

MODULE -1

HISTORICAL AND PHILOSOPHICAL BASES OF NIOS OPERATIONS

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1.1 Introduction

One of the concerns that led to the emergence of the *Open Schooling System* in various countries was their endeavour *to provide education to those who could not attend conventional schools* for a variety of socio-economic reasons, as well as to *those who missed opportunities to complete school education and developmental education*. Gradually the open schooling system with inherent flexibilities about the choice of subjects, place and pace of studies and the *paradigm shift from “you learn what we offer” to “we offer what you want to learn”* has gained ground and attained the status of an independent sub-system of education. The shift being emphasized by this system is from ‘*education as one time activity*’ to ‘*education as life long activity*’. The open and distance learning (*ODL*) mode of education is now *being preferred* not only by the disadvantaged and drop-outs but also by those who need an easy access to school education. Formal education systems suffer from limitations with regard to expansion, access, equity and cost-effectiveness. As a result, it is not able to cater to the needs of large numbers of individuals, who would like to go in for education. It is well known that NIOS is presently the largest open schooling system in the world. In this Module we discuss a few basic aspects of the historical and the philosophical bases of ODL as well as NIOS.

Objectives of this Module

After going through this Module, you should be able to:

1. Explain the principles of open and distance learning;
2. State the importance and benefits of education through open schooling;
3. Explain the ways in which the formal education system differs from open schooling;
4. Describe the contribution of open learning as an alternative to formal learning;
5. Compare the various models of Open Schooling; and
6. Outline the NIOS system in the light of the above five objectives.

1.2 Foundations of Open Learning and Distance Education

Open Learning and Distance Education benefited a great deal from innovations made in the process of developments in Educational Technology. This made it possible to bring a paradigm shift from institution-led learning to own-time learning at a distance, i.e. from teaching to self-paced-learning. Added flexibilities and openness in the process led to the evolution of open and distance learning.

1.2.1 Understanding Open Learning and Distance Education

Some people use the terms Open Learning and Distance Education inter-changeably, but the fact is they do not mean the same thing. Open learning is a system of learning guided by the philosophy of freedom to learn without the constraints that are characteristic of conventional education. Distance education, on the other hand, is a mode of education, a methodology adopted to make open learning possible. In materializing the concept of open learning by means of the distance mode of education, we enter a field of operation that has come to be called Open and Distance Learning (ODL). Open learning is a philosophy, which is characterized

by learner-centredness, openness in terms of learners' access to educational provisions, flexibility in the organization of learning and the process of achieving success in learning. On the other hand, distance education is a mode or methodology of organizing learning experiences to achieve the objective of open learning.

Open education is particularly characterized by the removal of restrictions, exclusions and privileges; by the accreditation of students' previous experience; by the flexibility of the management of the time variable; and by substantial changes in the traditional relationships between teachers and learners. On the other hand, distance education is a modality, which permits the delivery of study materials by means of multiple-media without the necessity of regular classroom participation, and wherein the individuals themselves are responsible for their own learning.

When we trace the growth and development of open learning and distance education, we notice that over the years the conceptual perspective has been transformed and broadened from Distance Teaching/Education to Open Learning. To explain the conceptual contributions that helped this evolution, we examine some of the better known definitions of distance education:

According to Peters (1973), distance education is a form of indirect instruction. It is imparted by media such as correspondence, printed material, teaching and learning aids, audio-visual aids, radio, television and computers. Thus as per this definition, distance education is characterized by:

- i. Indirect instruction, i.e. separation of the teacher and the learner.
- ii. Media, i.e. various means of distance teaching.

Moore (1973), defines distance teaching as the family of instructional methods in which the teaching behaviours are executed apart from the learning behaviours, including those in a contiguous situation performed in the learner's presence, so that communication between the teacher and the learner must be facilitated by print, electronic, mechanical or other devices. Thus as per Moore's definition distance education involves:

- i. The separation of teaching behaviours and learning behaviours.
- ii. The application of multi-media in distance teaching.
- iii. Communication between the teacher and the learner including that in the face-to-face situations.

Dohmen (1977) of Germany focuses, on two aspects of distance education. These are: self-study, and the use of media for educational communication.

Holmberg (1981) defines distance education as the kind of education, which covers "the various forms of study. which are not under continuous, immediate supervision of tutors present with their students in lecture rooms on the same premises, but which nevertheless, benefit from the planning, guidance and tuition of a tutorial organization".

The main characteristics of distance teaching/education that Keegan (1986) has put together are:

- i. The separation of the teacher and learner.
- ii. The use of multi-media together with information and communication technologies as a means of teaching/education.

- iii. Occasional meetings and indirect communication replace the contiguous, face-to-face teaching.
- iv. The distance teaching institution has to play an important role in terms of planning, guidance and tuition, i.e. student support and high quality learning materials to ensure effective learning.

Now let us examine some definitions of *open learning* to understand this concept more clearly.

According to Lewis and Spencer (1986), open learning is a term used to describe the system in which courses/subjects are designed flexibly to meet individual requirements of learners. It is often applied to the provision which tries to remove barriers that prevent participation in the traditional courses, and also suggests a learner-centred philosophy. Thus, the major points emphasized in this definition of open learning are:

- Learner-centred philosophy,
- Flexible design of courses/subjects,
- Attention to individual requirements, and
- Removal of barriers.

Open learning, in this sense, is characterized by its progressive outlook and innovative and flexible approach. It places more emphasis on the learner, his/her needs, interests, etc. than any thing else. That is why we use the terms *flexible courses/learning* and *freedom to learn*, as this system attends to the individual and societal needs in terms of *what to learn*, where *to learn* and *how to learn*.

According to Dixon (1987), open learning involves a “wide range of learning opportunities that both aim to assist learners in gaining access to knowledge and skills they would have otherwise been denied and to give learners the optimum degree of control over their learning”. The major characteristics of open learning as per this definition are:

- *Access to knowledge and skills,*
- *Optimum degree of control over learning, and*
- *Free access to educational opportunities.*

Here the term *optimum degree of control* means that the course and the content of learning are not stipulated rigidly and independent of the learners, but they start from and are shaped by their individual value perspectives, interests and experiences. The learners can study at their own pace, place and time and as a result they have optimum control over their learning.

According to Holt and Bonnici (1988), open learning is a multi-faceted concept. It attempts to reduce, if not eliminate, a number of barriers, which either stop or impede certain groups of learners from participating in formal education. The major characteristics of open learning as per this definition are:

- *It is a multifaceted concept,*
- *It attempts to reduce the barriers of formal education, and*
- *It also attempts to provide a learning environment with the best possible chance of success.*

According to Rowntree (1992), open learning “involves reducing barriers to access and giving learners more control over their own learning”.

Based on the definitions outlined above, we may conclude that distance teaching and open learning complement each. A distance education institution can be *open* or *closed*. An open learning course could be offered on campus or at a distance. However, a simplistic distinction can be made by considering open learning as a system of learning guided by the philosophy of freedom to learn. Distance Education, on the other hand, can be considered as a methodology adopted to make open learning possible. The two together, as said earlier, make what is called Open and Distance Learning (ODL).

Need for Open Schooling

The educationally disadvantaged persons miss out educational opportunities because of the reasons such as:

- Gender inequalities,
- Economic reasons,
- Physical handicaps, and
- Isolation of their home communities.

Today, open schooling is helping in meeting some of the educational challenges in developing countries as it provides an alternative and an economical way of increasing access to education and training opportunities. In India, the National Open School was set up in 1989 with a mandate to:

- Universalize education,
- Increase social equity and justice, and
- Develop a learning society.

The National Open School was re-christened as the National Institute of Open Schooling in 2002.

The open schools in the Commonwealth countries, such as Australia, New Zealand, India, etc, were established primarily to increase access, particularly for such learners who fail to attend traditional schools.

In developed countries, on the other hand, open schooling provides:

- the same learning opportunities for learners from families living outside their countries;
- opportunities to learners who cannot attend traditional schools because of:
 - Discipline problems,
 - Incarceration, or
 - Living in remote areas;

Further, open schooling provides the following facilities also:

- the right to parents to “home-school”,

- a wider variety of course offerings, particularly for the learners in rural areas, and
- specialty courses that do not attract large numbers of learners.

In developing countries, open schooling is seen as:

- an economical alternative to traditional schooling,
- a reasonable means of education for children/youth who must work, or have other responsibilities, and
- a socially acceptable means for girls/women to acquire education.

Once established, the open and distance learning system provides a cost-effective way for increasing the number of learners served. In developing countries, therefore, open schooling is considered a necessity for providing universal access to education at all the levels.

1.2.2 Principles of Open Learning and Distance Education

In order to have a better understanding of Open Learning and Distance Education, let us reflect on the basic principles of the ODL system.

According to Otto Peters (2001), a system can be considered to be an open learning system when it is based on the following principles.

- The *equity* principle implies that the acquisition of knowledge, skills and attitudes is open to all, i.e. nobody is excluded in the process of such acquisition.
- The principle of *equal opportunity* means that traditional barriers to education, such as economic difficulties for low-income groups, gender-specific educational practices, unfavourable socio-cultural milieus or membership of minority groups, are removed.
- The principle of *lifelong and ubiquitous (i.e. that which is present/available always and everywhere) learning* means that learning is not bound to various stages in one's life, nor to locations or timings. It must be possible to learn at any time of one's life, that of a day and anywhere.
- The principle of *open curricula* means that teaching programmes may not be completely developed and determined beforehand in an empirical, scientific manner, but they may be designed in such a way as allows them to accommodate unforeseen developments in the build-up of individual's ability to act and such other limitations on the part of learners.
- The principle of *learners' relatedness* implies the course of learning is not to be stipulated rigidly and independent of the learners, but should start from and be shaped by their individual value perspectives, interests and experiences.
- The principle of *autonomous learning* means that learning and teaching institutions allow learners to organize their learning themselves.
- The principle of *learning through communication and interaction* highlights that learning is not initiated and steered by means of ritualized presentation and reception processes, but by means of interaction, discussions and active management of the teaching-learning transaction.

- The principle of *relatedness to everyday life* means that learning does not take place in institutions that are defined by bureaucratic organization, but in everyday life and practices.

An autonomous learner can learn on his/her own. The learner studies independently in his/her own environment free from the constraints of ‘inappropriate class placements’. This is facilitated by self-instructional materials. While going through self-instructional material, the learner does not feel the absence of face-to-face contact with the teacher. The immediate pedagogical implication of this philosophy is that we look for unorthodox means and modes of educating all those who are willing to be educated. This can be linked with the establishment of NIOS, an institution that caters to the needs of those who are desirous of pursuing education on their own.

From the principles enunciated by Otto Peters (2001), it is evident that *open and distance learning* essentially provides for democratization of educational provisions/opportunities and advocates lifelong learning, autonomous learning and learning relevant to every-day life.

1.2.3 Open and Distance Learning along the Time-Place Continuum

Any Open and Distance Learning (ODL) Programme can be mapped in a two dimensional space along the axis of time and place. The time continuum varies from *real time interaction* (between all the learners and their tutors/instructor) at the one end to *interaction at different times* at the other end. The place continuum varies from a *single/same place (where all must gather)* to *different places* occupied by different learners and their tutors/instructors.

ODL along the Time-Place Continuum: Possibilities

The following four situations are possible for practicing open and distance learning.

- i. Same place – Different time, e.g. learning resource centers, which learners visit at their leisure.
- ii. Same place – Same time, e.g. classroom teaching, face-to-face tutorials, seminars, workshops during personal contact programs and residential schools.
- iii. Different place – Different time, e.g. home study, asynchronous computer conferencing, tutorial support by e-mail and fax communication.
- iv. Different place – Same time, e.g. audio conferences and video-conferences, tele-conferencing with one-way video and two-way audio, radio with listener-response capability, telephone tutorials and synchronous computer conferences.

Most of the ODL institutions use a combination of these four situations depending on the available resources and the characteristics of the target groups.

Check Your Progress – 1.1

1. Distinguish between Open Learning and Distance Education.
2. List the four situations of Open and Distance Learning that arise from the Time- Place Continuum.
3. Identify the main concepts that are common to Dohmen and Moore.

1.3 Open Schooling System: Birth and Development

1.3.1 Paradigm shift in the Schooling System

Paradigm shift is the term used by Thomas Kuhn in his book *The Structure of Scientific Revolutions*, published in 1962. It describes how new scientific theories develop when the older ones fail to explain/accommodate the new facts that come to light in the process of exploration, or the facts already known are explained in a better and simpler way. The term *Paradigm Shift* has found uses in other contexts, representing the notion of a *major change* in a certain thought pattern or a radical change in personal beliefs, complex systems or organizations, replacing the former way of thinking with a radically different way of thinking. In this section the expression *paradigm shift* has been used in relation to the evolution of open schooling as an *alternative* to the formal system of schooling. The conventional system of schooling has become so standardized and uniform that despite its immense contribution to human society, many a social barrier, such as *fixed space*, *fixed time* and *operational rigidities* compelled the planners to look for alternative systems of imparting education. And the result was the evolution of open and distance schooling.

The concept of *Learning Society* has been emphasized in the document '*Learning to be: The world of Education Today and Tomorrow*', which formed a part of the report of the International Commission on Education headed by Edgar Faure in 1972. It views learning as a lifelong process and the society of human beings as a *learning society* in which everybody is a lifelong learner. It is at this juncture that while looking for alternative mechanisms to strive for developing a *learning society*, the potential of the *open learning system* using *distance education* methodologies was recognized even for school education.

Open Learning and Distance Education System as explained, can transcend geographical as well as social and cultural barriers, including those of gender, by providing learning opportunities with freedom to learn at a distance. The system made its beginning through correspondence programmes in early sixties. Such programmes, offered by various institutions, opened up new opportunities for own-time-education, i.e. a learner could learn on his/her own at a time convenient to him/her without going to an institution. Thus, there was a move from institutionalized learning to self-paced learning materialized at one's own-place. An example of such an institution is the *Patrachar Vidyalaya*, Delhi, which has already been phased out.

Though correspondence system of education extended a facility to study at one's own pace, it had some limiting features. It had the same scheme of studies, syllabus and examination system as those of the formal system. The only difference was that correspondence students studied at a distance, whereas the conventional students received face-to-face instructions in the classroom. These limitations could possibly be the reasons that the *Patrachar Vidyalaya* was phased out. The use of just one medium of communication, i.e. *correspondence*, could not completely replace or compensate for face-to-face instruction, as it could not satisfy the expectations of *distance learners*.

Peters (1973), recognized distance education as an *Industrialized form of Teaching and Learning*. He defined distance study in the following words, "Distance study is a rationalized method . . . involving the definition of labour . . . of providing knowledge which as a result of applying the principles of industrial organization as well as the extensive use of technology, thus facilitating the reproduction of objective teaching activity in any numbers, allows a large number of students to participate in — study simultaneously, regardless of their place or residence and occupation". As a mediated form of instruction, *distance education* can reach many individuals in circumstances in which they would otherwise be deprived of opportunities to learn.

In recent years, all of us expect better choices and the emphasis has since shifted from *selling* to *marketing*. You can compare the traditional pattern of education with a traditional industry, which is producer centred, i.e. the teachers and the institution concerned offer what is available to them, irrespective of what the learners need. Thus flexibility to meet the learning needs of learners as individuals and in groups and to give the learners increasing responsibility of their own learning within a framework of support helps in opening up learning opportunities, which the learners would otherwise be denied. With this philosophical stand, the new era of Open Learning ushered in a shift in the learning paradigm making way for “Freedom to Learn”.

1.3.2 Growth and Development of Open Schools

By now you must be convinced that in order to achieve the goal of universalisation of school education and to provide large scale facilities for continuing education, the role of alternative schooling, particularly of open schooling, cannot be overlooked.

In developed countries, by virtue of appropriate legislation, school instruction is available to every one and the level of retention at schools is very high. In fact, you may be surprised to know that to provide the opportunity to exercise this right of a citizen, the first correspondence school programme was launched as early as 1914 in Australia by Victoria University at the request of a parent living in Beach Forest, Otway Mountains. By 1916, a special correspondence branch was established at Victoria University. The success of this school programme led to the continual growth of distance education, both at the primary and at secondary level in Australia. It soon spread to all other Australian States and Territories. In 1919, distance learning centers were introduced in Canada and in 1922 correspondence schools came up in New Zealand.

Alternative schools, whether we call them Correspondence Schools, Distance Learning Centres or Open Schools, emerged in the developed countries like Australia, Canada and New Zealand from concerns about how to provide a minimum level of education to all. Such concerns could be attributed to two factors:

- Reaching out with education to the disadvantaged groups of population in dispersed locations where conventional schools are not viable; and
- Providing a choice to students (and their parents) for what they want to learn.

In developing countries like India, Indonesia, Mexico and others in Africa and elsewhere, the development of Correspondence Schools and/or Open Schools arose out of the concern for lack of resources that led to fewer school education opportunities for large populations and low percentage of retention at schools. As may be seen, this concern is strengthened not only by the above two factors, but also by the following two additional factors:

- Need for providing a safety net to school dropouts so that they do not lapse into illiteracy; and
- Need for providing education to those who cannot attend conventional schools for a variety of social and economic reasons as well as to those who missed out and are now ‘over aged’.

As a result, the open schooling system is progressively becoming more and more popular and important in developing countries, where it is used as an alternative or a complementary schooling system, depending on the needs of the country concerned.

The international concern for Universalisation of Education has also brought a significant boost to open

schooling. The E-9 Summit of the nine highly populous countries held in December, 1993, in New Delhi, brought recognition to national efforts to use open schooling as an instrument for universalizing education at the school level. Thus, to achieve the aim of universalizing school education, the nature of *the paradigm shift* in school education is recognized at both the levels – the national and the international.

Having discussed the philosophy, the history and the meaning of open schooling in general, we now turn to its practical and operational aspects. It does not have single universal form; it is implemented in different ways, depending on the country in which it is located and the reasons for introducing it.

1.3.3 Models of Open Schooling

On the basis of our experience and observations, we may classify the various models of open schooling existing in India into the following three types:

- i. Freestanding autonomous institutions established by the Central government or State Governments
- ii. Institutions operated mostly by a Board of School Education which looks after the functioning of formal schooling system also, and in some case by the Directorates of Teacher Education, Research and Training responsible to conduct research in education and implement innovative measures to cater to the educational needs of the States concerned.
- iii. An extension unit of a department in the form of a *center for open schooling*.

In other words, in India we have three distinct types of ODL operations that provide school level education currently. We briefly describe each one of them as follows:

Single Mode Operations/ Institution

A single-mode operation/institution is a wholly dedicated distance learning institution. Its advantages include a strong specialist staff, the absence of institutional resistance to a new and different form of pedagogy, and the institution's potential to serve large numbers of students including those from foreign countries. A good example of this type of institution is the National Institute of Open Schooling, New Delhi. It has been set up to offer school level courses of study at a distance only by using different media and materials that include print, computer assisted support and satellite based instruction.

Dual Mode Operations/Institution

Dual mode operations are set up to offer the *same courses* by *two modes*, one using the traditional classroom-based methods and the other by using distance education methods, like the correspondence education, etc. The dual-mode approach has numerous advantages. It makes use of and is supported by an existing academic community and research capacity. Classroom and distance instruction are based on common materials and performance is evaluated using common standards. It can be introduced and developed gradually as and when resources permit. Where an academic credit system is employed, students can move back and forth between distance and conventional classroom study, or pursue a combination of the two. In smaller institutions, this approach enables a broadening of curriculum and allows courses to be taught when academic staff is on vacation or when academic positions are vacant. The main disadvantage of dual-mode institutions is that efforts to introduce distance-learning approaches within a traditional setup based on face-to-face teaching are likely to encounter stiff resistance from the existing academic and administrative staff. Administrative rigidities, limited management autonomy and lack of programme flexibility

add to the challenge of promoting the required changes. Often, the inclusion of special performance criteria, which recognizes staff contributions to distance education programmes, together with financial incentives for the additional time required, can help to overcome this conservatism. At the tertiary level, Delhi University is good example of a dual mode operation/institution. At the school level, we may think of the various State Boards of Secondary/Senior Secondary Education that oversee conventional schools as well as open schools. State Open Schools function primarily with the purpose of catering to the regional needs in terms of the use of regional languages as the media of instruction and coverage of variations in culture and environment, while keeping the national interest of the country at large in view.

Extension Operations

Strictly speaking, these operations do not serve what is generally known as the school level education. Very often these operations are run by NGOs for developmental purposes. Over decades now, many NGOs have been providing developmental education and training in face-to-face situations. Sensing the potential of the ODL system, many of them have established ODL units to reach larger segments of population, and many of the programmes they offer are of the school level.

Check Your Progress – 1.2

1. Indicate the factors that led to the evolution of Open Schooling System.
2. Who defined Distance Education as an industrialized teaching/learning system?
3. What is the term used for the institution that offers the same courses in two modes, one using traditional classroom based teaching and the other using distance methodology?
4. What are the major barriers posed by traditional school education?
5. By now you may have sensed what NIOS may be. In the space given below, please write down as many *key words and expressions* as you can associate with NIOS. (Then, go on to cross-check your list with what you find in the following Section).

1.4 National Institute of Open Schooling (NIOS)

Of the models of open schooling system discussed in subsection 1.3.3, the National Institute of Open Schooling, New Delhi, fits the description of the first model, i.e. *a single mode dedicated ODL institution*.

1.4.1 A Brief History of NIOS

The beginning of ODL operations at the school level in India may be traced to the introduction of

correspondence courses at the matriculation level by the Board of Secondary Education, Madhya Pradesh in 1965. Some other states like Rajasthan, Uttar Pradesh, Orissa, etc. followed suit. The syllabus, the year-end matriculation examination and certification modalities in all the States were no different from those followed at the respective day schools, i.e. this newly introduced system was a ‘*supplementary*’ system. At the time of registration *correspondence students* were given course materials, no different from text books in format and intent, and then they were left to themselves to prepare for examinations.

Nothing significant happened for more than a decade, when in 1979, the Central Board of Secondary Education, New Delhi, set up an Open School as a project activity. It was an initiative to move towards an ‘*alternative system*’ that provided for open entry, flexible choice of courses and flexibility in the duration for course completion, etc. By this time both the Central and the State Governments had realized that alternative schooling systems were the only answer to the three fold challenge stated in the National Policy on Education (NPE) 1986/1992—i) access had to be increased exponentially, ii) students had to be retained on courses once they were registered and iii) they had to be supported to complete their courses successfully.

Because of the growing pressures from the out-of-school children, adults coming out of the Total Literacy Campaigns and Post Literacy Programmes and the success of the Open School Project, the Ministry of Human Resource Development, Government of India, closed the CBSE Open School Project and established the National Open School (NOS) in 1989. And then in 1990, through the Government Resolution No. F.5-24/90, Schedule 3, dated 14 September, 1990 (*Gazette of India*, 1990), NOS was vested with the authority to register, examine and certify students registered with it up to the pre-degree level of education. This way NOS came to have two main functions—i) to function as a school, i.e. register students, offer courses, arrange the process of teaching and learning, etc. like other schools in the country and also ii) to function as a School Board to arrange a) the conduct of public examinations for the secondary and higher secondary levels and b) the award of certificates to those who cleared its examinations successfully.

In July 2002, NOS was upgraded to function as *the national apex* body for open schooling in the country. Now, it was given a new name, the National Institute of Open Schooling (NIOS), and also a new mandate (NIOS Report, 2007) to provide relevant continuing education at school stage up to the pre-degree level through the Open Distance Learning System *as an alternative to formal system* and to prioritize client groups, in pursuance of the normative national policy documents and in response to the needs assessment of the learner bodies, and thus to make its contribution:

- to universalisation of education,
- to greater equity and justice in society, and
- to the evolution of a learning society.

As an apex body, NIOS functions as a resource organization for all the States and Union Territories in the country. Besides material support, it arranges consultancy and advocacy programmes for them. So far ten States have set up their State Open Schools and many more are in the process of doing so.

1.4.2 Functions of NIOS

In addition to helping the States and Union Territories in various ways as mentioned above, NIOS caters to the educational needs of five distinct groups of learners:

- i. Open Basic Education (OBE) Courses cater to children (up to 14 years of age), adolescents and adults. Depending on the entry behaviour of the learners, they may work on courses to prepare themselves for levels equivalent to standards 3, 5 or 8 of the formal system of education. NIOS implements these courses through about 250 voluntary agencies and Zila Saksharta Samities (District Literacy Committees). NIOS provides the study materials, orientation to resource persons and joint certification, while the said agencies provide local study centres and other facilities.
- ii. Secondary Education (High School) Course prepares learners for the Secondary School Certificate.
- iii. Senior/Higher Secondary Course prepares learners for the Senior Secondary School Certificate.
- iv. Vocational Education Courses in Agriculture, Business and Commerce, Engineering, Technology, Health and Paramedical Education, Home Science, Hospitality, Teacher Training, Computer and IT Applications, etc. prepare learners for appropriate certification leading to entrepreneurship and employment in relevant fields.
- v. Life Enhancement (i.e. enrichment) Courses for any person of any age and any vocation.

1.4.3 Objectives of NIOS

The objectives of NIOS, as approved by its governing body are:

- To provide sound professional advice to the Government of India and to the States regarding the proper development of Distance and Open Learning System at the School level and to give financial contribution wherever necessary for establishment of State Open Schools (SOSs) and State Centres of Open Schooling (SCOS).
- To develop and prescribe or offer a wide spectrum of courses of study, for purposes of general, vocational continuing education, either leading to certification at the pre-university level (including Certificates/Diplomas) or for life and job enrichment.
- To play a nodal role in developing a network of Open Schooling in the country and to share resources with states in adapting the course material.
- To plan and organize intensive training for capacity building in the area of open schooling at the national level.
- To make arrangements for transfer of credits, data base on open learning, prescribe rules for registration of students and the conduct of examinations.
- To emerge as a nodal resource/capacity building center for developing countries so as to develop itself as a resource organization to serve the open learning system.
- To develop and prescribe or offer Vocational Education to its students.
- To develop study materials, using print as well as non-print media.
- To collaborate with institutions to provide learning assistance to the students through Study Centres and establish Regional Centres for the promotion of Open Schooling.
- To serve as an agency for the effective dissemination of information related to Distance Education and Open Learning through publication of newsletters, bulletins or journals.

- To identify and promote standards of learning in Distance Education System and Open Schools in order to maintain standards of equivalence with the formal system, while retaining its own distinct character.

1.4.4 Target Groups of NIOS

NIOS reaches out to prioritized client groups, which include school dropouts and marginalized groups such as rural youth, urban poor, girls and women, scheduled castes and scheduled tribes, backward classes, differently able people and ex-service personnel. Currently, the National Institute of Open Schooling has on its rolls more than 13 lakh (1.3 million) learners. The fact that almost every State and Union Territory of India is represented on the rolls of NIOS, is a clear indication that the *open learning system* is serving the real life needs of a large segment of the Indian population.

1.4.5 Salient Features of NIOS

- An opportunity to continue education using modern means of communication and information technology
- Freedom to choose subjects, according to one's needs, interests and abilities
- No upper age limit
- Learning support through Personal Contact Programmes (PCPs) at Study Centres
- Continuous assessment through Tutor Marked Assignments (TMAs)
- Credit accumulation facility over a period of 5 years with nine chances to appear at examinations pertaining to a course (secondary or senior secondary)
- Decentralized services made available to learners through Regional Centres and Accredited Institutions for the effective implementation of NIOS programmes
- Re-admission of partially successful learners after the completion of the registration period of five years (credits accumulated are carried forward to the next set of five years)

Transfer of credits from CBSE, CISCE, UP Board of Secondary Education, Uttaranchal Board of Examination, Madhyamik Shiksha Board of Madhya Pradesh, Board of Secondary Education of Rajasthan, Jharkhand Academic Council, Assam Higher Secondary Education Council, Bihar Intermediate Education Council, Bihar School Examination Board, and State Open Schools

1.4.6 Courses and Subjects offered by NIOS

The terms *course* and *subject* have distinct meanings at NIOS. A learner preparing for the secondary school examination is said to be on the *secondary course*, and the five disciplines that he/she is to study are called *subjects*. Thus, mathematics, biology, economics, etc are *subjects*. An innovation introduced by NIOS is that *vocational subjects* are taken at par with *academic subjects*. So a student may take English, two academic subjects and two vocational subjects to claim a secondary or a senior secondary certificate. The *subjects* (NIOS 2006) currently available for the secondary and senior secondary certificates through NIOS are as follows:

Table 1.1 : Secondary and Senior Secondary Subjects available at NIOS

Subjects available at the Secondary Level	Subjects available at the Senior Secondary Level
<p><u>Language Subjects</u></p> <ol style="list-style-type: none"> 1 Assamese 2 Bengali 3 English 4 Gujarati 5 Hindi 6 Kannada 7 Malayalam 8 Marathi 9 Nepali 10 Oriya 11 Punjabi 12 Sanskrit 13 Telugu 14 Urdu <p><u>Academic Subjects</u></p> <ol style="list-style-type: none"> 1 Mathematics 2 Science & Technology 3 Social Sciences 4 Economics 5 Business studies 6 Home Science 7 Psychology 8 Indian Culture & Heritage <p><u>Vocational Subjects</u></p> <ol style="list-style-type: none"> 1 Word Processing (English) 2 Typewriting (Hindi, English or Urdu) 	<p><u>Language Subjects</u></p> <ol style="list-style-type: none"> 1 English 2 Hindi 3 Urdu <p><u>Academic Subjects</u></p> <ol style="list-style-type: none"> 1 Mathematics 2 Physics 3 Chemistry 4 Biology 5 History 6 Geography 7 Political science 8 Economics 9 Business studies 10 Accountancy 11 Home science 12 Psychology 13 Sociology 14 Painting <p><u>Vocational Subjects</u></p> <ol style="list-style-type: none"> 1 Computer Science 2 Secretarial Practice 3 Word Processing (English) 4 Typewriting (Hindi or English) 5 Stenography (Hindi, English or Urdu)

Note: To get a certificate at either level, one has to complete five subjects successfully, of which at least one has to be a language subject. The remaining four subjects to be taken are left to one's choice, except that no one can take more than two language subjects.

As already indicated, in addition to Secondary and Senior Secondary Courses, NIOS offers more than fifty vocational courses (NIOS Annual Report, 2003/4) through the open distance modality, the first few of which were launched in 1997-98. Significant progress has been made in this area of operation since then.

1.5 Subsystems of Open Distance Education/Learning

It should be obvious from the description presented in Section 1.4 above that NIOS is a complex institution (for further details about its three-tier organization, please see Module-2). The best way to appreciate its complexity is to compare it with conventional schools.

1.5.1 Subsystems of Conventional Schools

Conventional school systems comprise two subsystems—i) the academic subsystem and ii) the administrative subsystem. The former appears in the form of various academic departments (such as, the Department of Social Sciences, Department of Humanities, etc) and the related academic staff who are responsible for offering courses/subjects in classroom situations. And the latter appears in the form of administrative departments (such as, the Finance/Accounts Department, the Department of Personnel, etc) and the related staff who are responsible for administrative services required by the institution concerned. There is hardly any variation in this organizational pattern as far as the conventional schools in the country are concerned.

Further, all such schools are *single-tier operations*, i.e. all the activities, such as the registration of students, teaching, house examinations, etc, materialize at one place, the school. It is only the secondary and higher secondary public examinations, which are conducted by relevant Boards of Education, that are conducted at different places called examination centres. In contrast with this type of organization, open schools require a much more elaborate and multi-tier organizational setup to achieve their objectives.

1.5.2 Subsystems of Open Schools

Generally, open distance school systems comprise four subsystems—i) the academic subsystem, ii) the administrative subsystem, iii) the industrial subsystem and iv) the technology subsystem. The first two these are more or less similar to those of the conventional schooling system.

The third (i.e. the industrial) subsystem comprises the departments and the related personnel that are responsible for the mass production and distribution of study materials in print and electronic forms and also the audio-video programmes. Such departments function like industrial units and must accommodate the usual promises and problems of industries in general.

The fourth subsystem pertains to *information and communication technology*. Usually, it is a single department/unit comprising a number of subunits and the related personnel that look after technology related matters, such as, the selection, purchase and installation of equipment; the preparation of institution-specific programs for administrative, financial and academic purposes; the preparation and maintenance of various databases; the management of instructional servers and communication among the various tiers of the organization; etc. With the increasing use of technology in administration, academic activities and communication, this subsystem is going to more and more significant with every passing year.

As you may guess, NIOS has all the four subsystems and their inter-related functioning binds the three tiers of NIOS into a unique enormous system that can manage thousands of learners spread all over the country. In order that this complex system remains healthy and functional, it has to be based on sound principles of management.

1.5.3 Systems Approach to Open Schooling

It is clear that in a complex system, like the one outlined in subsection 1.5.2 above, all the subsystems must be interrelated. Application of the *systems approach* to an educational system like NIOS implies a process that allows its subsystems to operate at optimum levels of efficiency for achieving its desired institutional goals. Further, *this approach* helps in identifying the strengths and weaknesses of all the subsystems and in introducing improvements wherever needed. A brief discussion on its features (i.e. organization, interaction, interdependence and integration) is in place here.

Organization implies the arrangement of components in a system, their relationship and linkages and the line of control that helps to keep things together and achieve the set objectives. In the National Institute of Open Schooling, the hierarchical relationship starting with the Chairman on the top leading downward to the various Department/Unit Heads and so on represents the organizational structure. Such an arrangement portrays system-subsystem relationships, defines the structure of authority, specifies the formal flow of communication and formalizes the chain of command. The major subsystems of the National Institute of Open Schooling grow from the mission and objectives of NIOS and have well defined functions to perform.

Interaction refers to the manner in which each component functions in relation to other components of the system. Because of the large variety and vast numbers of learners, open learning operations become very large and the related logistics very complex and at times cumbersome. In such a situation, in order to facilitate effective functioning of the overall system, it is necessary that there is regular interaction among its components. For example, in the National Institute of Open Schooling, the Course Development Unit of the Vocational Education Department must interact with the Evaluation Department to provide relevant tools of evaluation and shape subjects in a way that they respond to those tools. Similarly, the Course Development Unit has to interact with the Graphics Unit so that the graphics are prepared as per the requirements of the course concerned.

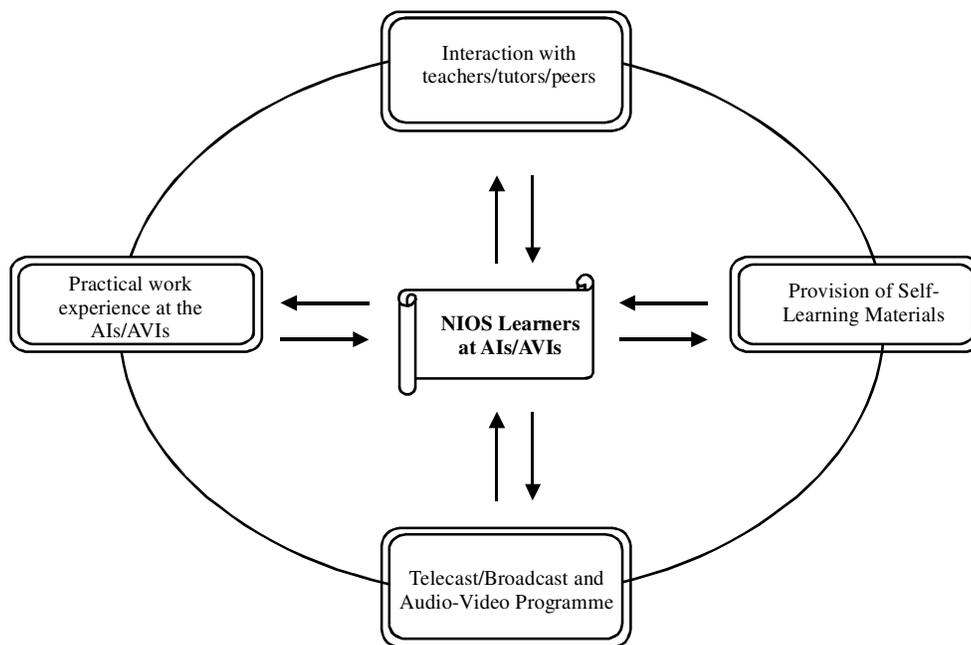
Interdependence means that the components of the organization are not independent entities; instead they depend on one another, i.e. they are coordinated and linked together according to a plan. For example, the functioning of the Material Production and Distribution Unit of the Administration Department depends on the functioning of the Course Development Unit of the Vocational Education Department, as the former cannot go on to the task of production until the latter hands over the handover version of the course materials for production. They can produce multiple copies of learning materials only when the Course Development Unit of the Academic Department provides the final version of the materials. They can distribute the materials to registered learners only when they get the data about the learners from the Computer Unit. The Computer Unit, in turn, gets the data of learners from the Student Support Service Department. None of the Departments can function in isolation and for the overall success of the institution, each of its components has to honour the schedules of other components/units.

Integration implies that *the various components* need to work together in unison within the system, even though each one of them performs unique functions of its own. For example, although the Computer Unit has its unique function of maintaining NIOS learner related data comprehensively, this function is integrated with the activities of Accredited Institutions and other units and departments. Without such integration, it cannot outline or declare, at any point in time, the status of learners who join the open schooling system of NIOS. It is well known that successful integration results in *synergies* and greater overall impact than is possible in its absence.

1.5.4 Three-tier Model of NIOS

NIOS runs a three-tier model for its operations with Headquarters at New Delhi. It operates through a network of 11 Regional Centres and more than 3000 study centres. The Regional Centres oversee the study centers of their respective regions. The study centers catering to learners on academic programmes are called Accredited Institutions (AIs) and those catering to learners on Vocational Programmes are called Accredited Vocational Institutions (AVIs). In 2006, there were 1,826 AIs and 908 AVIs in operation all over the country. Also, there were 35 Special Accredited Institutions for the Education of the Disadvantaged (SAIEDs) and 270 Accredited Agencies (AAs) for lower level school education. Further, NIOS study centers in the UAE, Kuwait and Nepal provide educational services to non-resident Indians and other nationals settled there.

Figure 1.1 Activities organized at AIs/AVIs for NIOS Learners



1.5.5 Course/Subject Offerings: Formal Schooling versus Open Schooling Open schools offer a wide range of courses/subjects that compare favorably with the courses/subjects offered in conventional schools, which continue to remain the reference points for any comparison in terms of the socio-academic credibility of schooling systems. Since the major concern is that of providing education to all, mobility from open schools to conventional schools and vice-versa is of utmost importance.

Institutional offerings may be looked at in three different ways:

- i. One way is to emphasize commonality and comparability so that the learners from the open distance system have sufficient chances of migration to conventional schools. The open schools in Zambia and Alberta, for example, are two open schools that offer a majority of courses similar to those in conventional schools.
- ii. The second way professes total independence and functionality in the open school curriculum. This is a case more of contrast than comparison.

- iii. The third way now emerging is based on *eclecticism*, i.e. the approach that advocates combining the best and the most useful of all the practices known at a given time. An open school may offer a wide variety of courses/subjects, some of which are equivalent to those in the conventional schools, and some that are not. Here, *eclecticism* on the part of learners implies their choosing what they think is the best or most useful from amongst the several different sets of courses/subjects available to them. In addition there may be courses/subjects that are unique to the open school. Though the learners are free to choose any subjects; they are advised to choose combinations comparable to those in the conventional school system, if they plan to return to a conventional school or go on for such a branch of higher education, as would need specific school level subject combinations.

The National Institute of Open Schooling of India has adopted the *eclectic* approach. Currently, it offers various subjects at the secondary and the senior secondary levels and also some vocational courses. Some of its vocational courses (stand-alone subjects) can be combined with academic subjects for school certification at the secondary and the senior secondary stages. This approach has become viable largely because open schools do not have age restrictions and a significant proportion of open school learners are adults who do not necessarily seek registration at a college or university. They are motivated to learn for self-improvement by upgrading their qualifications and certification. On the other hand, those who choose to take conventional subject combinations are free to do so, and are thus able to migrate to the conventional system of schooling. This makes NIOS a versatile provider of school level education, that has no parallel in the country.

Check your Progress - 1.3

1. State the four aspects of a system?
2. List the four subsystems of the open schooling system.
3. What is the importance of *systems approach* in designing the open schooling system?

1.6 Let us Sum Up

- Access to education has been recognized as a basic human right in order to build capacity and competence for higher productivity and the consequent empowerment of people.
- Access alone does not ensure complete school participation unless schools can retain the registered students till they complete their studies, i.e. the dropout rate is brought down to nil.
- Rigidities of the formal system in terms of place, pace and time stand in the way of meaningful education opportunities for large numbers, especially so in the developing countries.
- Individual and societal needs and requirements in terms of what to learn, when to learn and how to learn are related to *freedom to learn* which the formal system is unable to provide.
- Over the past 150 years or so, in the process of trying to remove constraints that block access to education, slowly but steadily, education has undergone a *paradigm shift*, which was first seen in the move from *institution based learning* to *correspondence education* providing freedom of

location to learners and now in the form of *own-time* and *self-paced learning*.

- With the development of modern communication technologies and their multiple uses for instructional purposes, now distance education (i.e. a system in which teaching is conducted by some one removed in space and time from the learner) serves as a complementary as well as an alternative mode of education.
- The flexibility in meeting the learning needs of learners as individuals and in groups and that in giving them increasing responsibility for their own learning shifted the learning paradigm to *freedom to learn* and the new era of open learning ushered in.
- Meaningful education opportunities that are related to *freedom to learn*, particularly those provided by *the open learning system* using *distance education methodologies*, have been found to have immense potential for school as well as higher education. This has resulted in the creation and growth of *Open Schools* and *Open Universities* all over the world.
- Open Learning and Distance Education brought together at the school level gave birth to the system called Open Schooling, which is now seen as a viable and effective instrument of universalizing school education.
- Various models of the open schooling system have evolved over the years and their degrees of openness depend primarily on the policies that govern them.
- In India, this system manifests in the form and practices of the National Institute of Open Schooling, New Delhi.

1.7 Glossary

Asynchronous: Activities that are related but do not take place at one and the same time are called asynchronous activities. For example, a very common way of engaging in computer conferences is the use of Bulletin Boards. Created by the institution concerned, a bulletin board (in practice a web-page available on the Internet) is used by distance learners to record their questions, queries, doubts, etc as and when they get time to access it. The tutor concerned may access this board as many times as he wants according to his own convenience and respond to those questions. And the responses are then accessed by the learners according to their convenience. Of course, this exchange of communication is organized within a set timeframe, within which every participant can choose his/her own time to record what they want to convey—questions, responses, comments, etc.

Open and distance learning: Is a way of providing learning opportunities that is characterized by features unknown in the conventional classroom teaching, such as, the separation of the teacher and the learner in time or place, or both time and place; the use of a variety of media for the teaching-learning transaction; assured two-way communications that allow learners and tutors to interact; the possibility of occasional face-to-face meetings; and a division of labour among the various types of specialist in the processes of course development, production and delivery.

Open learning: A philosophical construct that advocates elimination of conventional constraints in the processes of education and learning. It emphasizes giving learners the choices of media, place of study, pace of study, support mechanisms, entry and exit points, etc.

Synchronous: As opposed to *asynchronous* communication (explained above), computer conferences can take place in real time, i.e. all the concerned can participate in the conference or the meeting at one and the same time. This is usually done in what are called *chat sessions*. Again, the institution concerned makes a web-page available on the Internet, which is accessed by all the participants (learners and the tutor concerned) at one and the same time according to a pre-set schedule. Learners enter their questions etc. and the tutor enters answers, explanations, etc., while the participating learners may post their comments/remarks here and there. In other words, it is like meeting in a classroom, where the written word (and not the spoken word) is used as the medium of communication.

Synergies: Ways of working together and putting in combined effort by different operators in different ways in order to achieve mutually beneficial results.

1.8 Check your Progress: Answers

Check your Progress 1.1: Answers

1. The distinction between open learning and distance education is a distinction between a philosophy and an activity. Open learning relates to the philosophy of freedom to learn, while distance education refers to a way of delivering education/training. Open learning refers to openness in terms of learners' access to educational provision, flexibility in the organization of learning and in the process of achieving success, while distance education is a mode or methodology of organizing learning experiences.
2. The following are the four scenarios of Open and Distance Learning that arise from the Time-Place Continuum.
 - i. Same place – Different time: Learning resource centers, which learners visit at their leisure.
 - ii. Same place – Same time: Classroom teaching, face-to-face tutorials, seminars and workshops during personal contact programs and residential schools.
 - iii. Different place – Different time: Home study, asynchronous computer conferencing, tutorial support by e-mail and fax communication.
 - iv. Different place – Same time: Audio and video-conferences; television with one-way video and two-way audio support; radio with listener-response capability; telephone tutorials and synchronous computer conferences.
3. 'Independent study', 'Self-study' and 'learner autonomy'.

Check your Progress 1.2: Answers

1. In spite of its immense contribution to the society, the formal schooling system has not been able to meet the educational needs of its varied constituents, as it is beset with many organizational and social barriers like fixed space, fixed time, social privileges, etc. The need for bringing education to all resulted in the search for alternative mechanisms for imparting education. This has led to the evolution of the open schooling system all over the world.
2. Otto Peters has defined Distance Education as an industrialized teaching/learning system, as its characteristics are like those of industries, such as division of labour, mass production of teaching

materials, systematization of work procedures and layout.

3. Dual Mode Institution
4. The major barriers faced by the learners in traditional schools are i) attendance at a fixed place at a fixed time and ii) operational rigidities (such as fixed study pace, fixed age for entry, fixed course choices, etc).

Check your Progress 1.3: Answers

1. The four aspects of a system are: Organization, Interaction, Interdependence and Integration
2. The four subsystems of the open schooling system are i) the academic subsystem, ii) the administrative subsystem, iii) the industrial subsystem and iv) the subsystem of technology.
3. Systems approach helps in setting the conditions for proceeding in an orderly way, as all the components of a system are interrelated and any change in one brings about changes in others. It provides a way of thinking about organizations and their problems and for the open schooling system it serves as a means that makes the instructional processes operate at optimum levels of efficiency to achieve the desired institutional goals. It also helps in identifying the strengths and weaknesses of the subsystems and provides solutions for problems they encounter.

1.9 References

Annual Report 2003-04, (2004), NIOS, New Delhi, pp. 34-36.

Dixon, K. (1987), *Implementing Open Learning in Local Authority Institutions*, Further Education Unit, London.

Dohmen, G. (1977), *Das Fernstudium, Ein neues padagogisches forschungs-und Arbeitfeld*. Tubingen, DIFF.

Edgar, F. (1973), *Learning to be: The world of education today and tomorrow*, Sterling Publisher (P) Ltd., New Delhi.

Framework and Networking System for Formulation of Educational Programmes, Monitoring of their Implementation and Evaluation in the Context of Open Schooling, Final Report, (2007), NIOS, New Delhi, p. 9.

Gazette of India, October 20, 1990, Government of India, New Delhi.

Holmberg, B. (1981), *Status and Trends of Distance Education*, Kogan Page, London.

Holt, D. and Bonnici, J. (1988), 'Learning to Manage Through Open Learning: a Case Study in International Collaboration', *Programmed Learning and Educational Technology*, Vol. 24, no. 3. pp. 245-257.

Keegan, D. (1986): *The Foundations of Distance Education*, Croom Helm, USA.

Lewis, R. and Spencer, D. (1986), *What is Open Learning?* Council for Education Technology, London.

Moore, M.G. (1973), 'Toward a Theory of Independent Learning and Teaching' *Journal of Higher Education*, Vol. 44. pp. 661-679.

NIOS at a Glance-2006, (2006), NIOS, New Delhi, p. 23.

Peters, O. (1973), *Die Didaktische Struktur des Fernunterrichts. Untersuchungen zu einer industrialisierten Form des Lehrens und Lernens*, Wiheim :Beltz.

Peters, O. (2001), 'Learning and Teaching in Distance Education: Pedagogical Analyses and Interpretations in an International Perspective,' Kogan Page, London

Reddy, G. Ram (ed) (1988), *Open Universities: Ivory Towers Thrown Open*, Sterling, New Delhi

Rowntree, D. (1992), *Exploring Open and Distance Learning*, Kogan Page, London.