

Indira Gandhi National Open University
Staff Training and Research
Institute of Distance Education

Block

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ECONOMICS OF DISTANCE EDUCATION

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MDE-417: Distance Education: Economic Perspective

(New Course in place of ES-317: Distance Education: Economic Perspective)

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MDE-417: Distance Education: Economic Perspective

Course Outline

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- Unit 3 : Cost Analysis in Education
- Unit 4 : Generation and Utilization of Resources

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- Unit 1 : The Economics of Mass Distance Education (*Greville Rumble*)
 - Unit 2 : The Distance Education Chameleon: New Technologies and the Changing Cost-Structure of ODL (*Thomas Hulsmann*)
 - Unit 3 : Comparative Cost Analysis in Distance Teacher Education (*Alison Richardson*)
 - Unit 4 : The Costs and Costing of Networked Learning (*Greville Rumble*)
 - Unit 5 : A System-Level Comparison of Cost-Efficiency and Return on Investment Related to Online Course Delivery (*Thomas Ramage*)
 - Unit 6 : Activity-Based Costing Models for Alternative Modes of Delivering On-Line Courses (*Chris Garbett*)
 - Unit 7 : Private Cost of Education: A Comparative Study of Distance and Campus-based University Students in Nigeria (*Felix Olakulehin & Santosh Panda*)
 - Unit 8 : Costing of Distance Learning: A Study of the Indian Mega Open University (*Ashok Gaba, Santosh Panda & C.R.K. Murthy*)
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INTRODUCTION TO THE BLOCK

The foundational concepts in 'economics of education', including especially educational costing, have been discussed in Block 1 of this course. With that foundational understanding, we proceed to discuss 'economics of distance education' in this Block. The four units of this block shall provide you a comprehensive understanding of the economic aspects of distance and online learning, which shall further facilitate to appreciate costing in distance education discussed in Block 3. The first aspect to deal with is how does distance education contribute to development of human resources vis-à-vis consideration of distance education as investment in human beings. Also, we have examined if distance education contributes to the effectiveness and quality of learning experiences as well as to quality of life. This is followed up by a discussion on funding of distance education, based on available data, in both single-mode open universities and dual-mode institutions across select national and international higher education institutions. The funding aspects are related to both pricing of distance education as well as cost and quality of distance and online learning in the next two units of the block.

In Unit 3, we discuss various aspects relating to pricing, especially determination of student fees, in distance and online learning – various cost drivers, patterns of expenditure, student fees, and cost versus price in distance and online learning. While student fees is considered as income, the expenditure, once completed, is considered as cost – both institutional and private cost. In our consideration of costing in distance education, we have not taken into account opportunity cost due to obvious difficulties involved in its consideration and calculation. In Unit 4, you will study discussions on quality dimensions of distance and online learning, cost aspects, and an analysis of cost and quality in DOL. We hope this understanding will fully equip you to appreciate a detailed discussion on cost structures, cost functions, and cost analysis in distance education, as also costing technology-enabled learning (TEL) presented in Block 3 of this course.

All the best to your engagement with the contents of this module.

UNIT 1: DISTANCE EDUCATION AND HUMAN RESOURCE DEVELOPMENT

Structure

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- 1.4 Distance Education Mechanisms and Capital Formation Needs
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- 1.8 Model Answers to Activities
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1.0 INTRODUCTION

In the preceding Block, you studied about different terms and basic concepts as they are applied in the field of 'economics of education'. This Block is an extension of the previous Block, and as such the information and understanding gained while working through Block 1 would help you especially if you are new to 'economics' as a discipline, to grapple with the issues discussed in this Block.

The first Unit of the present Block examines the contribution of distance education to the development of human resources. The Unit identifies distance education as investment in human beings, and discusses its contribution to human capital formation. This is followed by a discussion of the role of distance education in meeting the human resource needs of the economy, and improving the quality of human resources.

1.1 LEARNING OBJECTIVES

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

- describe distance education as investment;
- state and describe the indicators which point to the contribution of distance education to the formation of human capital; and
- explain how distance education meets the human resource needs of the economy.

1.2 THE CONTEXT

The Indian educational system, in common with that of many developing low income countries, has the following major problems:

- the costs of education and the expenditure on it are increasing;
- access for disadvantaged learners from rural areas is limited;
- the quality of education given is low, resulting in learners acquiring less cognitive knowledge than learners in the developed countries acquire;
- school education is characterised by high rates of dropout (the dropout rates for India from Classes I to X, in 2004, were 60.41 per cent for boys and 63.88 per cent for girls); and in 2017-18, the GER for secondary education was 79.3% and senior secondary education was 56.5% only;
- the response of the educational system in providing education relevant to the goals of the social and economic development of the country is quite low; and
- there exists a great deal of inequality of educational opportunity.

The impact of the educational system on income distribution is an adverse one because learners from wealthy families acquire a disproportionately larger share of educational opportunities. The progress in respect of education of women and education of the rural people as well as Schedule Caste and Schedule Tribe population (**Economically Weaker Section of the society**) is not as much as it should have been, despite decades of planning.

One way of tackling this situation is to reform the educational system by adopting appropriate steps within it. Distance education, as one of the major reforms, has been introduced over the last few years in the country. The *National Policy on Education, 1986*, and the *Programme of Action* adopted by the Indian Parliament had emphasised the **open learning system**. Some forms of such an open learning system already exist for schools and colleges through correspondence/distance education offered by a few Schools, the Directorates of Correspondence Courses, and the Open Universities. At present about 140 institutions (Dual mode distance teaching institutions, State Open Universities and one National Open University i.e. IGNOU and few private institutions are offering distance education at tertiary level.

For higher education in India, both the documents mentioned above envisage a nationwide distance education system consisting of:

- a national, centralised, autonomous institution of distance education as visualised in the Indira Gandhi National Open University;
- a number of state-based, autonomous type of institution, such as Dr. B.R. Ambedkar Open University of Andhra Pradesh;
- campus-based universities offering extension services for off-campus students; and

- distance education offered through directorates of correspondence courses by the conventional universities.
- Dual mode private institutions like D.Y. Patil University, Pune.

All these have the common objective of giving education to as many people as possible in different areas of the country in a cost-effective manner. Even though distance education can be provided to the entire population, to suit the different kinds and levels of interests and needs, there remains a greater pre-occupation with courses and degrees offered by the conventional on-campus system.

It is in this context that the importance of educational planning, particularly the use of distance education for human resource development, becomes important. After the 1950s, when the role of education in promoting economic growth in developing countries was highlighted, education itself was regarded as investment in human capital.

The important role of education and training, in contributing to new projects in all sectors of development, is now well recognised and fully exploited as part of development policy by international institutions such as the World Bank. For example, the *World Bank Report, 1980*, recommended greater attention to be focused upon human resources for national development. This report emphasised that the means to tackle poverty were to increase employment, meet basic needs, reduce inequalities in income and wealth, and raise the productivity of the poor. According to the above report, human resource development should be the main instrument used to achieve such goals.

1.2.1 Human resource development (HRD)

HRD is not an isolated societal activity concerning education alone! It is worth noting that “human capital accumulation” and “human resource development” have to be distinguished from each other for policy purposes. **Human capital accumulation** refers to the formation of human capital through education, and, in developing countries like India, through health and nutrition because of the impoverished nature of the population. The problems of human capital accumulation are mainly the concern of Neo-classical (or modern) Economic Theory. **Human resource development** is a term frequently used in policy documents. It includes provisions for better education, improved conditions of health and nutrition, and reduction of fertility — each of these makes its own important contribution to the quality of life, and all of them together enhance the productivity of investment in education.

Many examples of the relationship between education and other forms of social investment can be cited to emphasise the need for parallel investment in education and other social welfare measures. In general, investment in education should be parallel to other sectoral investment — new knowledge about the effects of contaminated water will be of no use if there is no alternative water supply available. Conversely tube wells may be of little use if the community knows nothing about sanitation and hygiene.

1.2.2 Distance education for human resource development

Human resource development in India is at present characterised by a good deal of imbalance of all kinds in terms of region, gender and levels of education. Even the level of literacy varies between the rural and urban areas, and between boys and girls. There are disparities in the standards of

the higher level of education as well as the level of the educational attainment of different populations. The planners could place a high emphasis on well designed instructional programmes through distance education to take care of this kind of imbalance.

The Eleventh Five Year Plan of India (2007-2012) laid special emphasis on human resource development (HRD) and it is being called Educational Plan. Some of the targets of the Plan are:

- To ensure universal secondary education by 2017, i.e. the end of the 12th Five Year Plan
- To ensure 100% enrolment and retention even up to higher secondary stage (including vocational education and other streams) by 2020
- To increase Gross Enrolment Ratio from 11% in 2006 to 15% by 2011-12 through rapid expansion of higher education system while ensuring quality and inclusion, and also restructure and re-orient higher education system to meet the requirements of a knowledge economy in a globalised world.

One of the objectives of the plan is to increase by 5% the number of students that enter graduate studies after completion of high school secondary education, i.e., an increase of seven million enrolments when compared against today's situation. The target fixed for 2012 is to have 21 million students going annually for higher education. For all these purposes, the use of Information communication technology will be emphasised and distance education will have to be adopted, using a variety of means and methods, including web and online/internet resources. In this context, distance education creates the possibility of, and has the potential to provide large scale multi-media education for the development of human resources.

Research evidences show that continuing education can improve work efficiency and productivity, and, thereby, contribute to economic growth. *Both work efficiency and productivity, besides a certain required level of education; depend upon training and orientation of human resource. These types of activities would include on-the-job training, upgrading courses, awareness courses etc., which are possible easily through distance education only (Gaba, 2007)*

1.3 EDUCATION AS INVESTMENT VIS-A-VIS DISTANCE EDUCATION

Many research studies have shown that educational expenditure is an investment, which raises the productivity of an individual and his/her earnings. There are both private and social returns for education. Since distance education is also one of the modes of providing education, one can also speak of it as an investment, and consider the size of the investment within a cost-benefit framework. Distance education includes various forms of study, which are not under the continuous and immediate supervision of teachers present with their students in the lecture rooms and it includes all the teaching methods in which teaching is conducted through print and/or mechanical or electronic devices. Organising programmes of education for all through formal systems with the help of teachers, class rooms, etc. is bound to be economically beyond the reach of any developing country. Distance education is a means by which this huge task of developing human resources can be achieved. By implication, distance education could be a better investment. It may be cheaper compared to that of conventional education, but capable of higher social and private returns.

Activity 1.1

Theoretically speaking distance education can be a more potential and viable investment as compared to conventional education. Which aspects of distance education do you think give greater potential and viability to distance education as investment in human resource development?

The background of the page features a large, light gray watermark of the University of the Pacific logo. The logo consists of a circular emblem on the left, containing a stylized 'U' and 'P' intertwined, with the words 'THE UNIVERSITY OF THE PACIFIC' written around the perimeter. To the right of the emblem, the words 'THE UNIVERSITY OF THE PACIFIC' are written in a large, bold, sans-serif font, stacked vertically.

In India, in the wake of planning for social and economic development during the last fifty years, we have seen higher growth in both human and physical (non-human) capital. Physical capital has grown at a much faster pace than human capital. It is in the context of stepping up the human capital formation for raising the productivity of physical capital that distance education assumes special importance.

In the next section, you will find some of the indicators of the contribution of distance education to capital formation. Before that, let us very briefly, look into the mechanisms of distance education and consider how it can meet the different aspects of capital formation needs.

1.4.1 The mechanisms of distance education

By now, you have fairly a comprehensive idea about distance education (as described in Course ES-311). In what follows is simply to refresh about the mechanism of DE and put it in the context of present discussion. Distance education operates through mechanisms different from those of formal education. It usually involves a combination of different kinds of media in the instructional delivery. At one extreme, radio and correspondence lessons, and other such components may teach a group of individuals, who never meet a teacher and have no occasion for physical contact among themselves within the premises of any institution; and, at the other extreme, distance education can be used to support instructional activities at schools and supplement the routine work of the classroom teachers. Whatever mechanism is adopted, distance education can be taken to mean an educational process in which a good part of teaching is conducted by some one distant in space and time from the learner.

1.4.2 Growth of human knowledge

Human knowledge grows fast, and existing knowledge becomes obsolete quickly. Under such circumstances, distance education has to cater to the requirements of those already employed. Their knowledge can be upgraded and updated through continuing education programmes. In higher education in particular, one of the objectives is to expand the frontiers of knowledge; and the task of imparting developments in new knowledge areas in the developing countries can be achieved through distance education with its multi-media mechanisms, so as to reach a larger number of clients at a relatively low cost.

1.4.3 Development of skills

The case will be very different, if the idea is to help develop the skills of the learners. One has to be careful in using distance education strategies for skill development, because there has to be greater physical participation and involvement of the target groups of the population in skill generation. Such skills are, generally, available in different kinds of industries, and they can be demonstrated to different target groups of learners through appropriate media. With the help of technological gadgets and mass media, it will be possible to update the existing skills of learners and generate new skills among them. The quality and efficiency of the educational process including skill development determine the degree of success in the job market, i.e. the kind of job acquired and the probability of finding the job.

1.4.4 Leisure utilisation and life satisfaction

Distance education could be quite useful in the utilisation of leisure time. As technologies advance, and are made widely available, people are spared from many kinds of routine work. Consequently, people get more leisure time which can be profitably and pleasurably put to use. Distance education can cater to the needs of such people who wish to fill their leisure time with pleasurable and profitable hobbies and activities. Pursuit of education through distance mode may be a rewarding experience to many such people. In many areas it may entail social and private gains as well, such as housewives taking up courses ranging from guiding pre-school children or

developing kitchen gardens, to offering counselling or advice on portfolio management in the stock market. Such educational achievements in the life of adults outside the premises of educational institutions and the gains that accompany such achievements provide great satisfaction to an individual. Further, they provide stimulation to work harder, all of which, in turn, enhance human productivity.

1.4.5 Supporting lifelong education

Lifelong education is a new concept and a new approach to the educational process, which is revolutionising the educational systems of the world. The educator's role is changing; instead of a teacher, he/she is becoming a motivator. The traditional classes are beginning to break up and are being replaced by study groups. The students learn to use all the resources of information from libraries, and computers, as well as from other electronic devices. In the changed circumstances, distance education can play a crucial role. Lifelong education has to employ new means and technologies for achieving the desired objectives; and distance education, with large scale use of mass communication media, provides vast scope to apply those technologies and achieve those objectives. Such media are now widely used in many developed and developing countries.

Faure and others, in their world education report, *Learning to Be* (1972), have envisaged lifelong education as a crucial aspect of humanity, and have observed that almost all the activities of an individual centre round and contribute to this process. Therefore, if education is not turned into a continuous process involving a variety of activities such as special courses, orientations, seminars, etc., throughout one's life, its objective of constant enrichment of life can not be retained. To enrich the process, strategies and methods like distance education and other forms of open learning would inevitably be adopted and in fact, the coming century would largely depend on this mode of educational transaction.

Activity 1.2

- Notes:** i) Space is given below for writing your answer.
ii) Compare your answer with the one given at the end of the Unit.

Briefly describe in what ways distance education contributes to the formation of human capital. Use ten lines to write your answer.

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1.5 DISTANCE EDUCATION, HUMAN RESOURCE NEEDS AND NATIONAL ECONOMY

Distance education, with the use of the right kind of educational technology and media, can be made to play a crucial role in the national economy, meeting human resources needs and thereby contributing to economic development. Dissatisfaction with the quantitative approaches to human resource forecasting (adopted in India and other developing countries) that stress formal institutional experience has now become universal. The focus of attention is being shifted to a wider dimension of human resource forecasting and utilisation in these countries, one that stresses and accommodates non-formal and non-face-to-face methods of providing educational opportunities. In the following sub-sections, let us consider how distance education meets the human resource needs of the economy of a nation.

1.5.1 Meeting human resource needs of the country

Modern economic growth is characterised by a high level of technology which is also fast changing. Therefore, it is necessary to have all the human resource trained and endowed with different skills; such human resource has to be generated by the educational system, and must be of an international standard both in quantity and quality.

Though human resource planning in India has been going on for nearly five decades, detailed human resource forecasts have not been compared to the production of the technical education system in terms of the number of persons trained in engineering, medicine and agriculture. Exercises of various kinds using relationships between different parts of economic variables have been tried for different kinds of human resource. Human resource forecasts have been made generally on the basis of more direct relationships between the stock of highly educated and technical personnel and the assessed needs of the economy, sector by sector or globally. But such exercises have not appreciably influenced educational decision-making. Detailed efforts for relating planned growth rates and different industries with detailed occupational groupings, or relating occupational structure to the educational requirements were not generally made except for the one made by the Labour Ministry in 1969; but it did not substantially influence the educational decision-making. It is, therefore, not surprising that there were substantial differences between the forecasts and actual turn out for absorption in the country.

Human resource planning should go beyond the quantitative concern of producing a certain strength or size of human resource. It should be related to a broad strategy of human resource development. It may be emphasised here that human resource needs are not related solely to the requirements of economic development. Broader aspiration for social and political modernisation, relating to national development, should also be taken note of, and the educational planning should be related to them as well.

The planning and management of distance education seriously takes into account the human resource needs of the country on the one hand, and tries to base the design and development of educational programmes according to needs of potential clients on the other hand. Besides, provisions in support of the principles of lifelong education, training and updating (both in-service

and pre-service) are made part of the continuing education programmes, and are considered as regular activities of a distance teaching institution.

1.5.2 Quality of labour force

The quality of the labour force is a very important consideration, when we look at the human resource development in a country like India. This is influenced by the development of education and training, the level of nutrition and health, and the availability of professionals and facilities like doctors, nurses, hospitals, etc. The following table shows the percentage of literates categorised on the basis of their education level.

Table 1.1: Educational composition of labour force (Urban India)

Educational Level	1972-73		1977-78		1983		1987-88		1993-94		2004-05	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Illiterate	24.8	67.4	22.1	58.2	21.7	56.5	19.6	51.8	17.9	44.5	12.8	34.4
Literate but up to primary	37.2	16.5	33.6	17.9	30.1	17.5	30.5	19.0	25.4	17.7	22.4	18.8
Middle	15.0	4.0	17.2	6.7	18.1	6.3	16.4	7.3	17.5	8.1	19.5	10.9
Secondary	16.6	8.0	18.4	10.8	19.9	11.6	21.8	12.3	24.6	15.1	15.0	7.7
Graduate and above	6.4	4.1	8.7	6.4	10.1	8.0	11.7	9.6	14.6	14.6	30.3	28.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Figures relate to usual status of individuals. Figures for the years 1972-73 and 1977-78 relate to the population age 5 years and above while figures for the years 1983, 1987-88 and 1993-94 relate to the population age 15 years and above.

Source: *Manpower Profile of India* (1998 and 2008), IAMR, New Delhi.

Table 1.2: Educational composition of labour force (Rural India)

Educational Level	1972-73		1977-78		1983		1987-88		1993-94		2004-05	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Illiterate	61.1	91.6	55.0	88.1	52.1	86.2	48.3	82.3	43.7	79.0	33.6	66.2
Literate but up to Primary	29.0	7.1	30.8	9.1	29.2	10.2	29.6	10.2	29.0	13.7	29.4	18.0
Middle	6.3	0.8	8.5	1.6	10.8	2.1	11.6	3.2	13.6	3.9	18.0	8.2
Secondary	3.1	0.4	4.7	1.0	6.4	1.2	8.4	2.0	20.9	2.7	9.2	3.7
Graduate and above	0.5	0.1	1.0	0.2	1.5	0.3	2.1	0.4	2.8	0.7	9.8	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Figures relate to usual status of individuals. Figures for the years 1972-73 and 1977-78 relate to the population age five years and above while figures for the years 1983, 1987-88 and 1993-94 relate to the population age 15 years and above.

Source: As in Table 1.1.

From Tables 1.1 and 1.2 you will find that during 2004-05, 30.3% urban male/28.2% urban female and 9.8% rural male/3.9% rural female possess degrees and diplomas. In terms of quantity, this is very low in comparison to those who complete secondary and higher secondary education. Besides looking after the quantitative expansion of tertiary and professional education in the country, one of the important tasks of distance education has been to upgrade the quality of both instruction and output at the secondary and higher stages of education. Though not an easy task, this would require adequate skills, unflinching perseverance, and sufficient time to materialise. A distinct and immediate possibility is the in-service and on-the-job training and orientation of the professionals from various sectors of the economy which the formal system of education would find difficult to provide.

1.5.3 Work efficiency and productivity

Due to the low level of education among the Indian labour force, its work efficiency and productivity is low. This is particularly true of traditional sectors like agriculture. Research evidences show that human resources development and education improve work efficiency and productivity, and, thereby, contribute to economic growth.

Both work efficiency and productivity, besides a certain required level of education, depend upon training and orientation of human resource. Such activities would include on-the-job training, upgrading courses, awareness courses, updating courses, etc., which are possible much more easily through distance education than any other means known to us today.

1.5.4 Employment opportunity

Education, given through either the on-campus or the distance mode, can raise the employment opportunities in many ways, as it helps develop the necessary skills, attitude and motivation to match opportunities – wage-employment as well as self-employment. With the large scale adoption of distance education, the role of the educational system in providing employment opportunities is bound to increase. However, this presupposes a matching between human resource needs and educational opportunities provided through this mode.

1.5.5 Minimising opportunity cost

A major obstacle in the progress of formal education particularly in rural areas and at the elementary level has been the opportunity cost due to the foregone earnings of the children who are required to work in the farms with their parents. It remains a major consideration even at the tertiary level. From this point of view, distance education has a marked advantage over on-campus education because it can minimise the opportunity cost. One can study through the distance mode while continuing in gainful employment – whether in industry, office or agriculture. This consideration is a major incentive for expanding distance education facilities at all levels of education. Expansion of distance education would reduce the cut-off point of on-campus education, thereby increasing possibilities of early employment, and of continuing with professional education subsequently while one is forming a career.

1.5.6 Contribution to equality

Distance education can provide equality of educational opportunity by creating access at both secondary and higher levels, casting aside some of the rigid entry-requirements of the conventional system with regard to age and qualifications; and requirements of a strict schedule of studies, stipulation of attendance, imposition of teacher/institution designed curriculum, etc. It can be useful, particularly for the dropout to whom instruction can be provided irrespective of age, employment status, etc. through multi-media packages. It can also be used for promoting quality in achievement among different categories of learners, and, thereby, be used for promoting equality in access and achievement.

Activity 1.3

- Notes:** i) Space is given below for writing your answer.
ii) Compare your answer with the one given at the end of the Unit.

Write down the six indicators of the contribution of distance education to human resource development. State in about six lines how distance education helps minimise opportunity cost.

1.6 DISTANCE EDUCATION AND THE QUALITY OF HUMAN RESOURCE

In India, access to education has considerably increased, though there has not been much improvement in the quality of education. That is why the Seventh Five Year Plan of India attached special importance to the quality of service in education, health and family welfare. Literacy, life expectancy, health and nutrition continue to be given special consideration, and therefore the links between education and other aspects of human resource development like health and fertility have to be specially noted. The quality of education and health has to be considered in relation to its cost; and minimising the cost for a given quality or getting the best quality for a given cost has to be aimed at.

Distance education can influence the quality of human resources in diverse ways. At present, education is being delivered through blended learning approach. There are specific reasons for offering educational programme through blended learning mode. For instance, the process of skill development in the informal sector in developing countries is more important, since formal training institutions do not have the capacity to train all those, who want to acquire skills, and a few of those, who want to acquire the skills, have the means to afford formal training. The ability to learn, to transform existing knowledge into new knowledge, is a source of competitive advantage of increasing significance. In such cases, daily learning has become an integral part of their day to day job. A part of such learning relies on the trade of tacit knowledge among employees (Gaba, 2007)

Hence, distance learning or blended learning approaches plays positive role in developing human resource in various ways. In the areas of health, nutrition and education, the open learning system can spread necessary awareness among those whom such awareness might help – the large

number of uneducated people, particularly women – and thereby improve upon the status of the population with regard to health, nutrition and education. In the process, distance education or blended learning approach will call for interaction among people belonging to different areas of operation such as teachers, technologists, learners, administrators and other functionaries. This will enhance the possibilities of interfacing education with other aspects of social life.

While considering the quality of human resources, it is essential to take note of the quality of education. The quality of education in an educational institution can be defined as:

- i) the level of material inputs allocated to an educational institution (i.e., resource concentration); and
- ii) the level of efficiency with which a fixed amount of material inputs is organised and managed to raise student achievement.

However, it is not only the material level inputs which influence any improvement in student achievement. Many researchers in education have identified three subsets, which have a significant influence on the quality of education:

- i) teacher quality;
- ii) teacher behaviour within the classroom; and
- iii) organisation of the educational institution.

These indicators, with different connotations and implications, can also be applied to teaching-learning transactions in distance education if we want to ensure the quality of its process as well as of the product(s).

1.7 LET US SUM UP

At the beginning of this Unit, we focused your attention on the different aspects of human resource development. This was followed by a consideration of the investment aspect of education where we pointed out that distance education can play a complementary role in promoting educational investment, particularly in developing countries like India, Pakistan and Bangladesh, where there is a great deal of educational backwardness.

Reference was made to the inadequacy of our efforts for human resource development, particularly in relation to physical capital formation. Having established the need for higher educational investment and pointed to the possibilities offered by distance education for this purpose, the many ways in which distance education can contribute to human and non-human capital formation were elaborated. In particular, the role of distance education in meeting the needs of human resource in the Indian economy has received special attention, both because of the not-so-comprehensive interpretation given to human resource and its development, and because of the importance given to human resource in the theory of economic growth. Human resource requirements for an economy like that of India has to be considered in a much wider sense to include not only skills but also attitudes and motivations; and human resource forecasting and development have to be thought of in much wider terms. In carrying out the task of human resource planning, distance education can play a prominent role; in making education more relevant and widespread to all sections of the population. It overcomes the present obstacles, which the conventional (on-campus) system is facing, and in equalising educational opportunities for different types of learner groups.

Since it is necessary to consider the question of the quality of human resource, the quality aspects of human resource development were also considered in the last section of the Unit. While the quality of health is quite easy to define, we are not equally clear about education in this regard. It can be looked at from many points of view, and it will change with the changing needs of the economy. In any case, the cost dimension will have to be taken into account. Efforts have to be made to optimise the relationship between cost and quality. For a given cost, the quality needs to be maximised, and for a given quality, the cost needs to be minimised.

1.8 MODEL ANSWERS TO ACTIVITIES

Activity 1.1

There are a few pointers that suggest that distance education is a viable investment in human capital. First, “distance education” is another mode of “education” and therefore, like the latter, should be considered a worthwhile expenditure. Second, distance education justifies the larger possibility of purposeful investment in that it provides access and quality on the one hand, and the large scale use of multi-media for frequent communication, and effective self-instruction and self-learning, on the other.

Activity 1.2

Distance education provides mechanisms for imparting knowledge and for self-learning, which are essential for the growth of human capital. For the effective formation and development of human resources, the growth of knowledge, understanding, skills and attitude is a pre-requisite, which is facilitated by the mechanisms of learning at-a-distance. Besides, utilisation of leisure for fruitful individual development, deriving satisfaction from a sense of achievement, etc., is also made possible through distance education. Distance education also helps the process of lifelong learning and thereby the continuous development of individuals throughout their lives.

Activity 1.3

The six indicators are: human resource needs, quality of labour force, work efficiency and productivity, employment opportunity, opportunity cost, and equality. In the system of distance education, one can study even while on a job, whether in the field, in office or in industry. Hence, one does not have to forego one’s earning while continuing with one’s education.

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UNIT 2 FUNDING OF DISTANCE EDUCATION

Structure

- 2.0 Introduction
- 2.1 Learning Objectives
- 2.2 Funding of Higher Education
- 2.3 British Higher Education and Funding of UKOU
- 2.4 Funding of Higher Education and the Open University of Hong Kong
- 2.5 Funding of Sukhothai Thammathirat Open University
- 2.6 Funding of Universitas Terbuka, Indonesia
- 2.7 Funding Pattern of Open University of Sri Lanka
- 2.8 Funding Policies of Conventional and Open Universities in India
- 2.9 Other Distance Teaching Institutions (DTIs) in India
- 2.10 Analyzing Funding Policies
- 2.11 Let Us Sum Up
- 2.12 Model Answers to Activities

2.0 INTRODUCTION

In the last unit of this Block, you got to know in detail the various aspects of the constitution of distance education to human resource development (which can be related to any country). Resources being crucial to all educational activities, examination of funding sources and policies thereof assume considerable importance. In the present unit, we shall describe funding of higher education (vis-a-vis state policy) internationally, and analyse funding of open universities in developed countries (UK, Hong Kong) and developing countries (Thailand, Indonesia, Sri Lanka), with though greater focus on India. At the end of the Unit, we shall examine the issue of funding of open universities from a global perspective.

2.1 LEARNING OBJECTIVES

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

- describe state policy and funding of higher education internationally;
- analyze funding of selected open universities in developed and developing countries; and
- examine the issue of funding distance higher education generally.

2.2 FUNDING OF HIGHER EDUCATION

Let's look into the funding pattern of higher education generally in the international context, which shall provide a background to our discussion on funding of selected open universities given in the subsequent sections.

Analysis of three aspects — gross enrolment ratio, student fees, and pattern of funding — shall broadly indicate the status of state policy and funding of higher education. The *gross enrolment ratios* (GERs) of a few selected

countries are given in Table 2.1 which indicate that while there is 98.8% enrolment in the relevant age group in higher education in Canada, 76.2%, in USA, 27.8% in UK and 19.6% in Hong Kong, Thailand had 19%, Indonesia 10.1%, India 6% and Sri Lanka 5.5% enrolment in higher education.

Table 2.1: Gross enrolment ratio in higher education

Country	Year	Gross enrolment ratio
Developed Countries		
Canada	1992	98.8
USA	1991	76.2
New Zealand	1992	49.7
Australia	1992	39.6
Germany	1990	37.6
Japan	1991	31.5
U.K.	1990	27.8
Hong Kong	1992	19.6
Developing Countries		
<i>Asia</i>		
Philippines	1991	27.8
Thailand	1992	19.0
Indonesia	1992	10.1
India	1989	6.0
Sri Lanka	1991	5.5
China	1991	1.6
<i>Africa</i>		
Botswana	1992	5.2
Nigeria	1989	3.7
<i>Latin America</i>		
Mexico	1992	14.0
Brazil	1991	11.7

Source: UNESCO, *Statistical Yearbook*, 1994, Paris.

In India, only 6% of the age group of 18-23 years is in higher education, and this comprises about six million students, including those studying at a distance. This compares very low with the 51% of the OECD countries, and 21% of the middle-income group countries.

When we compare the fees charged from students (Table 2.2) as percentage of unit operating expenditure, we find that countries like Chile, Jamaica, Indonesia, and USA charge high fees, while France charges 1% of total expenditure, and Brazil, Venezuela and Bangladesh do not charge any fees for meeting operating expenditure of higher education. There is considerable variance in the perception of tuition fees to be charged to students. Further, there are provisions of higher amounts for student loans and student scholarships in countries like U.K. to facilitate higher education of the meritorious as well as disadvantaged students. Countries like Germany and France do not charge any fees from those who deserve education, and even for USA it is as low as 15%. Increase in student fees has caused strong protests from students in almost all countries of the world. Therefore, universities are thinking of generating revenue from sources other than student fees. In this context, distance education with its low operating unit cost is in an advantageous position in comparison to campus-based education.

Table 2.2: Higher education fees as a percentage of unit operating expenditure in selected countries

Fee as percent of operating Country	Year	Expenditure per unit
Central and South Africa		
Brazil	1991	No fees
Chile	1991	26
Jamaica	1991	25
Mexico	1991	No fees
Venezuela	1991	No fees
Asia		
Bangladesh	Mid 80s	No fees
China	1991	9
India	Mid 80s	5
Indonesia	1989	25
Sri Lanka	Mid 80s	3
Thailand	Mid 80s	5
Industrial Countries		
France	1990	1
Japan	1991	9
U.K.	1990	No fees
USA	1985	15

Source: Ziderman and Albrecht, *Financing Universities in Developing Countries*, London, Falmer, 1995.

The funding pattern of higher education varies considerably across countries and institutions. As a whole, governments provide maximum support to higher education in most countries of the world. In Denmark, Netherlands, Canada, India, and USA, the government provides funding support to the tune of 99%, 98%, 90%, 89%, and 78% respectively. These World Bank data further suggest that, in countries like Australia, Norway, France, Germany, Indonesia, Kenya, and U.K., government finance for higher education was 88%, 90%, 89.5%, 68.5%, 62.8%, 62.2%, and 55% respectively (World Bank, 1995). Due to transition of higher education from an elite system to a mass system during the last few decades, the governments are finding it difficult to support further expansion of higher education; and offer of higher education to large masses has led to the proposal of cost recovery, especially from students. Some of the countries, however, have increased percent GDP expenditure for higher education to meet the growing demand.

With this background, let's now look into the policies and patterns of funding of open universities in some selected developed and developing countries. Before that, you may like to work out the following question.

Activity 2.1

- Notes:** i) Space is given below for writing your answer.
ii) Compare your answer with the one given at the end of the unit.

Describe in 10-12 lines, how GER, fees and pattern of funding affect expenditure on higher education.

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2.3 BRITISH HIGHER EDUCATION AND FUNDING OF UKOU

The higher education system in the UK, encompassing two kinds of universities — one, comprising the ancient universities, federal and civic universities including the modern universities, and the other comprising the polytechnics, Scottish central universities and colleges of higher education — were funded by the University Grants Committee (UGC), and from 1993 by the Higher Education Funding Council (HEFC). Before 1919, when they started getting public support through the UGC, universities were largely funded by private sources. The Universities Funding Council supported higher education after 1988, and the polytechnics and colleges (funded earlier by Local Education Authorities) received funds from the central government through the Polytechnics and Colleges Funding Council. Since April, 1993 Higher Education Funding Councils for England, Wales and Scotland separately took over the responsibility of funding higher and further education.

The funding of UKOU has been different from the usual funding for higher education in the UK. It was funded directly by the government through the Department of Education and Science (now the Department of Education), based on the statement of its own requirements made by the university. Since the early 1980s, a committee of independent persons has been providing advice to the Secretary of State for Education regarding funding requirements of the OU. The HEFC of England is empowered to fund teaching, basic infrastructure and non-project elements of research, while the HEFCs of Wales and Scotland fund important schemes locally. Over 90% of its grants were for teaching funds. The policy of funding of the OU has led the university to operate alongside and in competition with other providers of higher education in the country.

The HEFC specified a core-plus-margin approach to funding of teaching, i.e. institutions have to admit a certain number of students for the stipulated level of grant in eleven academic subject categories (ASC). Within each subject, there are separate funding procedures for full-time and part-time students. Thus, an institution can get funds for 22 types, i.e. 11 subject areas separately for part-time and full-time students (modes). For any year's funding, the Council uplifts the grant by certain percentage for inflation, and then does a baseline adjustment for each ASC and mode on the basis of their Average Unit of Council Funding (AUCF). AUCF is obtained by dividing the grant for teaching by the total student enrolment. Student numbers for each ASC and mode have to be maintained for each year, and sometimes institutions out admit in some ASCs or modes to offset under-enrolment in other ASCs or mode. Further, institutions have to maintain a certain degree of quality in teaching, negligence of which will reduce the grant and also there may be withdrawal of funded students from those ASCs. Besides teaching, the HEFC also gives grants for specific purposes, like increasing access, use of new technology, and the like.

The core-plus-margin approach of HEFC has been beneficial for the OU since it ensures stable grant for eleven subject areas. However, funding based on student enrolment has disadvantage for the OU for subject areas with large (part-time) student enrolment. Areas like science, engineering and

technology, SPAM, and education have higher public funding index, and the OU charges very low fees in comparison to full-time students of conventional universities. It has been found that student places at OU have received lower public funding in comparison to full-time equivalent student places in other universities. Further, in comparison to campus-based universities, the range of public funding varies widely in the OU, though the cost of teaching, say for example science subjects, has been almost equal to conventional higher education institutions. Therefore, it calls for a new funding policy for the OU which could be favourable to distance education.

2.4 FUNDING OF HIGHER EDUCATION AND THE OPEN UNIVERSITY OF HONG KONG (OUHK)

Higher education in Hong Kong is comprised of colleges of teacher education, technical institutes (run by the Vocational Training Council), and public and private funded universities (about 30% of institutions are private funded). About 80% of the relevant age group aspire to go in for higher education which the institutions are unable to cater for this large number. The establishment of the Open Learning Institute (OLI) in 1989 (now, the Open University of Hong Kong) was meant to increase access to higher education.

Government spending on education is high, and in 1993-94 more than 16% of total government spending was on education; and of the total expenditure on education, about one-third goes for higher education. The Universities and Polytechnics Grants Committee (UPGC) provides grants to all higher education institutions, though the OUHK does not come under its purview. UPGC provides recurrent grants, capital grants and research grants to institutions. Since the government does not take much responsibility for adult higher education, the role of OLI/OUHK assumes considerable importance. The OLI was to become a self-supporting institution within four years of its existence; and from 1993-94, as per the mandate, there was no government subsidy, and the total revenue and the total recurrent expenditure were almost equal (and, later even revenue was higher than expenditure).

The complete professional approach adopted by OUHK has made this possible. Its academic decisions are sound business decisions. Very high quality course materials are purchased from overseas distance teaching institutions, with local adaptations. There is a small core of academic and administrative staff, with double the size of part-time tutors to provide student support. There has been investment in information technology to support management decision-making and offset the staffing costs. Strict quality assurance protocols have been developed and applied to maintain high quality in processes and products. The university has received awards for the quality of its courses from the Hong Kong Council for Academic Accreditation, and has credit transfer agreements with UKOU, erstwhile OLA of British Columbia, and Deakin University of Australia.

While the tuition fee income (\$11.6 million) was a little less than double that of other income (and there was high government subsidy) in 1989-90, the fee income (\$131 million) was thirteen times higher than other income in 1992-93 and government subsidy was negligible. Students pay about 86% of the cost of their education, which is quite high. It is argued that the cost of education should be shared jointly by the government, the students and the employers, as is the case in higher education in many countries of the world.

2.5 FUNDING OF SUKHOTHAI THAMMATHIRAT OPEN UNIVESITY

From among the developing countries, we have case studies available from Thailand, Indonesia, Sri Lanka and India, and these are discussed as follows. For India, the presentation has been made separately for open universities and distance teaching institutions (DTIs) of conventional universities.

STOU is the first open university in South East Asia; and as a government institution, its main source of income is government. In 1993, STOU was among the 19 institutions to have received direct government funding. Government subsidy is increasing, and from 84 million Baht in 1989, the university received 179 million in 1993. It has been found that STOU's grant is just 1% of the total budget of Ministry of University Affairs, while a university like Kasetsart gets about 7%. The grant of the Thai government to its open university is the lowest of all universities in the country. In 1993, the ratio between government allocation and STOU's self-financing for salaries and wages was 69:31, which is not in favour of the open university in comparison to the conventional face-to-face education. The government has not provided any assistance for purchase of media air-time, printing supplies and fees for course writers/proctors/tutors.

For a two-year degree programme, a student pays 5590 baht (US\$ 220), and in 1993, the university had 179,438 students enrolled for just one year. In the same year, the university earned about 371 million baht from student fees; and out of a total expenses of above 766 million baht, the government support was to the tune of only about 180 million baht (23.5%). Therefore, the university is hard pressed to pay for its expanding activities and expenses.

The supplementary revenue (to the tune of about 43 million in 1993) was earned from seminar centre rental, sale of educational materials, training programmes, printing production, computer services, video production, seminars and STOU journal. Various other agencies, including governments of other countries, have provided donations to STOU. These include Japanese government, Hosono Bunka Foundation of Japan, and the Government of the Republic of Germany. Many government institutions and agencies in Thailand provide invisible funding in the form of their contribution of facilities and human resources for examination, teaching, book repository, and the like. Though the university is receiving very low government subsidy, outside donations and facilities for media, tutorials, examinations, etc. have made it possible for STOU to manage successfully its increasing number of students and expanding activities.

2.6 FUNDING OF UNIVERSITAS TERBUKA, INDONESIA

Indonesia is a developing country in South East Asia, and the recent devaluation of its currency has adversely affected the Indonesian economy and the stock market in many parts of the globe. It has only one open learning university – Universitas Terbuka (UT) – which caters to higher education needs of about 170 thousand students each year. The method of government funding is the same for all universities including the UT, except that the amount of funds allocated varies from institution to institution. While fees received from students varies from 10-20% in campus-based universities, in 1991-92 student fees and sale of instructional materials

accounted for 44% of UT's total revenue. Income from students and materials is increasing every year.

Universities receive three types of government grant: routine, development and OMF (operation, maintenance and facilities). While UT expenditures are lower than its counterparts, the routine grants are 2-5% higher, development grants are 3-20% higher and OMF grants are 2-4% higher than those of campus-based universities (CBUs). Staff salaries, research and teaching operations account for highest budget allocations in CBUs while these operations are at a low volume at the UT. Therefore, the UT is in an advantageous position to be more self-sufficient than its counterparts. The unit cost of UT is less than 3% of CBUs. On the other hand, the government allocates about 0.8%, 1.3% and 0.6% of its higher education budget for routine, development and OMF activities respectively of UT. These comprise of about 2-5%, 1-7% and 2% respectively for CBUs. The UT earns about 56% of its income, while the government grant was about 34% in 1993-94 (17% routine, 10% development, and 7% OMF). The university also gets grant from other agencies within the country for research, and services like development of materials, conduct of examinations and training activities. International grants are mainly from Canadian International Development Agency (CIDA) for staff development, technical assistance and research. The allocation of funds within the university is as follows: about 70% for operational activities (including capital and recurrent costs for physical facilities, equipment, buildings, salaries, etc.), 21-27% for teaching-related activities (like programme design and development, radio and TV programmes, tutorials and other academic services), and 2% for research, community services and other student support services.

Since government financing policy is not going to change in the near future, UT has to maintain (and even increase) its earning from students and other sources to maintain its level of activities with sufficient quality. Student enrolment may increase in the future, thereby bringing more revenue, but there is already a saturation in social and political science programmes. The university heavily depends on print medium (96%); and audio (2%), television (0.5%) and radio (0.5%) comprise a minor chunk of instructional delivery. Non-print media have to be expanded so as to be able to provide programmes involving technical-practical elements. The university does not have a large network of regional centres. Further decentralization through these mechanisms, as proposed, may cost more which it has to meet either from student fees or from other grants and donations.

For UT, though the government grant is substantial, it is not proportionate to the increase in student enrolment. However, since the unit cost of the university is much low, it has greater cost advantage in comparison to the CBUs. Student tuition fees are largely utilised for meeting operational expenses, and the government grant is mainly meant for capital investment. Same budgeting formula is applied for allocating resources to all kinds of universities, including UT, by the government. The university could benefit more if the government grant was based on the major activities, cost centers of the university and the number of students enrolled.

Activity 2.2

- Note:** i) Write your answer in the space given below.
ii) Compare your answer with the one given at the end of the Unit.

What major issues can you derive from the comparison of cases of funding of UKOU, OUHK, STOU and UT?

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2.7 FUNDING PATTERN OF OPEN UNIVERSITY OF SRI LANKA (OUSL)

The government of Sri Lanka fully funds the eight national conventional universities, while the OUSL (a national university) is partly funded by the government. Only 3.41% of the GNP is spent on education, and expenditure on higher education is 14.22% of all educational expenditure (and 0.37% of the GNP). The government grant to OUSL has increased over the years — from 33% in 1982 to 56% in 1992. Since 1981, there has been considerable assistance from international donors for staff development, equipment, temporary staff salary, and consultancies. The UGC fund was available for meeting recurring expenditure other than the salary of permanent staff. The Government grant is based on the number of full-time equivalent (FTE) students of the OUSL (equivalent to conventional universities). Since 1992, foundation and certificate level students have been considered as one-fourth equivalent of full-time conventional university students, diploma and degree level students as fully equal, and postgraduate students as half of FTE.

The university is expected to generate about one-third of its expenses from student fees, though it is difficult to enhance the fee structure, keeping in view the economic difficulties faced by a large number of students. There is extra caution since survey data show that nearly 45% of drop-outs do so because of the burden of course fees. To reduce the burden on students, the UGC had to reconsider the formula for FTE for allocation of funds. It has been suggested that foundation, certificate, and science engineering (including postgraduate) level should be cost at half, one-fourth and three-fourth respectively of the cost of FTE of conventional universities. Further, administrative costs should be separately calculated and funded at par with those of conventional universities.

2.8 FUNDING POLICIES OF CONVENTIONAL AND OPEN UNIVERSITIES IN INDIA

Education is in the concurrent list in India, and, therefore, the Central and State governments share expenditure on education. In 1995-96, the budgeted expenditure for all sectors of education was 361,756 million, out of which about one-fourth was plan expenditure. For plan and non-plan expenditure, the share of the Central government is 36.27% and 5.19% respectively. This may be compared with plan and non-plan expenditure, and share of Central and State governments for higher education for 1995-96 (Table 2.3).

**Table 2.3: Plan and non-plan expenditure on higher education (1995-96):
share of central and state governments**

Agency	Expenditure million rupees)	Percentage of sub total	As percent of total expenditure
Plan			
States	2,306.2	48.49	6.32
Centre	2,450.5	51.51	6.72
Sub-Total	4,756.7	100.00	13.04
Non-Plan			
States	28,090.2	88.54	76.99
Centre	3,639.1	11.46	9.97
Sub-Total	31,729.3	100.00	86.96
Plan+Non-Plan			
States	30,396.4	83.31	83.31
Centre	6,089.6	16.69	16.69
Total	36,486.0	100.00	100.00

Source: Govt. of India, *Analysis of Budgeted Expenditure on Education 1993-94 to 1995-96*, New Delhi, 1997.

For higher education, while the central government shares 51.51% of plan expenditure, its share is only 11.46% for non-plan expenditure. Over the last three years, the share of non-plan expenditure by the central government has been marginally reduced. In comparison to the total educational expenditure, the share of higher education (plan) is about 6%, and non-plan (HE) is about 11.5%, while both taken together it is about 10%. Comparison between 1994-95 and 1995-96 suggests that plan expenditure was reduced by 4.66% and non-plan expenditure by 4.11% (Powar, 1998).

The Kothari Education Commission in 1968 had recommended for spending 6% of GNP on education, though it continues to stagger at 3.4%.

For Central Universities, the entire development and maintenance expenditure is met by the Central Government. For maintenance, the government provides grants minus the income received from other sources. For the State Universities, the maintenance expenditure is met by the concerned State governments, and in some cases the universities are running with huge deficits. For development expenditure, both the UGC* and State Governments share the cost, on the basis of Five Years Plan agreement and norms formulated thereof. Some of the institutions deemed to be universities get full central assistance, while some others get both Central and State Government support. A few of these meet all expenditure on their own without any government support. For all sectors of education put together in 1990-91, the Central and State Governments shared 87.6%, local governments 3.0%, and fees 9.2% of educational expenditure.

Distance higher education was started in 1962 in the conventional university sector. We shall discuss funding of these distance education institutes (DEIs) of conventional universities in section 2.9. In what follows is an analysis of the funding of open universities in India. Though there are ten open universities in the country (including IGNOU), full-fledged cost data are available for only a few universities, and, therefore, the following analysis is based on the available data.

IGNOU was established by an Act of Parliament as a Central University directly responsible to the Parliament, with dual responsibility of offering distance education programmes, and coordinating and maintaining standards of all distance higher education institutions in the country. Therefore, the university gets grants directly from the Central Government, rather than channelling it through the UGC (as is the case for all other

Central Universities). In 1985-86, the university received all the expenditure (i.e. 29.29 million rupees) from the Central Government. In 1986-87, the government grant was 97.54% and contribution of student fees was 2.41% which gradually got changed to 70.39% and 26.37% respectively in 1991-92. As of 1998, the university meets about 40% of its expenses from student fees and other sources. This increased contribution of student fees was not due to higher student fees, but because of an increase in student enrolment (especially in professional programmes) which (cumulatively) stands at about 600 thousand in 2000. The plan grant from the Central Government stands at about 40%.

Grants from other sources and income from projects, consultancies, training programmes, and sale/adaptation of instructional materials within and outside the country are gradually increasing. By mandate, the university also provides developmental grant to functional state open universities through its Distance Education Council. By 2000, there were 62 university (Distance Teaching Institutions) DTIs, some of which have been funded by IGNOU-DEC since 1999-2000. While the Central Government's contribution to IGNOU for capital expenditure, infrastructural facilities, funding of state open universities and university DTIs, and for media and other networking would continue (and so also the contribution of state governments through facilities of space at state capitals or so for IGNOU regional centres), the university strives towards meeting a large part of recurring/operational expenditure on its own. There has been a differential fee system in operation, i.e. earning from professional programmes (with higher fees) and supporting non-professional programmes (with lower fees), and expansion of student support services. The university also plans to provide scholarships and freeships to the meritorious students and students belonging to disadvantaged groups, thereby giving priority to the disadvantaged sections of the society.

The State Open Universities in India generate resources from four sources:

- State government grants;
- Central government grants (through UGC/IGNOU);
- Grants from private sources; and
- Student fees.

Some of the open universities also receive developmental grants from the IGNOU-DEC. Dr. B.R. Ambedkar Open University (BRAOU) which got only state grants in 1982-83 (without any internally generated funds), got Rs.23.90 million from State grant and generated Rs.30.80 million internally in 1992-93. The university generates about four-fifth of its income from student fees and the state government grant has got reduced to 22%. The university spends above 20% more on students than what it gets from them; and had to face several years gap in getting Central grant (when UGC withdrew and IGNOU had not stepped in for funding). The IGNOU, like erstwhile funding by UGC, has stipulated certain conditions to be met by the state open universities for being eligible to receive the IGNOU grant.

The Yashwantrao Chavan Maharashtra Open University (YCMOU) receives state subsidy in the form of block grants every year, which were to be reviewed after three years. Block grants are given for meeting development costs, and the university is expected to meet all operational costs. Besides, the State Government had granted money for site development and construction work on the campus. In 1991-92, while the operating expenditure was Rs.13.24 million, developmental expenditure was only Rs.3.17 million. Now, the university meets its recurring expenditure on its own.

2.9 OTHER DISTANCE TEACHING INSTITUTIONS (DTIs) IN INDIA

There are 62 university DTIs in India, some with an annual student intake of more than 100 thousand and some others with as low as 500 (and, therefore, non-viable). Earlier, these institutions were getting developmental grants from the UGC, a task which IGNOU-DEC has undertaken to do from 1999. The DTIs function within and under the control of the mainstream university in which they are located; and, therefore, have little freedom in financial decision-making of their own. They show considerable variance in student fees as a source of income. While the DTI of Madurai Kamraj University gets a public subsidy up to about 52% (student fees being 48%), SNDT Women's University generates 92% from student fees, and universities like Sri Venkateswara and Kerala meet all their expenses from the contribution made by students (Pillai and Naidu, 1998).

On the basis of a nation-wide study, Datt (1991) reported that there are two kinds of DTIs — those generating surplus, and those incurring deficit. His analysis shows that DTIs of universities of Annamalai, Allahabad, Madras, Patna, and SNDT Women's are surplus generating institutions; and their surplus money is being utilised for either augmenting the resources of the parent university or creating infrastructure for distance education students. The sources of funding for selected DTIs are given in Table 2.4. While student teacher ratio was 3366:1 in Madras, it was 63:1 in Panjab University. Obviously, the salary cost was 15.7% and other costs 84.3% at Madras University; and the salary and non-salary costs were 76.3% and 23.7% respectively at Panjab University. Further, while the total cost per student was Rs.171.89 at Annamalai University, it was as high as Rs. 1832.60 at Panjab University.

Table 2.4: Sources of funding in selected DTIs
(Rs. at current prices)

Institute	Year	Cost per student	Fee income per student	Surplus per student	State subsidy per student
SCC & CE, Delhi University	1988-89	584	320 (100)	- (54.8)	264 (45.2)
DCC, Panjab University	1988-89	1832 (100)	601 (32.8)	-	1231 (67.2)
DCC, HPU	1988-89 (100)	620 (65.2)	404	- (34.8)	216
ICE, Madras University	1988-89 (100)	473 (167.9)	794 (67.9)	321	-
DCC, Patna University	1988-89 (100)	368 (121.4)	447 (21.4)	79	-
SNDT W. University	1988-89 (100)	242 (140.8)	341 (40.8)	99	-
ICC & CE, Allahabad University	1988-89 (100)	495 (88)	435 (12)	60	-
DCC, Annamalai University	1985-86 (100)	132 (447)	590 (347)	458	-

Note: Figures in parentheses are in percentages.

Source: Datt (1991)

The surpluses generated by DTIs are largely due to skeleton academic and non-academic staff. Most DTIs spend little on student support services, library facilities, and audio-video programmes. Similarly, expenditure on design, development and production of printed course lessons is also very low. Datt (1991) points out that some DTIs which are generating huge income on their own are deliberately depressing costs so as to generate

surpluses. The DTIs which incur deficits (like Delhi, Panjab, HPU) are subsidised either by the Centre (UGC) or the concerned State Government. The deficit was largely due to higher teacher-student ratio and higher non-academic staff ratio. In the Delhi University, the fee income per student was as low as Rs.320, though the unit cost was Rs.584. Though the unit cost was as high as Rs.1,832 at Panjab University, this was largely due to the low level of enrolment (and large number of postgraduate students in total enrolment) and higher teacher-student ratio (of 63:1). This pushed per unit fee income of Rs.601 to be spent at Rs.1,832 per student (with additional state subsidy). Further, the non-teaching staff-student ratio was 1:297 in case of Madras University and 1:35 in the case of Panjab University. The SCC&CE of Delhi University falls in between these two extremes where the student-teacher ratio was 360:1 and the student-non-teaching staff ratio was 139:1. The results of coefficient of correlation suggest strong negative relationship between enrolment and cost per student in case of Bombay, Patna, Delhi, Madras and Panjab Universities.

Datt (1991) concluded that:

- the DTIs which are facing deficit should be helped out;
- core teaching/supporting/non-teaching staff should be provided to deficit DTIs;
- there should be judicious blend of UG and PG courses (postgraduate courses cost more, hence large UG enrolment may reduce such high cost);
- state support to distance education should increase (since it is quite high for campus-based institutions); and
- since a campus-based student costs 6.5 times more than a distance student, and since quality of DTIs has to be improved, more attention should be given to the funding policy of DTIs (along with that of the open universities).

You may like to take a pause, and think about the issues and concerns arising out of the case studies you just studied. You may also like to consider what needs to be done to overcome the problems arising out of the existing pattern of funding distance education. A separate sheet of paper or the margin of this page may be used by you to jot down the points arising in your mind right now. Check those with the analysis presented in the following section.

2.10 ANALYSING FUNDING POLICIES

It has been widely recognised that distance education is different from the CBUs with regard to the process of planning, development, production and delivery of educational programmes and the very nature of this difference calls for a different funding formula or mechanism for distance education. The case studies show that most of the DTIs or OUs are funded differently from their conventional counterparts, exceptions being the UKOU or IGNOU. But the difference on the basis of either FTE students or separate funding (like IGNOU which is also mandated to provide funds to other OUs and DTIs in India) has not been favourable to distance education. The basis of funding could be unit cost of (distance) education, which may be decided on the basis of actual expenditure on various cost heads. In some cases, like the DTIs in India, the actual expenditure is limited by non-availability of funds which adversely affects the quality of instruction. Therefore, there is a need to calculate both *actual costs* and *optimum costs* to arrive at funding decisions accordingly. And, this suggests that DTIs should stop comparing

with CBUs while suggesting funding to governments and other funding agencies.

There is a reduction in government funding for higher education in many countries, and this has adversely affected distance education too. Like CBUs, DTIs have also resorted to increasing cost recovery from students (in the form of student fees): 60% in case of Universidad Nacional de Educación a Distancia in Spain, 66% for Universitas Terbuka in Indonesia, 76% for Anadolu University in Turkey, and more than 90% for OUHK in Hong Kong. On the other hand, in some of the open universities, governments have taken larger responsibility for meeting both capital and recurring costs. At the CRTVU of China, students contribute about 5% of the total cost in the form of fees, and a large contribution comes from industries, companies and public services. On the other hand, in universities like UKOU and IGNOU, though in real terms the contribution by the government has increased over the years, in percentage terms there has been a decline in its contribution and an increase in student fees.

The funding policies of governments for distance education are largely determined by the stages of growth and development of concerned institutions, institutional policy on state support for certain categories of target population, and the overall philosophy of the state on educational subsidies (especially higher education). There is a common perception that distance education is relatively much cheaper than campus-based education. However, it may be noted by all concerned (including the government) that there is a limit to lowering the unit cost of education (distance education) if quality is to be maintained. Distance education offered through university DTIs in India is one of the best examples of this phenomenon, where, besides other things, quality of education is wanting due to the lack of financial resources.

The common belief that (part-time) learners of DTIs and OUs are comparatively older and that they are usually wage earners (while continuing their studies) does not hold good for these institutions globally. In many institutions, a large percentage of students are younger and unemployed. Therefore, either there should be higher state subsidy for those students who are not self-supporting or that the government increases the subsidy generally for distance education keeping in view that this system aims largely at taking care of the educational needs of the disadvantaged and the deprived.

There is a need to evolve a funding mechanism for open universities and DTIs as a distinct form of tertiary education. There does not exist a comprehensive model or framework common to all or many OUs within which costs can be analysed and funding can be requested. This calls for comprehensive studies and data base on the social and economic contributions of open universities, especially with regard to those educated people who come for continuing education and on whom society has already contributed to their initial education.

2.11 LET US SUM UP

In this unit, we discussed about the pattern of enrolment, student fees and funding of higher education globally, based on selected available data. You have seen that even countries where gross enrolment ratio is very high usually charge very low fees from students, and campus-based higher education is highly subsidized. In many institutions, there has been in place a rigorous methodology for ascertaining both the need for funds and their utilisation. During last few decades, universities in many countries are being

advised to generate large proportion of resources from other sources, and, therefore, have resorted to the mechanism of cost recovery from students.

In the case of distance education, not only the unit cost of education is low, but also student fee has been a major source of income for institutions. The one-plus-margin approach has been beneficial for the UKOU though funding based on student enrolment has been disadvantageous. In Hong Kong, the OUHK was expected to meet the entire recurring expenditure on its own within four years of its existence, and this has resulted in escalation of student fees. For STOU, though the government grant is less than one per cent of the total government budget for higher education, which stands at an impressive 69% although it is unfavourable for the open university.

Though the method of government funding is the same for all the universities including UT in Indonesia, the unit cost of UT is less than 3% that of campus-based universities. The open university earns about 56% of its income and the government grant is only 34%. This has restricted the university's proposal for diversification and decentralisation. In Sri Lanka, the government grant to OUSL has increased to 56%, though there is a need to reconsider the formula for full-time equivalent (FTE) students, and government support to OUSL should be increased.

In the case of India, the government provides funding support to the tune of about 90% to mainstream conventional higher education, while in the case of open universities it is much lower: for example, about 60% for IGNOU and 22% for BRAOU. In case of university DTIs, the situation is much worse: most of them run with deficit, and only few have been able to generate surplus (which is used by the mainstream parent university for expanding campus-based education). Government funding has not been uniform, though unit cost for distance education is about one-sixth that of campus-based education.

On account of lack of any model or framework of funding of distance education, there is a need to evolve a funding mechanism for open universities and other DTIs as a distinct form of tertiary education. This is possible once this emerging system generates comprehensive studies and data based on the social and economic contribution of distance education/open learning.

* Since UGC (University Grants Commission) gets all the funds from the Central Government, the UGC grants, though routed through separately, are in effect Central Government funds.

2.12 MODEL ANSWERS TO ACTIVITIES

Activity 2.1

When the GER increases, which indicates increasing number of students coming for higher education, the total expenditure increases. This puts a pressure on the funding agencies and the students. If the government or the concerned institution resorts to cost recovery from students, the pattern of funding undergoes changes in favour of the funding agencies. Further, if the government is to contribute larger part of funding (which is not always forthcoming) the pattern of expenditure would be different than if the students have to share the larger portion of institutional expenditure.

Activity 2.2

The first issue is whether the major part of educational expenditure shall be borne by the government or the student. The second issue concerns the uniformity of funding both CBU's and distance education by governments (which is not the case right now). The third is with regard to the funding approach of the government and conversion procedure of full-time equivalent (FTE) students.

UNIT 3 PRICING IN DISTANCE EDUCATION

Structure

- 3.1 Introduction
- 3.2 Learning Objectives
- 3.3 Cost Drivers
- 3.4 Pattern of Expenditure
- 3.5 Varying Student Fees
- 3.6 WECT: A Case
- 3.7 Costs versus Price
- 3.8 Let Us Sum Up
- 3.9 Model Answers to Activities
- 3.10 Suggested Readings

3.1 INTRODUCTION

The preceding two units of this Block have been devoted to discussions on how DE contributes to development of human resources, and the different mechanisms of funding single-mode open universities and dual-mode DE programmes. Based on this background, we proceed to discuss the aspect of pricing and/or student fees in this Unit. We shall discuss various cost drivers for DE and online learning, as also how do DE institutions decide their operating costs (through an institutional example of IGNOU). A recent survey in the United States by WECT has been briefly underlined; and costing versus pricing has also been discussed. In the next Unit, we shall go a step further to discuss cost and quality in DE.

3.2 LEARNING OBJECTIVES

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

- describe the cost drivers and expenditure heads (i.e. operating costs) for distance education and online learning;
- compare student fees with unit costs across single-mode and dual-mode institutions; and
- describe issues involved in the deliberation on costs vs price in DE and online learning.

3.3 COST DRIVERS

In the campus-based F2F education, the main cost centres may be divided into three – academic, administration, and student support. All expenses incurred in any such institution can be categorized into any of these three cost heads. In distance education (DE) as well as online learning (OLL), the entire operation, including calculation of costs, depends on four types of functions – design, development, production and delivery, and evaluation. Explanations to these four types of activities are given in Unit 1 of Block 3. You may also revisit the various factors that affect the costs of distance education discussed in Unit 2 of Block 3. These basically include the course/curriculum design, number of courses and course choice, models of

course development, media choice and media-mix, teaching-learning including the extent of hands-on/practical, student support services, among others. We have also noted in Unit 4 of Block 3, while discussing costing technology-enabled learning, that for calculating institutional and unit costs, four types of activities or cost centres are taken into consideration – design and development, course delivery, course maintenance, and overheads.

As we have noted elsewhere, to recapitulate further: i) variable costs are higher in F2F education than distance and online learning, and ii) in the latter case, fixed costs are high. Especially in case of online learning, fixed costs are higher than even distance education due to infrastructure, LMS, web design, virtual lab, etc. However, online learning may break-even faster than even distance education so as to achieve economy of scale.

As we shall see in the next section, institutional operating costs are categorized into: i) material development and production, ii) student support services, and iii) institutional overheads. All the operational aspects of institutional activities in a distance education institution fall under these three heads. We shall examine in that section how these three types of activities can be manipulated so as to reduce recurring costs and achieve economy of scale. At this stage, it is important to note that the details of such activities within these three broad heads influence and determine the pricing in distance education, i.e. fees to be charged from students; honorarium to be paid to course writers, editors, media presenters, tutors/counsellors; and the cost of printed and audio-video/digital resources sold in the open market.

Rumble (2001) reviewed and analysed various research studies and reported on cost drivers for online learning. The analysis suggests the following:

- Costing of online resources largely depends on the sophistication of the media and its process of development. In case of online programme cost, there is every possibility of this being lower, since a lot of teaching-learning is shifted to students' self-learning (thereby reducing teacher-teaching and interaction). Teacher cost can be reduced if students are engaged more with peer interaction. It has been found that teachers spend 50% more time to support F2F students than online students.
- However, in dual-mode universities, online teaching, in addition to F2F teaching, increases faculty workload, especially since online teaching involves lots of messaging and responding to students if the course is more interactive and engaging. Therefore, it is not surprising that many universities are outsourcing student interaction and engagement to external professional agencies.
- There is always a pressure on institutions to update LMS and server technologies and combine this with social technologies and networks as also with ubiquitous/mobile learning. This increases the costs of overhead/maintenance, and, therefore, the total cost.

Any increase in the cost, for whatever reasons, is directly transferred to the students in forms of increase in student fees, besides students' own expenditure on technology systems.

3.4 PATTERN OF EXPENDITURE

Besides the factors discussed above (which determine the Unit cost, and, therefore, student fees), it also largely depends on another important variable, i.e. cost efficiency. That simply means, it depends on the institutional decision-making in aspects of best alternatives to deploy the money earned from student fees and other sources. While preparing their

budgets, distance education institutions try their best to reallocate their resources most efficiently so as to rationalize the operating costs across material development and production, student support services and institutional overheads. Increasing expenditure on developing quality print, A/V and digital learning materials will ensure more quality of learning resources. Similarly, increasing expenditure on student support services will facilitate higher course completion and lower course persistence, as also higher student satisfaction. Overall, any increase in institutional overhead costs must be guarded against.

We examine here, as a case, the published data available on the national open university in India (i.e. IGNOU) for the period 1985-2006 (Panda & Gaba, 2008). The operating cost data for these ten years across three cost areas of material development and production, student support services, and institutional overheads are presented in Table 3.1 below. The data indicate the following:

- Over this twenty-year period, the institution spent about 11% of its recurring budget on development of print and audio-video (A/V) learning materials in the beginning, and this was fully subsidized since the institution was fully supported financially by the central government. Percent expenditure on this head increased in the nineties, and subsequently hovered around 8-9% in the later years. Expenditure on this head depends on development of new programmes and courses, revision of existing courses, or simple maintenance (with minor revision) of the existing courses.
- In the initial years, expenditure on student support services was lower due to limited network of regional centres, study centres and work/practical centres. The expenditure reached a peak in 2000-01 with about 58% of total operating cost on this head. Toward 2005-06 it was around 25%.

Table 3.1: Operating Costs of IGNOU (1985-2006)
(INRs in millions) (Parentheses as %)

Year	Material development and production	Student support services	Institutional overheads	Total
1985-86	00.31 (10.52)	00.00 (0.00)	02.68 (89.48)	02.99 (100)
1986-87	03.23 (29.99)	00.37 (3.48)	07.18 (66.53)	10.78 (100)
1990-91	43.68 (38.81)	32.39 (28.79)	36.47 (32.40)	112.54 (100)
1995-96	60.93 (27.95)	77.56 (35.57)	79.53 (36.48)	218.02 (100)
2000-01	226.54 (27.02)	481.90 (57.48)	129.87 (15.50)	838.31 (100)
2001-02	192.04 (18.77)	510.41 (49.89)	320.86 (31.36)	1023.31 (100)
2002-03	165.04 (14.55)	500.10 (44.09)	469.09 (41.36)	1134.23 (100)
2003-04	208.26 (17.22)	474.9 (39.27)	526.31 (43.52)	1209.47 (100)
2004-05	133.89 (9.78)	391.2 (28.57)	844.35 (61.66)	1369.44 (100)
2005-06 (provisional)	129.43 (8.37)	378.16 (24.46)	1038.35 (67.17)	1545.94 (100)

- It may also be observed from Table 3.1 that while the overhead costs were high in the initial years, these got reduced in the nineties, and again picked up to reach still a higher level of about 67% in 2005-06. In any costing exercise, it is underlined that increase in overhead expenses at the cost of learning resources and learning support increases unit cost and decreases quality of learning.

Activity 3.1

- Notes: i) Space is given below for writing your response.
ii) Compare your response with the one given at the end of the Unit.

Describe briefly the relation between various cost heads in determining the unit cost.

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3.5 VARYING STUDENT FEES

In the final analysis, it is for sure that institutions generally depend on student fees for their income as well as expenditure. The fee charged from students varies considerably across F2F, DE, and online learning courses, as also across various programmes and institutional types. Generally, student fees for F2F (campus-based) courses are higher than distance education courses, and the online course fee is generally lower than the DE course fee, though the private cost in case of online education is generally higher than that for distance education.

It has been found through online search (www.studying-in-uk.org) that there are variations of student fees across certificate, diploma, and degree courses/programmes, and across discipline areas in U.K. The cheapest fees for online degree programmes include health studies, environmental studies, and sports science. If there are experimental activities involved, generally the courses have higher fees than those which do not involve any hands-on practical. Also, short courses are cheaper than longer-duration courses. For instance, in the University of Oxford, short courses start with a fee of GBP 200; and the range of fees for full programmes fall between GBP 2,500 to GBP 15,000. In the University of Essex, the international tuition fee for an MBA degree is about GBP 19,000. The above website notes the following fee structure for an online degree across select universities in U.K. (Table 3.2).

You will notice from Table 3.2 that for both UG and PG online degrees, there is considerable variance across universities – while for both UG and PG programmes the Nottingham Trent University charges higher fees, there is significant gap in fee structure between UG and PG programmes in case of University of Derby; and Universities of Essex, Anglia Ruskin, Birmingham and Edinburgh charge lower fees for both UG and PG online programmes. You will also notice that the single-mode Open University of UK charges higher fees than many dual-mode universities noted in the table. The University of London seems to be the lowest among all in terms of student fees.

**Table 3.2: Online degree fees across universities in UK
(in GBP)**

University	Average fees for UG Degrees	Average fees for PG Degrees
Nottingham Trent University	11,000	15,000
University of Law Business School	6,500	10,000
The Open University	5,800	11,000
University of London	3,000	3,000
University of Derby	2,500	8,000
University of Oxford	4,650	9,000
University of Essex	4,620	6,000
Anglia Ruskin University	4,500	5,000
University of Birmingham	3,500	4,000
University of Edinburgh	4,000	5,000

In case of India, though we can know about the fee structure of distance learning and online learning programmes from the prospectus of single-mode open universities and dual-mode universities, we could only analyse student unit cost and student unit fees from only the published literature which are a few. The latest available data, based on research and analysis, is the study by Datt and Gaba (2006), and analysed in the context of funding and income and expenditure of dual-mode and single-mode universities in India by Panda and Gaba (2008), are given in Table 3.3 which is self-explanatory.

Table 3.3: Student fees as percentage of unit cost (2003-04) in India (INRs)

Institutions	Unit cost	Fee per student	Fee as % of unit cost
<i>Open Universities</i>			
1. Dr. B.R. Ambedkar Open University (BRAOU)	1,745	1,435	82.23
2. Indira Gandhi National Open University (IGNOU)	8,118	5,790	71.32
3. Yashwantrao Chavan Maharashtra Open University (YCMOU)	2,323	3,115	130.19
4. Uttar Pradesh Rajshree Tandon Open University (UPRTOU)	2,527	3,115	123.27
<i>Dual-mode Universities</i>			
1. Andhra University	2,080	2,070	99.52
2. Annamalai University	3,824	3,698	96.71
3. University of Delhi	1,641	946	57.65
4. University of Mumbai	512	2,376	464.06

You will notice from Table 3.3 that while a dual-mode university like Delhi charges lower fees from DE students (only 57.65 of expenditure or per student cost) and thereby manages its expenses from additional sources of income, open universities like BRAOU and IGNOU charge less fees per student than what they spend per student (thereby manage their budget with income earned from additional sources). From the limited number of universities presented in Table 3.1, it is seen that universities of Delhi, BRAOU, Andhra and YCMOU charge lower student fees. It may also be noted here that, as per the agreement with the state government at the time of the establishment, YCMOU manages all of its recurring expenses on its own without any financial support from the state government – a unique case which can be comparable to similar case of Open University of Hong Kong (ref. Unit 2 of this Block).

3.6 WECT: A CASE

From the point of view of price and cost of distance education courses, we discuss here an important recent report on this subject by the WICHE Cooperative for Educational Technologies (WCET) (Poulin & Straut, 2017) which may further sharpen our understanding of pricing and costing in distance education. Based on a survey of higher education institutions, in 2016, WECT came up with the report, which has discussed many aspects on this area, though we have selected the following findings which are related to our discussion on pricing in distance education. The data presented below are self-explanatory.

- Reasons for variation of price of DE courses across institutions (% of institutional responding to reasons):
 - All students in DE are charged extra fees (22.3%)
 - Some programmes charged more due to requirements (19%)
 - Different institutions are allowed to charge different fees (17.9%)
 - Some programmes go with the market forces (17.3%)
 - Self-supporting programmes are allowed to charge their fees (12.3%)
 - Competency-based programmes charge more (1.7%)
 - Others (9.5%)
- DE teaching costs are less or same or more than F2F courses:

	Same	More	Less
➤ Instructional design of course	1.2%	24.1%	74.7%
➤ Assuring accessibility	1.2%	36.1%	62.7%
➤ Create learning materials	2.4%	37.0%	60.6%
➤ Design course specifications	1.2%	45.8%	53.0%
➤ Delivery of course content	5.4%	62.0%	32.5%
➤ Purchasing of learning materials	3.0%	65.5%	31.5%
➤ Facilitation of group activities	3.6%	70.5%	25.9%
- In response to the query on measures taken to reduce price of course materials, institutions responded that: adoption of open educational resources (OER), electronic version of textbooks, working with vendors like Pearson to develop cheaper learning materials, among others could reduce the price of learning materials.
- When the institutions were asked if the DE fees were related to the cost of producing learning resources, the responses suggested that: while this is true, however, cost-effectiveness and market research are undertaken to determine this; excess of the tuition fees was devoted to development and offer of DE courses; money earned from DE is spent on DE itself to make itself sustaining. This may be compared with Indian dual-mode universities where the surplus or savings from DE delivery is used to support various expenses (including salary) in the F2F campus-based education.
- On further considerations relating to DE fees, the institutions submitted that: the DE fees also support faculty and students' extra services; institutions generally take in to consideration market competitiveness to determine fees; no distinction is made between the fees for F2F and DE delivery; and some institutions still struggle to make up expenses beyond what student fees provides for.

Activity 3.2

Notes: i) Write your response in the space given below.
 ii) Compare your response with the one given at the end of the Unit.

From the case data on student fees and student unit cost in Indian Open Universities and dual-mode universities presented above, what broad inferences you deduce?

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3.7 COST VERSUS PRICE

The discussion in the preceding sections provide us some basic understanding about the budget heads in the operation of DE course delivery, as also the considerations for determining pricing/student fees vis-à-vis operating costs. Institutions develop their pricing policy including student fees across various programmes of study based on unit operating cost, the market forces on educational pricing, as also the sources and amount of income generated by them.

In the context of United States, Taylor, Parker III and Tableaux (2001) point out that universities face two types of dilemmas in case of offer of DE programmes: i) what kind of financial support/incentives should be provided to the faculty for developing DE courses, and ii) what kind of pricing policy should be developed which should be cost-effective and at the same time follow the state-mandated guidelines. The authors quote the method of costing and pricing developed by the Texas A&M University in which the regulatory guidelines are adhered to as well as the university pricing policy based on development and delivery costs are both affordable by students (in terms of fees) as well as they are appropriate to the student market. The regulatory mechanisms permit that cost for DE may be higher than that for F2F education since the former involves high technology deployment. In especially the state of Texas, government funding is not permitted for developing and offering distance courses. The Texas formula on costing and pricing of DE takes into consideration the following:

- The university calculates the cost per semester credit hour. Since many of the faculty and facilities of the main campus-based university are used for DE delivery, the university needs to decide to consider the total cost or the marginal cost for DE. While the decision is not that easy, it may also be kept in mind that institutional budgeting is done keeping in view the long-term goals, besides the pricing for DE courses.
- While institutions generally take into account the capital and recurring expenses, as also the expenses involved in expanding the programme offer basket or study centre networks or technology infrastructure, there are other disguised labour areas which need to be taken into account for

increasing internal efficiency. For instance, it is worth to work out if the faculty and staff workload is optimally determined and utilized; if here is efficiency in the deployment and utilization of financial resources; if the pre-stipulated timeline is maintained to achieve an efficient time management; if there is sound decision-making in making financial and other resource deployment in best possible alternatives; if at all the administration and management appropriately understands the entire gamut of DE mechanisms, and if it has ability as well as willingness in taking appropriate decisions; and most importantly in implementation and monitoring; and so on.

While it is not desirable, nor appropriate, that the entire cost burden or expenditure is directly and totally translated to the students in terms of student fees, it is also equally important that alternative sources of funding should be explored, and also that disguised labour be eliminated and internal efficiency is ensured.

3.8 LET US SUM UP

In this unit, we discussed the important and complicated issue of pricing in distance education and online learning vis-à-vis costing, and especially in consideration of the recurring expenses or operating costs. You have observed that there is variation within institutions in their operating costs (development and production, student support services, and institutional overheads) across years and decades; so also variations exist across institutions (single-mode open universities and dual-mode universities) between unit cost (i.e. cost per student) and fee per student. We have seen that while there is a need for institutions to reduce disguised labour and increased internal financial efficiency including consideration of best possible alternatives, there is also a need to develop regulatory as well as institutional costing and pricing policy especially when we consider the existence of single-mode, dual-mode and consortia on the one hand, and public institutions and private institutions on the other hand.

3.9 MODEL ANSWERS TO ACITIVITIES

Activity 3.1

While from an academic point of view, four cost centres are taken into consideration (course design and development, course delivery, evaluation, and maintenance/overhead), from the point of view of calculation in terms of operating costs, development and production, support services, and overheads assume significance. While students will expect more expenditure on support services, any increase in institutional overheads will increase total and unit costs and may decrease quality of education.

Activity 3.2

From the case data on unit cost and fee per student in open universities and dual-mode universities in India, it is deduced that while there is considerable institutional variance in both, there is mismatch between both across institutions. There are institutions which charge lower fees from students than what they spend on each student, there are institutions where the student fees as percentage of unit cost is as high as 464% in case of dual-mode distance education and 123% in case of single mode open university education.

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UNIT 4 COST AND QUALITY IN DISTANCE EDUCATION

Structure

- 4.1 Introduction
- 4.2 Learning Objectives
- 4.3 Quality Dimensions of Distance and Online Learning
- 4.4 Cost Aspects of DOL
- 4.5 Cost and Quality
- 4.6 Let Us Sum Up
- 4.7 Model Answers to Activities
- 4.9 Suggested Readings

4.1 INTRODUCTION

In the preceding three units, we discussed respectively DE for human resource development, funding of distance education and pricing Issues in distance education. We have also discussed educational costs in Block 1 (Unit 3), and shall discuss more on cost of distance education in Block 3. In this unit, we examine various aspects of quality and cost of distance and online learning (DOL), and the relationship among access, cost, and quality in DOL through examination of some seminal works as well as relevant research studies. This background shall equip you better to further examine various aspects of cost of distance and online learning in the subsequent blocks.

4.2 LEARNING OBJECTIVES

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

- describe quality as well as cost aspects of distance and online learning, and
- explain how cost and quality are related phenomena in the context of distance and online learning.

4.3 QUALITY DIMENSIONS OF DISTANCE AND ONLINE LEARNING

As you already know, there is clear distinction between F2F, distance education, and online learning in their organisation and delivery. The F2F education heavily depends on the prescribed curriculum and the translation of teaching-learning by teachers inside the classroom and labs, etc. The quality of learning largely depends on the quality of text books, the quality of teaching by teachers, the quality of students' self learning and engagement with activities and assignments. In case of distance education, which takes place at a distance and is mediated by various media and technology, the quality depends on the quality of self-learning materials (in print, audio, video, teleconferencing, etc.), the quality of student's self-learning, the quality of tutoring and counselling, and the quality of student engagement in

assignments, projects, and hands-on activities. In so far as online learning is concerned, almost all activities are carried out on the web (through the platform called Learning Management System). In this case, quality depends on the quality of interactive digital resources, collaboration and interaction, engagement in tasks and activities, and specifically the quality of reflective self-learning.

While the context of F2F education is largely subject-centred and teacher-centred, in the contexts of distance as well as online education, the stages of design, development, delivery, and evaluation assume considerable significance. Carey and Trick (2013) have put up the distinguishing role of the faculty in F2F and distance and online learning (DOL) as given in Table 4.1 below. The table outlines the basic roles played by the faculty in case of campus-based F2F education and DOL which takes place at a distance.

Table 4.1: Faculty role in F2F and DOL

Traditional F2F education	Open and distance learning
The faculty members undertake the following activities: • Development and maintenance of curriculum. • Presentation through direct instruction and student activities. • Establishment of alignment between course materials and delivery strategies. • Assessment of student learning outcomes. • Advising students on academic and career matters. • Providing various extra-curricular services to the institution. • Conducting research more on one's discipline, and less on discipline teaching-learning.	The faculty members generally undertake the following activities: • Design and development of pre-produced course-curriculum design, development of learning resources in print, audio, video, multimedia, online digital resources, etc. • Delivery of instruction through teacher-built self learning materials, media and technology, tutoring and counseling, and practical. • Assessment of student learning outcomes largely with the help of technology. • Advising and mentoring students through various electronic means. • Act as instructional designers, aligning the learning outcomes with learning resources, learning activities, collaboration and interaction. • Conducting research more on pedagogy of student learning, discipline teaching-learning, and feeding back the findings to curriculum design and student learning.

As can be seen from Table 4.1, though the indicators of teaching-learning remain largely the same irrespective of the mode of delivery, however the functional role of the faculty vary considerably in the context of distance and online learning.

In the past few years, many institutions have moved toward using 'blended learning' (BL) as a curriculum design as also delivery strategy (combining F2F and online learning), and use of 'open educational resources' (OER) in the resource-based online or blended learning. Both campus-based and distance education/virtual teaching institutions have moved toward BL and OER. Open education, open learning and OER have facilitated institutions and faculty to move towards open pedagogy and open educational practices.

As Smyth, Bossu and Stagg (2016) noted, a move towards open-empowered learning approach involves the following principles, applicable to both F2F-blended and online-blended teaching-learning contexts:

- The control over learning resources and their navigation rest with the learners who may move in different pathways (based on their learning styles and learning approaches) to achieve the desired learning outcomes. This also involves modular accumulation of credits, credit transfer, as well as recognition of prior learning.
- There is use of both formal and informal learning, and open-content/open educational resources are used as shared and/or co-created knowledge by both learners and teachers.
- Given that the learning ecosystem is open (based on open educational practices), mentoring support is provided to learners to be autonomous and develop critical thinking, reflective thinking, and abilities for innovations.
- Though initial teacher involvement is high, in this process of open pedagogy, open educational practices, and open learning, there is more of self-regulated learning, co-travelling and co-creation through intensive engagement in tasks/activities in-context, and therefore, subsequent teacher involvement gets reduced and learning autonomy gets enhanced.
- Adoption of open educational practices brings in more openness, flexibility, transparency, and social involvement in learning. All these contribute to authentic learning, based on authentic assessment.

Given that there have been considerable developments today in areas of media and technology (especially in social technologies and social networks) and in learning resources design (especially in OER), still most distance education institutions are largely using the printed resources (and traditional audio-video media) and also developing the self-learning materials on their own. The quality dimensions or traditional distance education generally include the following:

- Increased access and equity (and inclusiveness) with a reasonable or lower cost.
- Appropriate curriculum and instructional design based on student needs, learning approaches/styles, and development of self-learning materials that are more sufficient and interactive.
- Deployment of need-based media mix/integration, which could be supplementary, complementary or integrated.
- Appropriate and student need-based tutoring and counseling, assessment of assignments with tutor comments, and quality hands-on practices.

More institutions are adopting online teaching-learning systems (and also adopting online learning to blended learning systems), and quality assurance dimensions go beyond the traditional distance education. In the context of evaluation of an online course on OER, Panda (2019) analysed various quality assurance and evaluation benchmarks for online learning, which included the following:

i) *Online Course:*

- Access, equity, inclusiveness.
- Curriculum: content, learning objectives, activities, assignments.

- Teaching-Learning: easy to comprehend, collaborative and interactive, help and FAQs, visuals and assignments aligned to content, additional resources.
- Technical: ease of access, learner control of navigation, good visual appeal.
- Overall learner satisfaction.

ii) *Return on Expectations (ROE):*

- Reaction (satisfaction, value derived from the time spent).
- Learning (development of knowledge, skills, attitude, and confidence).
- Behaviour (empowerment, valuable to present tasks/job, quality of content, increase in efficiency, and perceived impact on future work).

iii) *Return on Investment:*

- Time and cost (time spent for doing the course, time saved in present work due to the course, and cost saving).
- Institutional cost.
- Individual/private cost.

Besides the above, it is important to consider the existing paradigms for evaluating the quality of online and blended learning programmes. These paradigms (Shelton, 2011) suggested by various researchers and online educators shall be useful to establish the assessment parameters as also establish quality of online and blended programmes. The important ones are briefly outlined below:

- *IHEP's 24 Benchmarks:* In the report of the Institute for Higher Education Policy (IHEP), sponsored by the Blackboard, 24 quality indicators were presented under seven themes: institutional support, course development, teaching and learning, course structure, student support, faculty support, and evaluation and assessment.
- *Tony Bates' ACTIONS Model:* The seven indicators include: access and flexibility, costs, teaching and learning, interactivity and user friendliness, organizational issues, novelty, and speed.
- *WECT Best Practices:* In the principles of good practice, the Western Cooperative for Educational Communications (WECT) identified three broad indicators: institutional context and commitment (role and mission, faculty support, resources for learning, student services, and commitment to support), curriculum and instruction, and evaluation and assessment.
- *Eight Dimensions by Bedrul Khan:* Khan presented an eight-dimensional framework for e-learning: institutional, management, technological, pedagogical, ethical, interface design, resource support, and evaluation. Each of these has detailed explanations and sub-indicators.
- *Frydenberg E-learning Standards:* The nine standards cover: institutional and executive commitment, technological infrastructure, student services, instructional design and course development, instruction and instructors, program delivery, financial health, legal and regulatory compliance, and programme evaluation.
- *Five Pillars of Sloan Consortium:* The five pillars of quality included: learning effectiveness, student satisfaction, faculty satisfaction, scale, and access.

- *Lee and Dziuban Strategy*: The strategies for quality included: administrative leadership and support, ongoing programme concerns, web course development, student concerns, and faculty support.
- *CHEA Accreditation and Quality Assurance*: Seven areas of quality assurance were identified by the Council for Higher Education Accreditation (CHEA): institutional mission, institutional organizational structure, institutional resources, curriculum and instruction, faculty support, student support, and student learning outcomes.
- *Moore and Kearsley*: The two established distance educators identified six variables: number and quality of applications and enrolments, student achievement, student satisfaction, faculty satisfaction, programme or institutional reputation, and quality of course materials.

The fore noted selected frameworks provide for comprehensive areas of online learning which institutions and faculty consider as important for design, development, delivery, and evaluation of online and blended programmes and courses.

Activity 4.1

- Notes: i) Write your response in the space given below:
ii) Compare your response with the one given at the end of the Unit.

What are the major variables that are indicative of the quality of distance education and online learning?

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4.4 COST ASPECTS OF DOL

At the first instance, costs in distance and online learning (DOL) consist of institutional costs and individual/private costs. Further, as you have seen in Block 1 of this course, there are also further cost divisions into: fixed and variable costs, average and marginal costs, opportunity costs, and costs expressed in terms of unit cost (i.e. enrolled student cost and graduate cost). You may revisit Block 1 for a detailed recapitulation of educational costs. We shall discuss these costing aspects and their application in distance and online learning in Block 3 of this course. Further, as you have seen in the preceding Unit 3, pricing in DOL assumes significance since pricing (and especially student fees) is determined on the basis of costing of design, development, delivery, and evaluation of programmes and courses.

Moreover, as noted by Ng (2000), there are available studies which focused on studying the effectiveness of both conventional classroom-based instruction and cost effectiveness of technology-enabled learning including

computer-mediated communication (CMS). Further, the author has underlined that various cost studies have stressed on different aspects of costing/cost centres, and that it is, in practice, very complicated.

In a comprehensive report, the Hanover Research (2014) noted various aspects of development, delivery, and administrative costs of distance and online learning as follows:

- *Development Costs:* These include expenditure incurred on: materials, staffing, staff equipment, copyright clearance, materials production, annual revision of materials, and developmental testing.
- *Delivery Costs:* These include expenditure on: materials delivery, instructor equipment, instructor expenses, instructor time, student/instructor helpdesk, and call costs.
- *Administrative Costs:* The 12 cost areas for administration of DOL include: decision making, institutional evaluation and quality assurance, website development, website implementation, learning platform software/course management system, internet costs, internet start-up costs, intranet ongoing costs, local training/counselling centre, digitized courseware and library, and marketing costs and expenses.

Both cost-effectiveness and cost-efficiency assume greater significance in any educational costing including DOL; and institutions adopt various cost-saving strategies to break-even or achieve economy of scale, while maintaining the pre-stipulated level of quality of instruction and of student learning.

Activity 4.2

Notes: i) Space is given below for writing your response.

ii) Compare your response with the one given at the end of the Unit.

Briefly enumerate various cost centres in distance and online learning.

4.5 COST AND QUALITY

In this section, we shall examine the relationship between cost as well as quality of distance and online learning (based on what you have read in the preceding two sections), and how or to what extent a balance between both can be maintained, or whether it is possible to reduce cost while maintaining quality.

The much circulated and much debated analysis on this aspect is the 'Iron Triangle' of Sir John Daniel (Daniel, Kanwar & Uvalic-Trumbic, 2009) comprising the relationship between three variables of access, cost, and quality (see Figure 4.1).

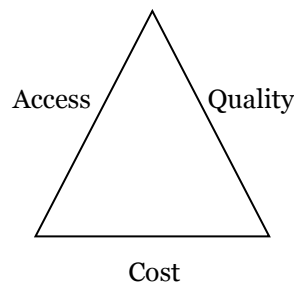


Figure 4.1: Relationship between cost, access and quality

It has been argued by many that all the above three aspects cannot be achieved at the same time; one can achieve at the most two of the three. Daniel believes that if proper care is taken, a balance between all the three can be maintained. However, mainly two characteristics determine this. One, that distortions can be made in their balancing, depending on the trade-offs among the three. Two, that the triangle has a fixed length, i.e. the stretching of any of the three has a limit. Traditionally, this is the 'iron triangle'. Sir John argues that in distance education (as also in case of online and blended learning) it is possible to break out of this iron triangle since increasing access to a large student group through distance and online learning could reduce (unit) cost while still maintaining quality. In other words, the fixed length can be extended further as shown in Figure 4.2 in which both access and quality can be expanded in DE while lowering the cost, or in other words while achieving the economy of scale.

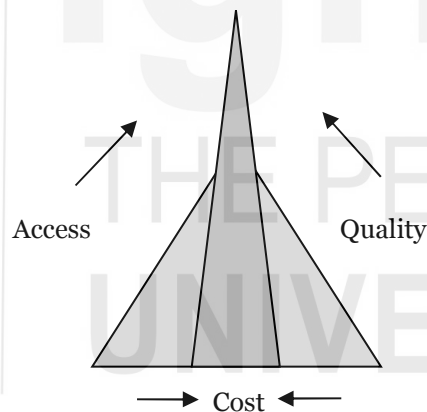


Figure 4.2: Extending the fixed length of the iron triangle

While critically analyzing Daniel's triangle, Power and Gould-Morven (2011) argue that in spite of technological and allied developments, many higher education institutions have not adopted DE (or even the later development of online learning) as the main programme/course delivery strategy, and, therefore, the Daniel triangle is dated and unworkable. The authors present a new form of online learning (BOLD – blended online learning design) which may come out of the iron triangle and meet the expectations of teachers, students, and administrators. They argue about 'priorities' by stakeholders, rather than the 'vectors' of Daniel; and the changed triangle involves cost-effectiveness (in place of cost), accessibility (in place of access), and quality remains constant. The argument is that students are generally concerned about 'accessibility', the teachers always defend 'quality', and the administrators/institutional leaders are concerned with 'system cost-effectiveness'. These three stakeholders do not work in tandem with each other and thereby bring in conflict amongst themselves. However, a balance can be maintained if each one's needs are fulfilled to a threshold level.

The argument is that the three stakeholders can respond to the needs of each other only when each one's traditional priority is met or is not disturbed. For example, the faculty can respond to student demand for more accessibility through online learning provided their traditional teaching and research is not disturbed. This threshold or equilibrium is possible if the needs of all the three priorities are comfortable with satisfaction of their needs. Similarly, administrators will respond positively to the demand for more student accessibility if there is higher cost-effectiveness. Similarly, also, if student accessibility is restricted, students may not have appreciation for teacher concern of quality – what quality if no access is provided! The authors suggest that distance education and online learning can be initiated and sustained (which provide for more accessibility), provided the faculty is involved in its decision-making, and that there is technological sophistication, and efficient utilization of resources to achieve balanced cost-effectiveness (including institutional prestige, and attracting high quality faculty).

Vis-à-vis the above argument, and in continuation to breaking the iron triangle, Sir John argues that handing over the examination/assessment process to a national or international agency shall not only reduce faculty workload (which can be geared toward quality online and blended learning), but also enhance quality and standards comparable to international best practices (rather than the model of full assessment of their students by the faculty as in the case of United states). In this context, he suggests consideration of UNESCO's 'Guidelines for Quality Assurance in Cross-Border Higher Education' for guidance. In conclusion, to quote:

“The aim of wider access, high quality, and low cost are not achievable, even in principle, with traditional models of higher education based on classroom teaching in campus communities. A perception of quality based on exclusivity of access and high expenditure per student is the precise opposite of what is required. One based instead on student achievement enables developing countries to scale up their higher education APRs without breaking the bank or fatally compromising quality.” (Daniel et al, 2009, p.8).

We have other literature available (Xu & Xu, 2019) which examined various research studies to suggest that always online learning may not be cost-effective. One argument (which the authors question) is that the class size in online courses can be increased to reduce cost by muting the online interpersonal interaction and social presence; however, this may also reduce the quality of education. There are also studies, which suggest that there is a negative relationship between online learning and quality student learning outcomes since online courses are not supportive of student learning as classroom courses are. There is a large upfront cost of establishing and developing high quality online courses. Though it depends on the nature of online courses – starting from use of pdf materials and powerpoints, through use of video lectures and quizzes, to more resource-based, reflective, collaborative, supportive, interactive and engaging (through varieties of authentic activities) learning. More interactive and engaging online courses cost more money in terms of both start-up course development and recurring course delivery. The technology cost (for any institution, faculty, and students) makes online courses more cost-effective than classroom courses. Further, economy of scale may be maintained at the cost of quality (i.e. high student interaction and task-engagement). On the other hand, online education does not face the constraint of space as classroom education faces. It becomes more cost-effective when online courses/ resources are shared between both online and classroom students, as also

Activity 4.3

ii) Compare your response with the one given at the end of the Unit.

[illegible]

The vector of 'access' is further boosted by technology-enabled learning and online learning, providing flexibility in learning as also acquisition of additional qualifications simultaneously. This also facilitates diplomas and degrees without spatial displacement. Technologies are also providing access to learning designs and pedagogies with individualized pathways for access to learning resources. Such provisions facilitate constructivist and deep learning. The flexibility to enroll and exit, as also in tutorial and mentoring support, extends the vector of access to new possibilities including greater engagement in learning.

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have cordial interaction of teaching, support, and administrative functions; but for dual-mode universities, central administration interference/engagement with faculty and student support may not be accepted by teachers (going against strong student-teacher relationship). However, one important aspect of cost-effectiveness which needs to be seriously taken is enhancing multi-skills of the faculty and their appropriate and optimum utilisation.

In relation to the access-cost-quality triangle, but in a different context of evaluating effectiveness and return-on-investment (ROI) and return-on-expectations (ROE), Panda (2019) in a recent study evidenced that while short online courses can achieve scale while maintaining course quality, both private and institutional costs can be reduced by using OER and by reusing the learner- and teacher-generated resources as also by using open source LMS like MOODLE. Though the public institutions may not be interested as much in ROI as in return on expectations (ROE) since it balances course quality, learner knowledge and skills and satisfaction, transfer of learning, and cost.

4.6 LET US SUM UP

In this unit, you studied various aspects and indicators relating to the quality of distance and online learning, as also various aspects of costing in DOL. We analysed the relationship between access-cost-quality based on the iron triangle of Sir John Daniel and other critical research literature. The revised explanations to the breaking of iron triangle by Daniel provides for much ground as also confidence that distance teaching and virtual learning institutions could achieve economy of scale by increasing access (especially through technology-enabled learning), enhancing (or maintaining equal level of) quality, and reducing cost (i.e. break-even early and continue to accrue higher return on investment and return on expectations). We shall take up detailed analysis of cost of distance education and online learning in the next/third block of this course.

4.7 MODEL ANSWERS TO ACTIVITIES

Activity 4.1

The major broad variables to assess quality of distance and online learning include design, development, delivery, and evaluation of programmes/courses. All these can be further spread to include: access and equity and inclusiveness, curriculum and course design, concept mapping and outcome based learning, media mix/integration, learning resources, collaboration and interaction, tasks and activities (including hands-on), technical and academic learner support, course satisfaction, development of knowledge/skills/attitude, and cost (both institutional and individual).

Activity 4.2

There are four major cost centres in distance and online learning: design and development (curriculum and course design, development of learning resources, copyright clearance, revision of learning resources, developmental testing), programme/course delivery (material dispatch, tutors and counselors, call centres and other technology-based student communication support, hands-on activities), administrative costs (institutional meetings and decision making, full-time faculty and staff salary, accreditation and quality assurance, LMS, training, and marketing), and evaluation (including student evaluation and programme evaluation).

Activity 4.3

Distance and online learning can achieve a balance between access, cost, and quality if there is use of blended learning, technology infrastructure is need-based and fully utilized, and marginal cost is reduced to as minimum as possible without compromising quality.

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