and methods common to the several kinds of libraries and of library service".<sup>(22)</sup>

Thus, as it would be expected, even after the adoption of the standards, discussions went on as to what constituted the core curriculum, where it should be placed in the programme with many different views being heard, some of which even questioning the existence of a single core for all facets of the library field. Then, in 1953, the University of Chicago Graduate Library School sponsored the well-known workshop on "The Core of Education for Librarianship" whose participants it was assigned the task of deciding whether the core concept has validity for library education and if so, what the content of such a core should be".<sup>(23)</sup> For the purpose of the Workshop discussions the core was defined as "That part of the curriculum which must be mastered by everyone, no matter what specialization he aims for, or at what

level it is taught"<sup>(24)</sup>. From the sixty-seven invited representants of both library education and library practice came an overwhelming approval of the core concept and the following areas which they recommended to be included in it:

- (a) The study of the library and of society, and their relationship to each other.
- (b) The meaning and characteristics of professionalism.
- (c) The interpretation, appreciation, evaluation, selection and use of books, materials and sources.
- (d) The organization and characteristics of internal and external library services in relation to the users of the services.
- (e) The basic principles and various patterns of library organization and management.
- (f) An introduction to the characteristics and functions of the communication process throughout history and in the present
- (g) An introduction to the functions and methods of research, and the use of research findings.<sup>(25)</sup>

As for the participants' support for core concept, it seems that there was considerable pressure to act in the way they did. The assumption that a core or body of knowledge is an essential characteristic of a true profession did not leave them with much choice: it was either accept a core or reject professional status to the librarians' work. But, no one can deny the positive impact which some ideas and recommendations from this conference had on many other library schools; like, for example, the recommendation, for the first time, of a course in research; the acceptance of the core at the undergraduate level since it should consist of general information rather than specialized training; and the emphasis on principles much more than on techniques.

Although more light was shed on the core concept and many schools were requiring it, there was still no general consensus on it. More



than ten years after the Chicago Workshop, J.W.Liesener questioned the validity of the core courses for the education of university librarians using a rather empirical procedure as the basis of his work - although job description is not considered a completely reliable means to forecast the future educational needs in any profession. He analyzed five core areas - excluding the first two: "The library and society" and "Professionalism" - and compared the knowledge assumed to be necessary in the core concept and the knowledge actually found by him as required in the positions studied within the academic library of the University of Michigan. He found that some of the courses were valid, many were not, and concluded that "the hypothesis that the core content is necessary for all university librarians was therefore rejected". (26)

In Great Britain, according to the usual pattern of education in other professions, the Library Association was the training agency for librarians, and it has been laying down the syllabuses since its first examination in 1885 until the 1960s when full time library schools were in principle entrusted with the power to examine their own students. The core subjects of the 1964 examination syllabus from the Library Association were: "The library and the community"; "The government and control of libraries"; "The organization of knowledge"; "Bibliographical control and service". This core was intended to provide the student with the fundamental principles to all types of library, and so he could choose the alternative papers to study for part two, according to the type of library he intended to work - academic, special or public (municipal and county) libraries. In this way, the 1964 syllabus removed the bias towards public librarianship which, according to many critical opinions in the literature, were present in all the

previous LA syllabuses. This syllabus is particularly important in the British library education scene, for it was designed mainly considering the 2-year full time course at library schools and ending the part-time system, and also because it put less emphasis on technical aspects and more on the principles behind them, and on the history and social background of libraries, and their purposes in the community.

A glance at the LA syllabuses - in 1885, 1894, 1904, 1933, 1938, 1946, 1950 and 1964 - leaves little doubt that there is a core of principles that are common to all types of library. The basic programmes in them, as in many others, have centred around four main elements: an understanding of the social role of the library; the organizational and administrative aspects involved in running a library; all sorts of materials in which information is recorded; and the technical processes necessary for the control and retrieval of the information. To these, "principles and methods of conducting research in librarianship", and "principles and methods of documentation and information science" were added in the areas to be covered by the fundamental core subjects recommended in the Standards for Library Schools, approved by the IFLA Section of Library Schools in 1976.

But the content of the common core in library studies is a subject far from agreed upon among library educators, and which seems to be bound up with the question of identifying the fundamental basis of the whole field itself. While in the past, the library was seen as a humanistic and liberal force, today some argue that such a basis should be looked for on social grounds, considering the mediator role of the information professional in the communication process, and yet others see it in the nature and study of knowledge and its relationship with

the library tools for intellectual access to that knowledge. A.Kaplan saw one of the basic areas of the intellectual foundations of library education being provided by the whole set of disciplines which he called 'metasciences', i.e. "sciences not about subject matters provided by man and nature, but about subject matters provided fundamentally by our ideas about man and nature, or by our language, or by our ways of transmitting and processing the information we have derived, and so on."<sup>(27)</sup> He meant disciplines like mathematics, logic, linguistics, semantics and, in a narrower sense, theory of information and cybernetics, because, according to him, there is central to them the concept of structure, of order, of form which he saw as the central concern of library science as well.

We are seeing nowadays that librarianship has been much more concerned with research and intellectual growth in these and many other areas such as user studies; psychology order, structure and form of bibliographic store and organization; search strategy; systems design; methods of forming concepts, etc..., which have traditionally been objects of interest from information science, and we can, therefore, hope that both disciplines will grow together. The interfaces and overlaps between librarianship and information sciences have been focused by many in the literature. R.S.Taylor identified the following five areas: systems analysis; environmental context; information channels; the naming, labelling, or classification process; and the man-system interface<sup>(28)</sup>, and in broader terms, D.J.Foskett pointed out that a basic course for both disciplines must be related to: "The needs of the student; the needs of the employer, and the needs of the profession, which is itself the corporate guardian of the welfare of society."<sup>(29)</sup>

Thus, the concept of a core curriculum in library and information studies has many facets: it was first developed from the common grounds among the different types of library -- and as such it is not to be confined to a particular level in the educational sequence, being presented at the undergraduate or graduate levels - next, it can be seen as comprising those aspects shared by either librarians and archivists or librarians and information scientists, and finally, the core is seen as the required fundamentals in the education of all information professionals. This last and unifying concept was launched at the September 1974 Inter-Governmental Conference of Unesco which recommended that documentations, libraries and archives should not be thought of as isolated units but brought together under a unified coordinated overall programme. Its Working Document said that: "The concept of a 'core' is being accepted more and more by educators i.e. a basic minimum knowledge for each of these specialities". And while recognizing that there was no agreement on its content, the Conference presented a core subject area to serve as a guide for preparing basic professional curricula for information specialists, librarians and archivists. In it, for each group, there were five main headings: foundations, materials, methods, management and mechanization, to which another was added later on: men. As P.Havard-Williams pointed out, in this scheme of core curriculum, there were many overlapping subjects, such as research methods, some aspect of the history of culture and civilization, the study of different formats, management and mechanization<sup>(30)</sup> as well as the later addition, educating the user. He also stressed the interdisciplinary nature of this type of programme and that it always welcomes contributions by other subjects, e.g. education, psychology, logic, sociology, etc.

Basically, library, archives and information studies are all areas of study concerned with systems by which people communicate and the means for improving such communication. Thus, the intellectual objectives of their educational programmes can be derived from a variety of fields, and it follows that a core curriculum should reflect the wide nature of this study. H.Taba said that core programmes of the type which centre on some broad concepts and "draw together from any field whatever knowledge or ideas that seem pertinent represent perhaps the more successful experiments with integration".<sup>(31)</sup> Accordingly, the core curriculum we have in mind should be organized around a natural relationship of ideas, facts and concepts - skills are important but they can be introduced in a further specialist part of the course - drawn from the three areas and supported by any outside subject which would make the whole of the information field more meaningful to the prospective professional. The stress should be on broad concepts and the students should be helped in understanding the ways in which these concepts are used in the library, archives and information contexts.

A core of common ground, if well developed, can play an important part in laying the basis for an integrated structure of library and information studies, and reflecting a unity of knowledge or a unified mode of thought related to the whole of the information field. It would help in ensuring that, into whatever area of further specialization a graduate moved, he would keep in mind an overall impression of what total library and information service meant to a country and at an international level. The core concept helped in the 1940s to bind the educational programmes in librarianship into a cohesive whole. "The definition of a core of librarianship", wrote C.E.Carroll, "and

the insistence of the accredited schools on retaining this core in the re-defined graduate curriculum helped to maintain a unity in library education and kept the accredited schools from becoming specialized schools for the training of various specialized groups within the profession".<sup>(32)</sup> The idea of a core curriculum in the education of the information professionals is even more important for the developing countries for it can bring them to work close together and help towards a stronger profession. Also, with the job conditions which require greater flexibility and mobility from the professionals, it is an important asset to acquire an overall mastery of the essential elements in the three areas.

As P.Havard-Williams said, "Most information science, librarianship and archives educators are now agreed that there exists a core curriculum for each of these specialities".<sup>(33)</sup> It is not clear however, what it should consist of and how far should it go within the whole educational programme. Nevertheless, the discussions go on as it has been going on for some time, the search for an identity and for the intellectual foundation of the profession itself.

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8. Professional education and training in the information field.

There is high interest in matters of education in the information profession which all over the world is under many pressures at present. Having looked at some other fields of professional education, it can be noted that most of the questions and issues which they are concerned about seem to be also present in modern education for librarians, information scientists and archivists. They include questions regarding the contents, scope, balance and sequence of the professional curriculum, whether it should emphasize theory or skill; the need for professionals in many specialized fields and deciding at which stage of the programme should specialization begin; the provision for new orientation and job requirements; the identification of adequate and flexible career patterns to be offered to new entrants; the relation of academic and professional qualifications; and the provision for continuing education and upgrading of already working professionals. These are likely to be perennial issues in professional education for even the solutions which have been found need periodical evaluation and revision in the light of new developments and trends.

Education itself is an ever-changing process especially because its main purpose - which is to bring about important modifications in the behaviour of students - is based on certain social patterns which also change as the social environment changes at large. The influence of social forces are particularly noticeable on curriculum - its content and general orientation. Writing on this subject, D.E.Orlosky & B.O.Smith observed that:

"The shift in emphasis from one content to another is apparently associated with the spirit of the times. In a strong religious age the curriculum will emphasize the creed, music, and art of the religious institution as well as the forms of reasoning compatible with its theology. In a genteel age the curriculum will emphasize language, literature, art and courtly manners. Curriculum in an industrial age will include science, social studies, mathematics, language and vocational subjects."<sup>(1)</sup>

One reason for looking outwards to society when planning a professional curriculum is to enable educators to determine more accurately the kinds of competencies needed by today's citizens. But there are also other factors which may influence the curriculum in a professional school such as the parent institution, the teaching staff, professional bodies or the views of the profession at large, other professional schools, central and local government, as well as the employers.

In addition to these external factors, educators and curriculum developers in each professional area also look inwards to the field in an attempt to identify its domain of knowledge or what is the total range of information from which the content of the curriculum can be selected. This question is of primary interest in information and library education for despite much discussion on the subject, there is still confusion as to the extent of the field.

A search for a core curriculum may or may not lead to the identification of the areas which make up the total disciplines of librarianship, archives and information science. It is primarily a search for the essential characteristics and underlying principles in the field taking into consideration that it is these principles which give the structure to a subject and hence they should be the basis for

the curriculum of that subject.

While seeking to identify this basic core, it may be useful to look first at the nature and main features of the subject of librarianship, the subject of information science, and the subject of archives as disciplines of study and their reference to basic subjects such as historical, linguistic, mathematical and scientific studies.

### 8.1 Overall development of library, information and archives studies

The search for a common body of theory and practice upon which to build an educational programme for the information professionals is made difficult by the fact that the whole subject as a discipline is still in a evolutionary process. Even so, there seems to be a tendency towards a consensus on what should constitute a basic programme for library - and even archives - studies whereas such consensus of opinion is less evident in the education for information scientists.

Twenty years ago W.J.Goode pointed to some general knowledge embodied in most professional library school curricula which could help towards the identification of a theoretical body such as "communications theory, the sociology or psychology of mass communications, or the psychology of learning as it applies to reading."<sup>(2)</sup> But despite that the author did not see librarianship actually having a body of knowledge developed from general scientific principles for, as he put it, "most day-to-day professional work utilizes rather concrete, rule-of-thumb, local regulations and rules!"<sup>(3)</sup> i.e. an empiricist or technical basis. The general studies' element included in most curricula did not usually suffice to disguise the heavy emphasis placed on techniques for

which library schools were commonly criticized. Their excessive preoccupation with practical aspects of library work very often meant the neglect of scientific or even humanistic courses - despite the strong literary and humanistic roots of the discipline - , for the courses provided seemed to be no more than extras intended to give an 'academic' outlook for what was basically a technically-oriented programme.

One of those who voiced his criticisms at that time was J.H.Shera who pointed out that education for librarianship should not be merely the assimilation of facts, the mastery of specialized skills, or even the comprehension of a machine's modus operandi since librarianship was "much more than a bundle of tricks for finding a particular book, on a particular shelf, for a particular person, with a particular need."<sup>(4)</sup>

What exactly is librarianship then, and what are the principles, general tasks, and nature of its work, are questions in the minds of many modern library educators today and in particular of some philosophers in the profession who have recognized that the identification of such theoretical base is the major responsibility of library education, in a joint work with the practitioners. To J.H.Shera, librarianship as a professional activity,

"is concerned with all these agencies, operations, techniques, and principles that contribute to the objective of making graphic records as useful to society as is humanly possible, i.e. to maximize the social utility of graphic records for the benefit of mankind."<sup>(5)</sup>

Librarianship is then regarded as a service profession, and the librarian as an effective mediator between man and his graphic records. The author saw the task of modern libraries as the organization of

knowledge 'for the benefit of mankind' and so, from passive conservators of man's cultural heritage, they have taken a more positive social responsibility of getting books and information to readers. In this way, librarianship has become an integral part of the total communication process, moving away from the humanities towards a position among the behavioural disciplines. He maintained that it is the man-book interface that holds the key to the philosophy of librarianship and defines the intellectual content of the librarian's education. The professional must be a broadly educated person who 'knows books' but he must also know man - 'man's neuro-physiological communication systems, the ways in which he learns, his language, his reaction to the recorded word and the influences of records upon his behaviour'. In his comprehensive book 'The foundations of education for librarianship', the author showed concern with the need for a new epistemological discipline, 'a body of new knowledge about knowledge itself' whose 'focus should be upon the production, flow, integration, and consumption of communicated thought throughout the social fabric.'<sup>(6)</sup>

The educational preparation of the librarian, still according to Shera, should provide a liberal education, academic specialization, and an appropriate bridge to graduate or professional study. The basic principles and methods of the three areas of the humanities, the social sciences, and the physical and biological sciences should be taught to library students, along with mathematics, logic, scientific method and languages and linguistics. Such diversity is to be welcomed mainly on the basis that "librarianship is not a self-sufficient discipline, it is essentially integrative, and the greater the strength the student brings to his professional preparation the better prepared he

will be for a successful career."<sup>(7)</sup> As to the librarian's professional competence, he pointed to two areas of knowledge he considered central and fundamental : "an understanding of society and the communication system that operates within it, and a substantive knowledge of the intellectual content of graphic records and their bibliographic organization for effective access to them."<sup>(8)</sup> - in other words, communications studies and bibliographic knowledge.

A.Kaplan, another philosopher - library educator, identified three major areas at the basis of the intellectual foundations of library education. The first one can be said to approach Shera's epistemological discipline in some way : it is a "knowledge of the users, and therefore, of the users of information ... knowledge of people and of the various things that people do and of the various ways in which in the course of these doings they generate and transmit and interpret ideas or information."<sup>(9)</sup> The second basic area identified was formed by 'specifically vocational elements' or the skills involved in the professional work of the librarian; and the last one, already referred to in the present work, is made up of the whole set of disciplines - which he called metasciences - like mathematics, logic, linguistics, semantics and in the narrower sense, theory of information and cybernetics.

Another example of attempt to identify the subject knowledge of librarianship is provided by J.Z.Nitecki who saw the basic goal of the discipline in the "diffusion of the existing knowledge", and its subject matter in the "characteristics shared in common by a book, the subject it refers to and the particular reader in a given realm of knowledge."<sup>(10)</sup> He attempted to build a model for a science of librarian-

ship based on the relationship among these three elements : a) books, b) knowledge, and c) users. He recognized however the difficulty in developing a theory of librarianship in isolation since each element is the proper field of study of a different discipline : a) the development in the physical aspects of a book is studied by empirical or applied sciences such as typography; b) its content by specific disciplines together covering the whole range of knowledge from a to z; and c) a given reader is analyzed by various behavioural disciplines such as psychology, or education.<sup>(11)</sup>

It is implicit in these and other studies analysing the nature of librarianship how difficult it is to identify and develop a relevant body of theory upon which a basic professional education for librarians can rest. Such a task would demand an exhaustive amount of methodological effort and a complete intellectual commitment. Among the formidable obstacles, McA.Hull Jr. states that such a theory requires "a theory of education which seems to require a definite theory of mind."<sup>(12)</sup> It may be sufficient at present to know that the problem has been recognized and many attempts are being consciously made by some dedicated people in the profession.

Before turning to information science education it may be worth emphasizing that the library profession is involved in all social processes and so, integrated studies of the social sciences are likely to help towards the development of a theoretical framework for library education. But being involved with the organization of knowledge in every learned field means that it is an interdisciplinary profession and as such its theoretical framework must be broad and flexible in order to adapt to the general expansion of knowledge. As indeed it could be



noticed from the early part of this work dealing with educational developments in other fields, virtually every profession is inter- or multidisciplinary in character, often relying upon basic subjects to build its own educational programme. For librarianship this trend is particularly significant for, as J.H.Shera put it, "no discipline is more innately interdisciplinary than that which concerns itself with the management and utilization of graphic records, and no knowledge can rightly be regarded as irrelevant to its practice."<sup>(13)</sup> It may be then inferred that library education must draw not only from the social sciences but also from the sciences as well as the humanities. Disciplines like mathematics, logic, linguistics, semantics, systems analysis, etc., have been recognized as elements needed in the professional preparation of the librarian and introduced in many library schools in addition to traditionally taught subjects. This reorientation and process of expansion of librarianship has been in response to many elements of change among which there was the emergence of information science.

It is interesting to note that while archives and libraries have been born in response to the physical scarcity of graphic records - and the need to preserve them - , information science emerged as an answer to practical problems of an 'information explosion' - and the need to apply modern technology in bibliographic control and search. The discipline evolved from the greater demand for scientific and technical information which was present in some Western countries from the beginning of this century and especially in the periods following both world wars. The growth and competitiveness in industry and commerce led to the appearance of private industrial research laboratories as

well as government research stations and research associations. Thus, there emerged new communities or special groups of users to be served by libraries at these institutions - which passed to be called 'special libraries'. This denomination was until certain extent justified for they began to provide some special, more dynamic type of service not usually provided by other libraries at that time, such as literature and patent searching, abstracting of current materials, dissemination of information to users, translation of foreign materials, etc. The main distinct features of this group of information professionals were : the detailed knowledge of the subject matter with which they were dealing, a clear understanding of the users' needs - both features greatly helped by the fact that they usually had technical qualifications in the subject themselves -, and the exploitation of published and unpublished materials.

The first courses on documentation - generally considered the intellectual ancestor of information science - were established in the library schools at Western Reserve University in 1950 and at Columbia in 1951. The former also established in 1955 an academic research centre in documentation for the development of a programme of teaching and research in the emerging field. According to one of the school's deans the programme initially was mainly concerned with the use of computers in the information work but it was later "expanded to include the theory of information science, the mathematical foundations of information retrieval, and the application of automation to the noninformational aspects of librarianship."<sup>(14)</sup> Other courses began to be offered in other schools in the United States by the late fifties while in Great Britain the educational preparation of the information specialist or documentalist

was at that stage still regarded as a speciality within library education.

While the term 'documentation' tended to be used in continental European countries - with the exception of the USSR and some Eastern European countries where 'informatics' is used to mean the broad field covering library and information science -, the term 'information science' came to common usage in Britain and the United States by the early 1960's.

This discrepancy in terminology is representative of the confusion as to the extent of the field and the scope of educational programmes. In the introduction to the first issue of the 'Annual Review of Information Science and Technology' C.A.Cuadra pointed to the different ways in which the field was perceived by different people. A first view was given by some who saw it as a "glorified, even overblown version of conventional library practice". Second, some people viewed it in terms of "machine manipulations of linguistic, pictorial, or even only numeric data." A third interpretation was given by 'documentalists' as a fairly distinct discipline from library or computer operations, dealing largely with "the processing and/or analysis of scientific and technical documents". A fourth view was given by then a small minority which saw information science as a behavioural field and its activities in terms of interpersonal communication. And a last version was provided by those who believed that the field was not synonymous with anyone of these points of view but rather as "a new - if still amorphous - area of enquiry and invention with historical antecedents in and technical debts to these and other fields, including even such non-relevant ones as business data processing and military command/control systems."<sup>(15)</sup>

Like librarianship, information science is a developing and essentially interdisciplinary subject which draws on contents of a number of sciences, technologies, disciplines and arts. It was defined for the first time at the conferences at the Georgia Institute of Technology in 1961 and 1962. According to R.M.Hayes/H.Borko/R.S.Taylor, information science was:

"The science that investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability. The processes include the origination, dissemination, collection, organization, storage, retrieval, interpretation, and use of information. The field is derived from or related to mathematics, logic, linguistics, psychology, computer technology, operations research, the graphic arts, communications, library science, management and some other fields."<sup>(16)</sup>

Borrowing and using technological achievements as well as principles and ideas from these fields, information science, unlike librarianship, has from the outset scientifically inquired into its subject and tried to develop a theoretical foundation to serve as a broader framework and base for its practice and education. Such theoretical base may also serve for the education and practice of librarianship for both, as T.Saracevic put it, "share an interest in the phenomena and processes of communication of recorded public knowledge and in problems of effective availability, accessibility, and utilization of information."<sup>(17)</sup> As the same author stressed it, each needs the other : "On one hand, library education needs to take into account advances in information science because they provide new theoretical frameworks and new professional services. On the other hand, information science education needs to take into account accumulated library

knowledge and wisdom to prevent reinvention of the wheel and to utilize a philosophical framework tested over three millenia."<sup>(18)</sup>

That information science education is in the process of soul searching and changing can be seen in the literature on educational programmes which points to a steady increase in experimentation with new curricula and a great variety of programmes - in levels, in subjects and number of courses taught, size and background of teaching staff, and type of institution or department offering them. The ninety seven graduate-level programmes in the United States and Canada listed in the directory published by the American Society for Information Science in 1971-1972 were affiliated to a variety of departments such as business administration, computer science, communication, educational media, electrical engineering, industrial engineering, information science, library science, medical librarianship, and science information.<sup>(19)</sup>

The variety in subjects of information science programmes was confirmed at international level in the survey undertaken for FID in 1972. The curricula submitted covered such a large spectrum that they had to be specified into the following organizational categories:

- a) the theoretically oriented curriculum, which emphasizes theory, methodology, and research in information science as a distinct discipline of its own, and whose course contents are drawn from formal disciplines like mathematics, logics and linguistics;
- b) the computer science oriented curriculum, which stresses the mathematics and logics courses with a view to computer hardware and software design. Applications include teaching, the design of hardware components, information retrieval, linguistics, etc.;

- c) the library oriented curriculum, which emphasizes the use of computers in libraries and includes studies on information retrieval and dissemination, automation of indexing, abstracting and other library processes;
- d) the systems oriented curriculum, which emphasizes the methodology of systems analysis as it applies in library and information systems, especially their management and decision-making aspects.<sup>(20)</sup>

This diversification in educational programmes for information scientists testifies to the uncertainty of the profession as to what is its subject matter, and what should be the background knowledge of its members. Initially, this new group of specialists was concerned with information within the field of science. In the late fifties, the Institute of Information Scientists defined 'information work' as the "collection, collation, evaluation and organized dissemination of scientific and technical information."<sup>(21)</sup> During the 1960's most of the courses were then organized with a strong orientation to information retrieval in science and technology, and were usually restricted to science and engineering graduates. As information science has expanded, it has widened its field of interest, and most courses are open nowadays to graduates from social sciences and other disciplines.<sup>(22)</sup>

Like the librarian and the archivist, the information scientist deals with different kinds of information users and their ideas, and with such wide and interdisciplinary character, many argue that he would need as broad a background as possible including good groundings in the humanities and social sciences in addition to mathematical and scientific studies. But the search goes on for the essence or subject matter of the discipline. To R.A.Fairthorne, the fundamental topic in information

science and technology "is that of language, its physical, social, referential and intensional aspects". He did not see information science as a single discipline with a set of specialist activities developed from common principles but rather as a 'federation of technologies.' According to him, the only unity that the field possesses, apart from the "essential common origin in the uses of language" has come from "overlapping techniques and technologies."<sup>(23)</sup>

While recognizing that the application of technology - particularly computers, micrographics and telecommunications technology - to handling of information is a major part of information science, T.Saracevic pointed out that the discipline did not develop only in relation to this technology. He identified two other areas which emerged in the field : a) professional or practical work which is concerned with information systems, services, and networks, first in science and technology, but later in other areas as well ; and b) scientific or basic work which is concerned with theories and experiments dealing with phenomena and processes of interest to information science, such as information theory, cybernetics, Boolean algebra, etc. According to his view, the ultimate goal of basic research in information science is "to formulate a general theory of communication, to serve as a theoretical foundation of the science of information."<sup>(24)</sup>

This tripartite division is in accordance with others offered in the profession in recent years. In 1968, H.Schur & W.L.Saunders suggested the following four areas as encompassing the different types of activity in the field : production, development and design, applied research, and background research.<sup>(25)</sup> Basically it seems that information science - like librarianship, archives or any

other professional field - has both a theoretical and an applied component. The former which is related to research and development, seeks to identify the general terms and conditions under which the actual generation, transmission and use of information occur in society. And the latter, based on these explanation principles seeks to develop products and services to those who need them.

But it remained to be formulated 'a general theory of communication' which would bring into explicable relationship all the constituent elements of the field. Six years later, W.L.Saunders proposed himself to study the nature of information science with a view of identifying the component elements and presenting "something that looked like a unified and coherent whole, that looked like a science" but he ended up by not seeing such a synthesis. One of the explanations given by him was that while preceded by and supplemented by the study of other individual disciplines, it could be that information science was "simply multi-disciplinary with no possibility or need for the coalescence or distillation of the component parts into a separate, self-contained whole." He did not, however, exclude the possibility of a future identification of such 'discrete, self-contained area of study' called information science which, according to him, is likely, to come about by a unification of elements of physical science and of social science bridged by the findings and methods of psychology. (26)

As no conceptual foundation has yet been established in information science which could guide the formulation of basic professional education objectives as well as contents of programmes, the Institute of Information Scientists' document on the extent of knowledge necessary for acceptance in its membership, can serve as useful guidance for course



organisers. The document - 'Criteria for Information Science' - was published in 1977 and contained the following topics : knowledge and its communication; sources of information, organization of information, retrieval of information, dissemination of information, management of information, data processing, research methods, mathematics, linguistics, foreign languages, advanced information theory and practice.<sup>(27)</sup> The first six topics constitute the core knowledge considered necessary to every professional, and the others may be of complementary value to an information scientist.

If these are the essential topics in the educational preparation of information scientists, there seems to be no reason for not believing that there are grounds for an integrated basic programme for both professionals - library students would only benefit in having these subjects in their curricula.

Turning to the educational developments in archives, it can be seen that the field is also evolving. It was traditionally regarded as a history-related discipline, and so professional education was developed along this concept of the academic historian-archivist. From the beginning of this century onwards, a new conception of archives emerged in the United States - that of records management.- and archives studies were then regarded as an auxiliary technique of organization and management. And finally, during the last thirty years or so, the field has undergone further changes, and archives studies has been increasingly regarded as a modern discipline. According to B.Delmas, a post-industrial and information-based society has brought about such changes which can be especially seen in: a) the amalgamation of the two professions of archivist and records manager; b) the enlargement of the

concept of historical archives to include scientific and technical documents; c) the extension of the concept of archives to include non-graphic documents which require the use of machines; and d) the incorporation of archives, along with books, works of arts and monuments in particular, as part of the notion of the cultural heritage of mankind. (28)

This shift towards modern or contemporary archives constitutes an important factor for the move to a real integration of archives among the professions concerned with the dynamic provision of information in society. And it is the concept of an archivist not only as a participant in the historical and cultural heritage of his country, but also as an important element in contemporary administration and government as well as a promoter of research and development in many other areas that has justified the attempts to the harmonization of his education with that of librarians and information scientists.

When considering the training requirements for archivists, it must also be considered the varied nature of archival institutions and the jobs they are expected to do. In traditional archives the records are usually ancient and have historical value. In this case, a basic knowledge of the records and the history surrounding them may be as important as the knowledge of archival techniques - although some techniques such as reading and interpretation of documents for example, are sometimes mistakenly described as subject knowledge. Another type of archives is the one which covers a broad administrative or geographical area and, unlike the traditional one, its records originate from a variety of sources. In this case, in addition to archival techniques, and some knowledge of the subjects covered by the records, the archivist

must also possess some managerial skills. A third type of archives is the one which serves a single institution which is the only source of the records - such an institution may be from national or local government, or a private industrial or commercial enterprise. In this case, there is great emphasis on techniques particularly in the field of records management which, according to L. Bell, is the "control of record production from the very beginning and has economical as well as archival goals."<sup>(29)</sup>

The jobs archivists are expected to do are therefore varied but can be grouped into the following major areas : a) collecting documents from offices where they have originated; b) sorting them out, preserving the ones with administrative or historical and research interest and where necessary restoring them; c) classifying and indexing them; and d) making them publicly available through appropriate means - display, publication, microfilming, etc.<sup>(30)</sup>

It can be seen from these tasks that the archivist's basic concern is related to the acquisition, arrangement and description, and exploration and use of information, and so like the librarian and information scientist, he is an integral element of the communication process in society at large. He therefore shares many areas of work, concerns and developments with both of them. These shared concerns include the handling of materials - printed archives, newspapers, maps, photographs, films, sound recordings, machine readable archives, etc., the evaluation of user needs and services, the application of scientific methods of management, and the use of modern technology in technical, administrative and general archival operations and services. Although at a slower pace than information scientists and librarians, archivists in

developed countries have been investigating the subject and seeking the development of archival automatic systems since early in the 1960's. In his manual 'Archives and the computer', M.Cook pointed out that "computers do offer the most important new development in archives work since the opening up of archive-based research in public education in the second half of the nineteenth century,"<sup>(31)</sup> - and his book is in itself a sign of the interest and attention given to the subject in recent years.

Important areas in which archivists can work together with other information professionals at the national level were identified at the previously mentioned meeting of experts organized by the General Information Programme (PGI) of Unesco in November, 1979. They included the sketching out and promotion of legislation, manpower planning and training, design of buildings and of national policy regarding the services, equipment and supplies, security, systems design and automation.<sup>(32)</sup>

Archives, like librarianship and information science, is an interdisciplinary subject in character. While history is often regarded as the essential subject knowledge, modern archivists are being increasingly required to master a variety of subjects in order to be competent in their chosen fields. This is made more important under working conditions at present when, especially in larger systems, they have to work with other specialists such as accountants, systems analysts, computer managers, etc. This expansion towards other fields of learning can be seen in changes in the programme at the 'École des Chartes' the oldest training school for professional archivists (1821). From the outset, its course was based on history and history-related

disciplines and research up to the nineteenth century. Over the past twenty years however, it has introduced subjects like contemporary history, librarianship, modern institutions and administrative science, contemporary archive studies, business archives, mathematics and statistics, informatics and the new media and information science. (33)

Other archival programmes around the world have followed similar patterns and from the subject groups of contents identified by E.G.Franz (34) - he was based on the excellent comparative study of archival training programmes done by C.Kecskemeti in 1966 (35) - and the tentative list of subjects produced at the 1979 experts' meeting, it is possible to identify new trends in archives studies which bring them closer to related fields of information and documentation. This new position reflects the move towards a redefinition of archives studies not only as a history-related discipline, but also as an information-related discipline, with particular emphasis on administrative information. Thus, in addition to historical knowledge, basic subjects like economics, law and administrative science, logic and mathematics, ancient and modern languages, statistics, systems analysis, information technology, research methods, user studies have been increasingly regarded as important in the educational preparation of archivists, and in better equipping them to acquire the specialized knowledge needed for the performance of professional duties in traditional and contemporary archives.

Finally, it can be said that library, information and archives studies while drawing from each other's subject knowledge - particularly with regard to techniques, methods and skills for solving professional problems -, they also have reference to other fields of knowledge from which their principles and techniques have been derived. As part of a

service profession, the type of knowledge drawn from the social sciences - e.g. social psychology, sociology, economics, political science, geography and history - is obviously of fundamental importance to the librarian/archivist/information scientists's body of professional knowledge. But also important for the intellectual basis the profession has been searching for are linguistic as well as mathematical and scientific studies. As J. Shera<sup>(36)</sup> observed, the derivation of its own theoretical and practical structure from the more formal disciplines used to be regarded by librarians as a fundamental professional weakness, and often generated a considerable feeling of professional inferiority. But it has been nowadays, regarded as a common feature in all professions - engineering or architecture draws from mathematics, physics, economics; law from economics, political science, chemistry, psychology; medicine draws from biology, chemistry, physics and psychology, etc. - and above all, an important element for the recognition of the unity of knowledge.

## 8.2 Education and training for the information professionals.

The terms 'education' and 'training' were interchangeably used in the period of early education for librarianship - M. Dewey, for example, identified training with education while today, we talk of his school as being involved with the training rather than education of librarians. It is important to distinguish between them when dealing with professional education.

J.H. Shera saw a distinction between education and training in the sense that the latter is for the present while the former is for the future. He agreed that the purpose of education is "to develop the

ability of the student to understand change, to foster in him a hospitality to change."<sup>(37)</sup> In this sense, education seems to be regarded as an open-ended process, and training as a limited one. While the former produces a state of mind favourable to further development, the latter aims at a definite end or level of skill.

Another usual conception of both terms is seen as the provision of theory and practice. H.Schur regarded education and training as divided between "those parts the more theoretical topics in the curriculum which can best be done by an educational institution, and those which can be acquired through professional practice."<sup>(38)</sup>

P.Havard-Williams' distinction between them followed similar lines in that education was "associated with a full-time institution with an academic slant where the theoretical aspects of the subjects are dominant", and training, in contrast, was directly vocational, and students were under closer supervision, often in a working institution.<sup>(39)</sup>

There is also the connection with the position of a profession within the hierarchical scale, with the underlying implication that mental work has higher status than manual work - hence the saying 'education for a profession, training for a job'. Training is then referred to subjects with strong practical calling - such as accountancy, librarianship, etc. - which some still see as better learned on the job, not in the classroom. This is however only half-truth at present. Some aspects of information work are indeed better learned on the job, just as a medical student could not learn all he needs to know to perform an operation by lectures or watching demonstrations. But to say that a modern librarian would acquire total professional competence by serving an apprenticeship is not properly distinguishing the profession from the

craft. In making such a distinction, it must be carefully measured the degree to which theory and practice - or, to some extent, education and training - are united in the professional's task. Taking, for example, the case of a surgeon performing an operation and a plumber repairing a water pipe, both are engaged in manual activities but while there is a body of theory underlying why the former professional is doing in such a way - and he is fully aware of it - the 'why' of the method used by the latter need not be known to him.

In the same way, a library student may be 'trained' in the use of a given classification system or cataloguing code but there is some educational element involved in the process if he is taught why a classification system does not work or how to judge when to use and when to disregard a cataloguing rule. One common complaint in the past has been the over emphasis placed by library schools on the techniques of the craft. All too often library educators pay homage to theory and principles and go back teaching in the classroom the same old routines that they have been teaching for years and years.

Both theory and practice are important in education, and education theorists together with practitioners have been trying to clarify the relationship between them in the teaching and learning process. In what is now a classic text, R.W.Tyler emphasized the value of the student's learning experiences through which learning becomes active behaviour performed by the student. According to him, the learner must carry on the behaviour he is to learn - "...it is what he does that he learns, not what the teacher does."<sup>(40)</sup>

And both theory and practice are even more important in professional education. Despite being a commonly discussed issue among the professions,



integrating practice experiences with theory and principles has not been an easy accomplishment - as it could be seen from the survey in other fields, they have been searching for optimum means to achieve this goal.

There are basically three kinds of training for information professionals as practised in some countries : pre-school, in-course and post-school experience. In the first, a basic initial training is completed before the candidate enters the school. A year's pre-education training is desirable on the basis that it brings the student to terms with the nature of the work involved and helps him to assess whether he is suited to the work; it also enables him to visualize his own strengths and weaknesses in the field; and it can be of great value later for illumination of theory imparted at school. While recognizing these advantages, educators in countries with no long tradition of good information and library practice have their reservation with regard to pre-school training for its effectiveness depends to a large extent, on the facilities and supervision provided by the working institution as well as the conditions, type and level of the training itself. In Brazil for example, there is a general feeling among library educators that it is preferable - and easier - to initiate good habits in the student rather than change old bad ones. Whereas in Great Britain, pre-school library work used to be a pre-requisite for entry in most, if not all, library schools - an official report stressed in 1968 that "the student should not start the formal library school course without such preparation."<sup>(41)</sup> Present prospectuses from British library schools show mixed arrangements but in most of them pre-school training is no longer compulsory but still 'recommended' or 'considered advisable.'

The second kind is the training undertaken during the actual educational experience. It is the usual practice in Brazil and in most other countries nowadays with library schools taking most of the responsibility in arrangement, supervision and evaluation of the training but cooperation with practising senior librarians is regarded as an essential element for its success. It can be given in periods of four to six weeks per academic year, concurrently with the course on a part-time basis or during the vacation period. It is very useful in helping students to relate it to subject options and to explore different career prospects.

Lastly there is the post-school training which is the period after qualification when the student - now a professional - is under supervision of a senior practising professional. It is regarded more the responsibility of the library or employer than of the library school. The kind of scheme developed by the architectural profession - namely, two years of practical work after the academic course in order to get the first qualification - is not commonly used in the information profession. But in some countries, professional associations do not admit practitioners into full membership until they have served a period of this kind. The candidate for Chartered Librarian status of the British Library Association, for example, must complete one year of practical supervised work before getting the certificate.

On the whole, six types of training were identified in a survey carried out in 1973 in the United States in order to ascertain the status of training programmes in accredited library schools : apprenticeships (when library schools are part of or closely related to libraries); cooperative plans (which includes alternating periods of work and study);

internship (which usually means one year spent working in a library after the school course is completed); practicums (similar to internships but shorter in duration and undertaken prior to completion of course work); trainee programmes (when libraries employ graduates while they attend library school); and work-study programmes (which provide students with both of them concurrently).<sup>(42)</sup>

Either as a pre-school requirement or as a planned part of the course, training is an integral element of professional education. It not only enables the student to respond and prepare for change, but it also serves as a bridge between the ideal and the real through which he can relate what he has learned in theory to what he can apply in actuality. It must be emphasized however, that there is something missing in the identification of education with theory only - it encompasses with theory and practice and hence the importance of a proper balance between both elements in any educational programme.

As it could be seen in chapter six, one of the attributes of a profession is a prolonged specialized period of education and training in a fundamental body of knowledge. Archives, information and library education, however, has traditionally been more concerned with training than with education, and this could be due to the profession's uncertainty as to its fundamental body of knowledge. In the process of identity search which has been taking place during the last thirty years or so, there has been a tendency to place more emphasis on education - and some of related aspects such as research, relationship with other fields of learning, etc. Nevertheless, this has meant a change in balance, and not the elimination of the practical element in the preparation of the professionals. Indeed as education develops, professional training

develops along it for one can hardly be divorced from the other.

An adequate balance between education and training is one of the purposes of professional studies in any field at present. Despite being mainly based on fundamental principles, a common curriculum for the information professionals can and should be designed to inter-relate the theory and practice elements, for principles in professional education have little meaning in themselves if not related to real people and real life situation.

#### 8.2.1 Relation of academic and professional qualifications

One of the problems faced by professions is to convince the lay public as well as government and other institutions that the nature of their work can only be entrusted to people who have 'appropriate' qualifications. If this is achieved, a great deal of internal control over the profession organization is brought with it : the definition of its qualifications, devising educational programmes and the register of new members. Such internal organization represents the most distinctive difference between professional and academic disciplines, and it has the usual form of a professional association which provides the focus for the profession's activities and legislates for and on behalf of its members.

Professional associations in some countries are the most authoritative body in the profession; and usually have central role in the three features above mentioned. Although educational matters have been gradually left to schools, professional associations usually set and maintain standards for education, and also influence to some extent the curriculum of study, through the structure of their examinations.

In a more direct way, professional bodies are involved in the other two issues: qualifications and register. Their province includes the professional mandate and licence to practice which are fundamental to the nature of professional work. The strength of the mandate varies from country to country as well as among different professions in the same country. In Brazil, for example, professional mandates are supported by government legislation which forbids any unqualified individual to practise as a professional. In Great Britain, similar legislation exists for medical doctors but not for librarians or accountants.

This is not to say that the library profession in Britain has a lower status than its counterpart in Brazil - the converse is true, in fact - but, as it was mentioned earlier, professional education had different historical origins in both countries. And it is perhaps due to these origins that the distinction between academic and professional education is better recognized in Great Britain, and in particular in England.

Professional education for librarianship developed outside higher education institutions in England, and by the time universities and polytechnics accepted responsibility for educating librarians there was already a long established system of professional training and qualifications in the field. The traditional route followed by a student to the Fellowship, the highest professional qualification of the Library Association (FLA), was through the external examinations, one or two years of supervised service, the Associateship (ALA) and after five years as ALA, the completion of a thesis. According to the new scheme devised by the Working Party on the Future of Professional

Qualifications, there will be three routes through which a student can be registered as chartered librarian : a three or four year bachelor's degree course, a one-year postgraduate course, and a two-year non-graduate course. After one year of supervised training, there will be the licentiateship which is basically a licence to practice as a professional librarian for a period of at least two years. After that the candidate will be eligible to apply for admission to the Associateship, and after the five years of approved library service as ALA, he can follow two other routes to Fellowship in addition to the academic thesis: published work and professional achievement.

The Library Association has changed its educational role after the establishment of full time library schools but it has retained control over professional qualifications and register. There were fifteen schools in the mid-1970's with about 2,500 full-time students offering a wide variety of academic qualifications and possibilities of training as a professional librarian. As P.Havard-Williams pointed out, they ranged from a two-year course to a PhD, with great variety of BA/BSc/BLib.courses in which library studies can be studied as one subject of a joint honours course; as a major or minor subject in an honours or pass degree; as a major subject with ancillaries in an honours degree; as a main subject with subsidiary subjects - which can include anything from chemical engineering to religious studies and from economics or social studies to Russian - for an honours or general degree, and as a joint subject with education which enables graduates to qualify both as librarians and teachers.<sup>(43)</sup>

Although it has been alleged that "the 1964 syllabus and its regulations emphasized academic attainment for both ALA and FLA"<sup>(44)</sup>, the

emphasis on the presentation of professional experience for the acquisition of professional qualification is still stronger in England than, say, in the United States or Brazil. Such emphasis can be seen in the criteria on which qualification for professional appointment is based, both in general library work and in teaching posts in library schools. In England as well as many European countries, the criteria seem to be work oriented, with working experience being asked from teachers while in the other two countries they tended to be based more on academic expertise than on professional performance. Titles of doctor and master have become - especially in the United States - the pre-entry qualification to university, college, and even senior school teaching. The British attitude towards working or professional experience seems to result from the significance attached to the qualifications granted by the Library Association which, on their turn, were for a long time based mainly on experience and practical work together with some private studies, in contrast with the relatively short period of academic preparation of professionals in library schools - which was, from the outset, the system adopted in the United States.

On the whole, this attitude seems to be closely related to the ways qualifications are regarded in different countries : as marks of professional competence or educational achievements. In the interest of the members of the profession as well as the community which is served by them, professional schools and professional bodies should work together in order to raise the standards of both professional and academic qualifications, and meet the educational requirements in the field.

Modern library and information services need a wide range of professionals with different levels of knowledge and skills, and such

different end products require different educational arrangements. The NATIS document recognized the need for "qualified personnel at various levels to operate the national information system", and recommended that in addition to initial and advanced studies, courses for assistants in the information field should be established as part of the national programme.

Also, the information profession is one which attracts people from other careers and thus, in order to secure the best professionals, it is important to offer them comparable career prospects to those they would have enjoyed in their original career. The notion of a progressing career with clearly defined and flexible career patterns is also fundamental for the maintenance of high status of professional work as well as an incentive for the beginner to reach top appointments. This has been recognized by professional schools where there has been an increase in the number of programmes offered at post-graduate level with attention also being given to intermediate and technician levels. This last development is especially applicable to education in information science and archives where the broad structure of the fields and the education and training programmes have been outlined by H. Schur,<sup>(45)</sup> and E.G. Franz<sup>(46)</sup> respectively. There seems to be a need for equivalent study of proposals for the library profession.

In addition to new working conditions, educational developments also influence the structure of a profession. The move of professional education towards university position, a higher educational level required from candidates at entry, a more significant role now played by diplomas and other academic qualifications, are all among the factors influencing the organization and structure of a profession, which



should be taken into account by professional bodies and schools alike. Both are closely interlinked - higher standards for a profession are indicated by the quality of education provided by professional schools.

### 8.2.2 Development of continuing education

Continuing or lifelong education, in its wide sense, encompasses and unifies all stages of education - pre-primary, primary, secondary, etc. - and has two broad elements : general and professional. The meaning is here confined to adult education of a professional kind.

In contemporary societies, changes are so rapid and drastic that qualifications and skills acquired need to be constantly updated. Not only should the individual be introduced to newer techniques and methods, but he should also be aware of social changes in values and ideas which are often imparted in an educational process. Given the current rate of expansion in all fields of learning, no degree can today be regarded of absolute value. In a somewhat extremist position, J.B.Martin considered a degree achieved ten years ago as 'meaningless'. The reason given was that:

"Either the individual has developed intellectually in the period since he obtained the degree, in which case the degree measures nothing, or his ideas and thoughts have ossified, in which case the degree was a failure even if it came with first class honours. The university experience should provide momentum, but it is only of value if the momentum is maintained."<sup>(47)</sup>

One of the implications of the concept of education as a lifelong process is that educators and curriculum designers should emphasize the essentials - mainly theory and principles - in any educational programme so that students are equipped to cope with future changes,

adjusting further developments upon the fundamentals received. In this way the initial educational experience is regarded as a useful basis and not likely to be considered 'meaningless' in ten years time.

It is also important at this initial experience - perhaps more important than to impart knowledge and skills which will be soon out of date - to broaden the student's interest so that he will be motivated to continue his education after leaving school. Motivation is one of the major prerequisites for lifelong education, and a very important aspect to be considered by library educators during the professional course.

Continuing education is particularly important to librarians and information workers since they are involved with areas of knowledge, techniques and materials which are often changing and posing new demands. One usual meaning of the term is "all those learning activities after the initial qualification in librarianship which contribute to professional development, whether they take place on the job, within the employing library system, or are provided by library schools and professional associations through courses, workshops and conferences."<sup>(48)</sup> It includes formal or full-time courses provided by library schools leading to further qualifications, as well as informal courses which may or may not lead to further qualifications.

Librarians and information workers turn to professional continuing education mainly when they want to update existing knowledge or acquire new knowledge or when they want to specialize in a given topic or aspect of information work; or still when, for administrative or personal reasons, they need to improve their own formal qualifications.

Continuing education is generally regarded as being a major responsibility of library schools, but professional associations and library organizations have also become involved with such programmes. Most of the activities however are still offered in the form of occasional conferences, summer courses, workshops, etc., and not as systematic and intensive educational programmes as they should. The subject has been object of study in the United States<sup>(49)</sup> as well as in Great Britain<sup>(50)</sup> and many priority and problem areas were identified and suggestions for action were made.

The important aspect on continuing education is to regard it as an integral part of professional education; as a process which provides professionals with the opportunity of entry to the next higher qualification or to the next step in the 'ladder' of professional education. The common educational programme for librarians, archivists and information scientists envisaged in this work is based on this assumption, i.e. that it will be followed by a continuing education throughout their professional lives.

### 8.3 Developments for the future

Never before has the time been more propitious for the implementation of a core curriculum; never before has it also been more difficult. In the past thirty to forty years much thought has been given to the curriculum, and syllabuses in archives, library and information studies have been reviewed, discussed and considered unnumberable times, both separated and together. As the result of the NATIS discussions and the subsequent developments in the UNISIST and PGI programmes, there is now a body of opinion on a core curriculum. The NATIS proposal still has considerable validity and it has guided many successful experiments in joint training in several countries. On the other hand, the traditions of the archive, library and information professions are different, and the lack of a cohesive outlook among the three may prevent desirable developments towards a unified curriculum. The connection between the three varies in different countries : in the United States, for example, library science is giving way to information science, but archive studies are largely centred on history schools. In most European countries, archive studies tend to be centred on historical rather than information studies, while in Brazil and most South American countries they are closely related to library studies.

Furthermore, with the different rates of development between 'North and South' - developed and developing countries - it is difficult to reach a consensus on the nature of a core curriculum. But a start must be made. From the evidence suggested in this work the following areas could be identified as relevant to an educational programme for librarians, archivists and information scientists:

- (1) - Mathematics and statistics
  - numerical analysis
  - quantitative methods
  - logic
  - computerized operations.
- (2) - Historical studies
  - history of archives, libraries and documentation
  - history of science and technology
  - law and administrative history.
- (3) - Human communication process
  - neuro-physiology
  - social psychology (human behaviour in organizations)
  - social community (national and international levels)
  - mass communications (theories, media, effects)
- (4) - Language and linguistics
  - natural and formal languages
  - semantics
  - thesauri structure
  - machine translations
- (5) - Organization of information resources
  - classification
  - indexing, cataloguing, description
  - abstracting
  - storage
    - preservation and restoration
    - buildings and facilities
- (6) - Information services
  - reference and bibliography
  - content analysis and evaluation
  - retrieval : search strategies
- (7) - Systems
  - design and operation
  - networking
  - management
    - resources analysis and allocation
    - personnel (selection, training and motivation)
    - performance analysis and evaluation
- (8) - User studies
  - educational methods and media
  - public speaking
  - psychology

- (9) - Information technology
  - computing theory
  - automation of library, information and archive services and processes
  - equipment
- (10) - Research
  - scientific research methodology
  - model building and simulation
  - theories : synthesis, analysis and verification
  - report writing : principles and techniques.

### 8.3.1 Unified syllabus for archives, library and information studies at undergraduate level

Drawing from the above areas, a unified syllabus for archives, library and information studies at undergraduate level can be developed taking into consideration all the variables inherent in the curriculum development process. The choice of subjects and the general format of the programme will depend on the educational objectives established by each particular school and also on the needs and circumstances of the country in which the school is situated.

The undergraduate degree in information studies is not considered a professional degree in the United States and some European countries. In these countries the students already come to professional schools with a basic general education and sometimes subject knowledge in one field of learning. But in other countries, such as Brazil for example, professional courses in information studies are at undergraduate level and are expected to provide both academic and professional studies during this initial period of three or four years. Therefore, the inclusion and depth of basic subjects should be weighted against the students' background knowledge.

With regard to the level of contents, it must be remembered that the treatment of any subject in a core curriculum of this kind is, by necessity, introductory with further development of that particular subject in a subsequent stage of the programme. It must then be decided at what level in a subject, material should be included in the core, and from which point should it go into a specialist part of the curriculum.

The suggested syllabus for archives, library and information studies takes into consideration that all three are oriented towards the user - the raison d'être of any real service. All three are concerned with the conservation of documents or of data produced electronically. All three now have such a complexity of organization that they need in one way or another to guide the user to the efficient use of sources, through printed guides and notices in the institutions, through instruction and teaching. Of these, the orientation towards the user is the most important, and this entails the inclusion of instructional methods and materials (including non-book media) in a basic educational programme; it also implies the inclusion of methods of clear presentation of ideas and the importance of logic and of psychology - at least, of an applied kind to facilitate communication between the information worker and the client. Logic is also at the basis of classification, and clarity of thought is essential to cataloguing if the resulting operations are to be comprehensible to users at all. Numerical techniques are necessary both as a basis for the application of systems analysis, and for the understanding of computer operations which are applicable in varying degrees to archives, library and information services, and processes. Further, the importance of statistics,

also dependent on numerical techniques, need hardly to be stressed in a world which requires justification of demand and management procedures if a service is to be developed - let alone kept alive. Management itself is important for the professional in any field because most archivists, librarians and information scientists will be responsible for staff, budget and resource management generally. Financial, institutional and personal management will therefore need to be included.

Sources of documentation are the basis for the professional work in the field. A background of history - administrative, financial, political and social - are essential for any archivist, as is a knowledge of palaeography and diplomatics for the understanding of the significance and status of ancient documents. Librarians dealing with manuscript materials also need palaeography and diplomatics, and both need a knowledge of general bibliography and the bibliography of history. Librarians of course need a much vast knowledge of bibliography - which overlaps with the needs of information scientists, whose concern is primarily with science and technology, but who also need a general background of bibliographical knowledge. All three need a knowledge of computerised methods for, even where they are not already applied, their advent certainly in advanced developing countries, is not far away.

The suggested syllabus should have the following elements:

1. Orientation towards the user
  - Educational methods and techniques
  - Psychology
  - Public speaking
  - Logic and systems analysis.



2. Conservation and organization of the materials
  - Conservation and restoration methods
  - Easy methods of access (classification, cataloguing, etc.)
3. Numerical techniques
  - Statistics, quantitative methods
  - Computerised operations
4. Management
  - Financial, personnel, resource
5. Subject materials.
  - Bibliography and the structure of subject materials : data bases and data banks
  - Other special materials (maps, music, patents, laws, government documents).
  - Palaeography and diplomatics.

### 8.3.2 Syllabus for postgraduate studies

Generally speaking, postgraduate programmes in the information field must cater for the needs of two kinds of prospective students: a) graduates from other disciplines who bring a specialist knowledge and look mainly for bibliographical skills in that particular field; and b) graduates from library schools who have expertise in literature handling but no technical or scientific understanding of their contents - or at least not at a satisfactory level. When it is not possible to provide two separate courses, the answer may be found in an integrated study of sciences, bibliographic control and languages through a modular-type course. It would make use of other departments and facilities of the university allowing a measure of freedom in subjects for study according to the students' individual needs.

Whenever conditions favour it, separate courses should be developed. In this case, a balance of subjects is sought between both groups of students with postgraduate specialists concentrating in

professional study in information subjects within their own field; and specialist postgraduate studies for library and information students providing a more liberal dimension in other subjects.

The syllabus consists of five compulsory subjects and a choice of three options together with the submission of a dissertation of the order of 20,000 words after the studies are completed. The important point to be emphasized to both kinds of students is that society's information problems and needs are to be handled by librarians, information scientists and archivists and thus, at every particular topic or broad informational issue, the three disciplines should be related to each other in meaningful ways.

The demands of such a curriculum are beyond the possibilities of the time available. In most countries - the United States, United Kingdom, Brazil, France, Germany - the conventional period is one academic year (nine to ten months) or one calendar year. Within any of the three specialities it is impossible to provide more than the basic curriculum, if the treatment is not to be anything more than superficial for the three branches. Therefore, it might be proposed:

Civilization and information agencies :

The development of recorded information; social institutions and information; government, research, learned and professional associations, national, public, special, university and school libraries; national and international networks.

Organization and retrieval of documents and information:

Classification, indexing and abstracting; bibliographical control : manual and automated; information transfer; search strategies.

Management:

Financial, personnel, resource.

**Numerical techniques:**

The understanding and manipulation of numbers; number systems in different bases; hierarchies of operations; the equivalent of algebraic processes.

**Subject bibliography:**

Physical and descriptive bibliography; general and in special fields.

**Special topics, e.g.**

Conservation  
Systems design for information  
Palaeography  
Special materials  
Rare books  
Library architecture and planning  
Community information  
Information data bases, etc.

It seems obvious that only the basic material can be covered in such a course and that specialized courses for specific interest subjects will need to be provided for specialized groups. The development of data bases alone would provide material for a series of updating specialized courses, which the development of administrative law and practices would give the material for future courses in that field.

It was said at the beginning of this work that its main objective would be the attempt to identify the common grounds existing between archives, library and information studies from which a core curriculum could be derived for an educational programme common to the three disciplines. While it has not proved possible to indicate definitive elements for a programme of this kind - and it is even doubtful whether they exist, since a programme relevant to one society may not be relevant to others -, it was possible to identify the already mentioned areas considered relevant to a common educational programme for the three professionals. In addition, some information activities and

concerns which have been referred to during this work could provide grounds for joint study by librarians, information scientists and archivists. They include: the promotion of legislation; the development of a standardized terminology; methods and techniques for solving professional problems; evaluation of users' needs and services; manpower planning and training; design of building, equipment and facilities; administration and management of information services; national and international networks and systems; research; and use of information technology.

Special attention must be given to the last item since the continued application of technology - computers, micrographics, telecommunications - has great implications for library, archive and information services alike. The application of computer technology to printing and book production and to the production of material in electronic form alone raises a whole new vista. The problem is not the technology as such, which already exists in industrial societies (though it is expensive), but the resolution of problems existing in the interface between human organization and technology. A crucial problem is how fast can the human mind, or rather the body politic, cope with the period of transition to the already forecast paperless society or anything similar to it. Educational programmes will have to take account of these problems and be sensitive to change. In advanced countries, newspapers are already being produced by computerised methods and it is possible to forecast data bases available only electronically (without a corresponding book form) as printing costs rise increasingly against smaller increase in, for example, the cost of living and salary scales. In 40 years the price of Chemical Abstracts

has risen 400 times, while academic salaries in Britain only 12 times. The lesson is clear. The difficulty is to persuade humanity to accept the already existing fruits of technology. This will be a major and continuing task of information educators while at the same time retaining a curriculum which will produce informed and well educated specialists. The future has every challenge to offer: curriculum development will continue to be an exciting subject.

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