

# **Financing and Cost-Effectiveness of Distance Education**

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## INTRODUCTION

Almost every country in the world puts great emphasis on educating citizens and it is the main responsibility of its government to provide at least compulsory education and higher levels of education if possible. However, due to scarce resources and other commitments spending governments of developing countries find it more and more difficult to meet the requirement of their citizens in higher education. Thus, higher education, the top of the learning ladder, frequently finds itself at the bottom of priorities when allocating funds for education.<sup>1</sup> After all, it is quite difficult to rationalize expenditure for another university when a high proportion of the country's population is still illiterate.

The purpose of this paper then, is to take a close look at the financing and cost-effectiveness of education, in general, and distance education, in particular, in order to draw up some policy guidelines for financing such types of education. The paper contains six sections. *Section One* is a short review of financing education in Asia and the Pacific. It describes sources and uses of funds and problems related to such financing. *Section Two* concerns policies for financing distance education. Such policies can be divided into two categories, policies by countries or in developing and developed countries, and policies for expenditures which are further divided into various types of expenses. The cost of distance education is discussed in *Section Three*. *Section Four* deals with cost-effectiveness or internal efficiency and cost-benefit or external efficiency of distance education. In *Section Five*, guidelines for financing distance education are drawn up. Those subjects mentioned for financing are capital investment which includes buildings, equipment and media, and materials, whereas the others are operating costs which normally consist of salaries and remunerations for full-time and part-time staff, delivery cost for printed materials, audio and videotapes and newsletters, broadcasting fees for television and video programs, CAI operating cost and expenses on tutorials. Sources of funds are also mentioned in this section. The *final Section* is the layout of the loan system for distance education. The system is recommended for loans to institutes to cover capital outlay, personnel development and media research and development. The other recommendation is student loans to cover institutional cost and personal cost.

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<sup>1</sup> Psacharopoulos, George, *Higher Education in Developing Countries: A Cost-Benefit Analysis*, World Bank Staff Working Paper No. 440, Washington D.C., November 1980, p. 1.

## REVIEW OF FINANCING EDUCATION IN ASIA AND THE PACIFIC

In the last few decades, many countries in Asia and the Pacific especially developing countries are finding it more and more difficult to increase public spending on some services like education because of their low level of development and limited natural resources. Thus, the level of these services is relatively much lower. Since public services such as education are very likely not subjected to the price mechanism,<sup>2</sup> the question of the efficient use of resources for such activities has largely remained unattended. Hardly any attempt is made to work out alternative methods of providing services with lower unit cost. The main reason is that if such services cannot be properly priced how can we justify any other proper method of servicing with lower cost per unit. Nevertheless, for education services which are largely provided by the government, the alternative for the price mechanisms to achieve efficiency in use of resources is internal evaluation of a system through the study of its cost-effectiveness. This will be mentioned fully in the latter part of the paper.

Governments of developing countries in Asia and the Pacific are hard pressed for resources which are relatively scarce. The potentiality for mobilizing more resources is limited by the low level of development. Thus, governments in these countries are often faced with a vicious circle of fulfilling the aspirations of the people which necessarily require more resources. Almost every year the budget allocated to education is insufficient. Besides, a big portion of such budgets is given to primary and secondary education leaving a very small amount of such budgets to higher education. When the linear expansion of education, particularly higher education, has almost come to a halt due to scarce resources, a pertinent question that arises is how to provide better and sufficient education given such scarce resources, or in other words, how efficiently are the resources allocated to higher education utilized? Recently a new concept of higher education pioneered by the United Kingdom's Open University known as "Open Learning" is becoming more and more popular in many developing countries throughout the world and quite a few developed countries. The concept of having an open university aims at solving the abovementioned problems in order to better serve thousands and thousands of people who need higher education but cannot normally be educated in conventional universities.

Education is a major resource user. According to estimates by

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<sup>2</sup> Sharma, G. D., *Institutional Costs of University Education*, New Delhi, 1980, p. 2.

UNESCO, the total public world expenditure on education in the mid-1970s was more than \$300 billion.<sup>3</sup> Taking into account private expenditure and the foregone earning of those in school the actual resource cost of education should be well above double this figure. Expenditure on education varies from case to case and can be divided into several categories such as between type of country distinction, between education level distinction and between fields of study distinction. Table 2.1 shows two dramatic differences between developed and developing regions in the distribution of public educational expenditure. The first difference refers to the fact that 85 per cent of the world expenditure in education takes place in developed countries, whereas only 15 per cent of such expenditure is spent by developing countries. The second point to note is the similarity of expenditure as percentage of GNP spent by countries in each region. However, when expressed in relative terms, the expenditure spent by developing countries is only 4.3 per cent of their GNP, whereas the corresponding figure in developed countries is 6.2 per cent. Clearly, developing countries put nearly as much effort as developed countries into financing their educational systems.

**Table 2.1: Public Expenditure on Education by Region and as a Percentage of Gross National Product (1982)**

Region	Value (\$ billion)	World Education Expenditure	
		Percentage	As Percentage of GNP
North America	231.9	37	6.9
Europe	224.4	35	5.6
Africa	19.6	3	4.4
Latin America	36.5	6	4.2
Asia	103.6	17	5.1
Oceania	11.4	2	5.8
Developed Countries	535.8	85	6.2
Developing Countries	92.0	15	4.3
World	627.8	100	5.8

Source: UNESCO (1984), Table 3.12

<sup>3</sup> Psacharopoulos, George. *op. cit.*, p. 5.

Table 2.2 presents the typical education budget allocation in a few selected developed and developing countries. Although there exists wide variation between individual countries, primary education in developing countries typically absorbs about 40 per cent to 50 per cent of the total education budget whereas the shares of secondary and higher education are only about 20 per cent to 10 per cent, respectively.

**Table 2.2: The Allocation of Public Current Expenditure  
by Level of Education  
(Percentage)**

Country	Year	Primary (1st level)	Secondary (2nd level)	Higher (3rd level)
Bangladesh	1982	48.3	26.6	22.3
	1983	45.8	30.8	20.8
Fiji	1981	53.0	45.1	1.9
Hong Kong	1982	32.4	35.1	25.2
	1983	31.2	36.7	24.9
India	1980	36.9	24.2	13.5
Israel	1981	33.3	29.8	24.0
Japan	1982	37.7	35.1	10.5
Malaysia	1982	33.6	34.0	14.0
Nepal	1982	48.6	<sup>a</sup>	44.2
Pakistan	1981	38.9	32.6	19.7
Philippines	1982	61.0	12.1	22.1
Republic of Korea	1983	51.4	37.0	10.9
Singapore	1982	34.3	34.4	26.4
Sri Lanka	1978	<sup>b</sup>	86.1	8.7
Thailand	1982	61.1	21.1	14.5
	1983	60.2	21.1	13.8

Source: UNESCO, *Statistical Yearbook*, 1985, Table 5.3.

<sup>a</sup> Data refer to regular and development expenditure.

<sup>b</sup> Included in 2nd level.

The allocation pattern shown above is the end result of the interplay between high enrollments and low unit cost of the primary and secondary level of education on the one hand, and low enrollments and high unit cost at the higher level of education on the other hand.

As for the field of study distinction, published statistics on expenditure are extremely scarce because the accounting of the spending unit is performed at the global level and many departments share overhead costs especially those for administration and libraries. However, it is possible to look at the allocation of funds by field of study via the enrollment data in these fields. Table 2.3 shows the percentage of



university enrollments by field of study in an international cross-section. The table reveals a striking similarity in the share of enrollments in different fields of study among developed countries, developing countries and the world.

**Table 2.3: The Distribution of University Enrollment by Field of Study Mid-1970 (Percentage)**

Subject	Developed Countries	Developing Countries	World
Humanities	17	19	19
Social Sciences	19	19	19
Sciences	10	10	10
Law	6	9	8
Education	15	12	12
Engineering	11	11	11
Agriculture	2	4	4
Medicine	12	9	10

Source: Based on the International Cross-section Sample, Appendix A.

When considering public expenditure on education for the developing member countries (DMCs) of the Asian Development Bank (ADB) (only those with available data), it reveals the fact that most of them spend only a very small amount of their gross national product in education and no country spends more than 7.8 per cent of the gross national product on education. If we compare public expenditure on education with total government expenditure, it turns out to be that most of these countries' public expenditure on education is around 10–20 per cent. Details are given in Table 2.4.

The operations of any educational institute regardless of differences in either levels or categories are heavily dependent on funds from various sources. In most developing countries, a majority of the operating budget comes from the government, whereas in developed countries, the private sector is investing a lot in education. As already mentioned, the total government budget for higher education is relatively low when compared with the budget given to primary and secondary levels of education, although when expressed in per capita term, it turns out to be the opposite. Thus, many higher educational institutes have to use student fees and other sources of funds such as donations, endowments and profits from some activities as a part of the operating expenses.

**Table 2.4: Percentage of Public Expenditure on Education as Per Gross National Product and Total Government Expenditure for some DMC, in 1982**

DMCs	As per cent of GNP	Public Expenditure on Education As per cent of Total Government Expenditure
Bangladesh <sup>a</sup>	1.9	8.6
Burma <sup>b</sup>	1.6	12.2
Fiji <sup>c</sup>	5.9	11.3
Hong Kong	2.9	15.0
India <sup>c</sup>	3.0	9.6
Indonesia <sup>c</sup>	2.2	9.3
Israel <sup>c</sup>	7.8	6.8
Japan	5.7	19.1
Republic of Korea	4.0	21.5
Malaysia	7.5	n.a.
Nepal	2.6	n.a.
Pakistan <sup>c</sup>	1.9	5.1
Papua New Guinea <sup>d</sup>	4.7	14.2
Philippines	2.0	n.a.
Sri Lanka <sup>a</sup>	3.0	7.1
Thailand	3.9	20.1

<sup>a</sup> 1983

<sup>b</sup> 1977

<sup>c</sup> 1981

<sup>d</sup> 1979

n. a. not available

Source: UNESCO, *Statistical Yearbook*, 1985.

As for the proportion of each type of revenue, it was found that government budgets contribute a major portion of the revenue in conventional education and/or developed countries, whereas in distance education in developing countries student fees are higher. Some distance education institutions (Table 3.3) show that government's budget is of higher proportion to student fees, whereas others show the opposite.

If we compare the proportion of a government budget allocated to higher education between conventional universities and distance teaching universities in DMCs of the Bank, we find that distance teaching universities receive an extremely low percentage of such budget. Take the case of Thailand, for example. In 1985, the total government budget

allocated to Sukhothai Thammathirat Open University (STOU) was only 1.3 per cent of the total higher education budget, whereas the total number of students admitted by that University was three times the number admitted by all conventional universities in that country (70,000:20,000 students). Details of the total budget given to those two categories of higher educational institutes are given in Table 2.5.

**Table 2.5: Government Budget Allocated to STOU Compared with Total Higher Education Budget, 1980-1985**

Unit = Baht

Budget Year	Total Higher Education Budget	Budget Allocated to STOU	Percentage
1980	3,475,909,500	17,731,800	0.5
1981	4,019,747,300	46,857,900	1.2
1982	4,453,835,850	55,037,800	1.2
1983	5,068,237,620	69,647,800	1.4
1984	5,215,200,000	89,573,700	1.7
1985	5,419,621,000	68,136,000	1.3

US\$1 = Baht 27.00

Source: Wichit Srisa-an and Tong-in Wangsotorn (1986), Table 11, p. 51.

The revenue of any educational institution, received either from the government budget or from student fees or from other sources, is spent for various purposes such as for buildings, equipment, media and materials. The other part of spending is the operating costs which can be divided into staff development and training, remuneration, teaching aids, textbooks and other teaching media, manpower development and others. As might be guessed, total spending on buildings and equipment is usually initially high and contributes a great part of the total cost of any educational institute. However, such cost is greatly reduced once investment in such items is sufficient. Therefore the total cost of an instructional activity can be divided into two categories: fixed and variable cost elements. Fixed costs refer to the part of the total cost that is independent of the scale of the activity such as building equipment and broadcasting programs. In the case of a conventional university lecture not being attended by any student or attended by thousands of students, the cost is the same since it has already been accrued simply by making the lecture available. In the case of distance education, the cost of broadcasting is a good example of fixed cost. It does not make the slightest difference to the cost of the program whether a million students watch the broadcast or none at all.

Variable costs comprise the part of the costs that are affected by the number of students. If student numbers increase, total variable costs also increase. One may think of such type of costs as paper costs in the case of written materials, tutor wages or compensation in the case of tutorial sessions, number of classrooms and instructional materials and any other expenses that vary with student numbers. In many cases, the difference between variable and fixed costs is not as clear-cut as it should be. For example, in the case of distance education, the use of video recorders at local study centers might be at first considered as fixed costs since the center is provided with a certain number of recorders. However, if the student number increases, more recorders will have to be made available and such costs might be regarded as variable costs. Details of each type of cost will be given later in this paper.

As already mentioned above, in most developing countries, funds or finances for education are usually not enough, especially for advanced or technical education. Most of the government budget allocated to education is in primary and secondary levels because these types of education are compulsory and considered as a basic need for the population. Nevertheless, higher education is becoming more and more important and should be funded adequately in order to better serve the majority of the population.

## **POLICIES REGARDING THE FINANCING OF DISTANCE EDUCATION**

In the study by Lord Perry, the Honorary Director of the International Centre for Distance Learning of the United Nations University, there are three types of distance learning institutions (see Table 3.1):

- (i) founded for distance learning primarily;
- (ii) founded as conventional and now doing distance learning; and
- (iii) conventional institutions developing distance learning.

Table 3.1 shows the worldwide picture of distance education. For Asia, of 25 institutions in the sample, six institutions were founded primarily for distance education.

For the DMCs of ADB, the data are presented in Table 3.2. It should be noted that only the countries which have open universities are grouped under distance education. The rest are grouped under external studies and others even though some countries are developing distance education institutions now.

**Table 3.1: How Distance Learning Institutions Were Founded**

Region	Institutions			Total
	Founded for Distance Learning Primarily	Founded as Conventional and Now Doing Distance Learning	Conventional Institutions Developing Distance Learning	
Africa	10	4	2	16
Asia	6	10	9	25
Australia	13	20	7	40
Europe (East)	—	—	—	—
Europe (West)	57	27	17	101
Middle East	1	—	—	1
North America	30	41	31	102
South and Central America	7	5	7	17

Sources: Perry Walter, *The State of Distance Learning: Worldwide* Keynes Milton, United Kingdom: The Open University, (1984), p. 7.

**Table 3.2: Countries Offering Distance Education**

Distance Education	External Studies and Others
India	Bangladesh
Indonesia	Bhutan
Pakistan	Burma
People's Republic of China	Fiji
Republic of Korea	Hong Kong
Sri Lanka	Malaysia
Thailand	Nepal
	Papua New Guinea
	Philippines
	Socialist Republic of Viet Nam

From this table we will discuss policies concerning distance education in two aspects: distance education for whom and who pays for distance education. Since data are limited, some countries may be neglected in our discussion.

## **A. Distance Education for Whom**

### *1. India*

The Indira Gandhi National Open University was established in 1985 to advance and disseminate learning and knowledge by a diversity of means. It provides an opportunity for higher education to large segments of the population. It encourages open university and distance education systems in the country by coordinating and standardizing the systems throughout the country. It aims at relating education to the needs of employment, to provide access to higher education to the disadvantaged groups and to unlock opportunity for upgrading knowledge and skills.<sup>4</sup>

### *2. Indonesia*

In 1984, the Universitas Terbuka (UT) was established by Presidential Decree. The main purposes of the UT are to increase the absorptive capacity of higher education and to meet the need for university graduates for the sake of national development.

Another purpose of the UT is to provide the opportunity for higher secondary school graduates, both for those who have found employment as well as those who have not, and for the old and the young to obtain education at the tertiary level in an effort to enhance the knowledge and skills which suit their respective talents and interests. This goal is in line with the principle of lifelong education for education personnel and other people stationed in small towns and rural areas in particular. The UT offers an additional advantage, namely that students can increase their level of education without having to leave their daily tasks.<sup>5</sup>

### *3. Pakistan*

The Allama Iqbal Open University (AIOU) was established in Islamabad in 1974 as the only Pakistan institution providing distance education at the tertiary level. The University is designed to cater to the needs of the following groups:<sup>6</sup>

- (i) working adults who cannot attend formal institutions;

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<sup>4</sup> Indira Gandhi National Open University, Information Brochure, New Delhi, 1985.

<sup>5</sup> Ministry of Education and Culture, *Information Booklet on Universitas Terbuka*, Jakarta, 1984, p. 2.

<sup>6</sup> The Open University, United Kingdom, *The Allama Iqbal Open University of Pakistan*, Milton Keynes, Open University, p. 4.

- (ii) housebound women wishing to improve their education;
- (iii) in-service teachers, to improve their teaching methods and keep them abreast of changes in curricula and syllabi; and
- (iv) those unable to attend formal/conventional institutions such as location (remote areas) physical handicap, or cost.

#### *4. People's Republic of China*

In China, television universities were set up in 1960 in big cities. With regard to the development of distance education, it has been stated that there should be training of personnel in various levels to raise their professional and educational qualifications. Alongside the development of conventional universities, there should be further development of TV universities and correspondence colleges and universities which offer courses in science and technology, as well as basic introductory courses especially in the fields of finance, economics and law.<sup>7</sup>

#### *5. Sri Lanka*

A firm basis for the establishment of an Open University in Sri Lanka was laid down in the University Act of 1978. The educational program is designed to meet national education and training needs and to offer an opportunity to the many who have the dedication and drive to succeed. It grows out of the conviction that education is not only for a privileged group in society or confined to childhood and adolescence, but that all people should have access to that extent and kind of education which their full development requires, and that education should be a continuous process from infancy to the end of life.<sup>8</sup>

#### *6. Thailand*

Sukhothai Thammathirat Open University (STOU) employs distance learning techniques to enable the students to study by themselves without having to attend classes as in conventional universities. In this way, adult education is provided to those who are working so that they have a chance to raise their educational standards. People in all walks of life are given opportunities to enrich their knowledge and improve their professional competence. Moreover, opportunities for high school graduates are increased.

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<sup>7</sup> UNESCO, *Distance Education in Higher Education*, Bangkok, UNESCO Regional Office for Education in Asia and the Pacific, 1983, p. 10.

<sup>8</sup> The Ministry of Higher Education, Sri Lanka, *An Introduction to the Open University of Sri Lanka* Colombo, Sri Lanka, the Ministry of Higher Education, 1980, p. 1.

### 7. Japan

Japan established the University of the Air (UA) as an open university in 1985.

The aims of the University of the Air are:<sup>9</sup>

- (i) to provide working people and housewives with the chance of lifelong university level education;
- (ii) to provide an innovative and flexible system of university level education open to high school graduates; and
- (iii) to cooperate with existing universities and make full use of the latest scientific knowledge and new educational technology in order to offer a system of higher education which matches contemporary needs.

From the above objectives, we can summarize the target groups to be served by distance teaching universities as follows:

Location	Category		
	High School Graduates	Working Adults and Housewives	Senior and Disabled
Urban	I	III	V
Rural	II	IV	VI

While conventional institutions are mostly concerned with type I and II students, distance education institutions can cater for the needs of types II, III, IV, V and VI. This is the advantage of distance education.

## B. Who Pays for Distance Education

There are three principal sources of funds for distance education:

- (i) government
- (ii) student fees
- (iii) donations and others

### 1. Income from the Government

From Table 3.3, it can be seen that income from the government varies among countries. STOU, Korea Air and Correspondence Uni-

<sup>9</sup> The University of the Air Foundation, *The University of the Air*, Chiba City, Japan, The University of the Air Foundation, 1984, p. 5.



versity (KACU) and Andhra Pradesh Open University (APOU) seem to rely less on the government.

## *2. Income from Student Fees*

This category of income also varies among countries. APOU relies heavily on student fees (82.04 per cent). The Republic of Korea's KACU and Thailand's STOU rely moderately on student fees, 32 and 30 per cent, respectively. Student fees in Japan are about 20 per cent. Indira Gandhi National Open University (IGNOU), in the beginning, seems to rely less on this source of income, as presented in Table 3.3. Indonesia's Universitas Terbuka stated, "The funds needed to operate the UT are obtained from the Government through the State Budget, from the students through their tuition fees and from other sources."

## **C. Expenditure**

What are the major categories of expenses for distance education? Though our data are limited, we can make some generalizations: the cost of distance education varies with the types of media used. The more media the institution uses, the higher the cost.

- (i) As STOU uses multimedia techniques, the major types of expenses are media costs. In 1984, the University spent 36.65 per cent on instructional materials, 4.93 per cent on audiocassettes, 2.28 per cent on radio programs, 7.26 per cent on TV programs and 5.77 per cent on tutorials. The multimedia cost 56.89 per cent of the total expenses.
- (ii) For IGNOU at the initial stage, it seems that much more capital investment is needed. Therefore, capital cost in 1986-87 fiscal year represents 69.66 per cent of the total expenditure.
- (iii) The experience of the University of the Air indicates that the electronic media is quite expensive. The operating expenses alone in 1986 represented 41.81 per cent of the total budget.
- (iv) Everyman's University spent a large portion of the budget on course production: In 1985-86 fiscal year, the University spent 29.11 per cent for personnel involved with course development, 13.83 per cent on course operation and 15.40 per cent on printing and publishing. This indicates that the main medium used by the University is printed materials.

Therefore, various distance education institutions have different types of expenditures, depending on the media used, as presented in the following tables:

**Table 3.3: Sources of Funds for Distance Education**

Country	Year	Percentage by Source			
<i>India</i>					
Andra Pradesh Open University	1986-87	Grants	= 16.18		
		Fees	= 82.04		
		Others	= 1.78		
Indira Gandhi National Open University	1986-87	Grants	= 98.95		
		Fees	= 0.66		
		Others	= 0.59		
<i>Republic of Korea</i>					
Korea Air and Correspondence University	1985	Government	= 32.00		
		Fees	= 68.00		
<i>Thailand</i>					
Sukhothai Thammathirat Open University	1984	Government	= 22.72		
		University Revenue	= 77.28		
		Fees	= 30.11		
		Others	= 47.17		
	1985	Government	= 18.32		
		University Revenue	= 81.68		
		Fees	= 30.86		
		Others	= 50.82		
		<i>Japan</i>			
		University of the Air	1985	Donations	= 2.02
National Subsidy	= 81.21				
Government Capital	= 4.95				
Fees	= 11.82				
1986	Donations		= 2.27		
	National Subsidy		= 72.98		
	Government Capital		= 5.63		
	Fees		= 19.12		
	<i>Israel</i>				
	Everyman's University		1984-85	Government Grants	= 38.50
Other Grants		= 17.50			
Fees		= 26.50			
Others		= 17.00			
1984-86		Government Grants	= 40.00		
		Other Grants	= 20.00		
		Fees	= 27.00		
		Others	= 13.00		

Source: From correspondence with the heads of the institutions.

**Table 3.4: STOU Expenditures, 1981-1984**

Activities	Year			
	1981	1982	1983	1984
	Percentage			
1. Administration	18.13	21.27	16.44	22.62
2. Instructional Materials	37.55	40.11	44.05	36.65
3. Audiocassettes	2.90	5.25	4.89	4.93
4. Radio	5.28	4.51	3.33	2.28
5. TV	5.98	8.80	6.79	7.26
6. Tutorial	12.01	6.38	4.20	5.77
7. Examination	10.03	6.87	8.55	10.24
8. Residential Schools	—	—	2.50	1.61
9. Academic Service	8.12	6.81	9.25	8.64
Total	100.00	100.00	100.00	100.00

Source: Suna Sithilertprasit, Pensri Thipsuwankul and Thanachai Yomchinda, *Analysis of Expenditures, Sukhothai Thammathirat Open University (STOU)*, 1986, mimeographed.

2. *India's Indira Gandhi National Open University*

**Table 3.5: IGNOU Expenditures, 1986-87**

Items	Percentage
<i>Revenue Account</i>	30.34
1. Administration	1.91
2. Common Services	4.88
3. Academic Programs (Regional and Study Centers)	15.57
4. Computer Division	0.59
5. Registration and Evaluations Division	0.72
6. Library and Documentation Division	0.99
7. Publications	1.71
8. Grants to Other Institutions	1.98
9. Estate Management Division	0.86
10. Miscellaneous	0.72
11. Provision for Conveyance Advance	0.26
12. Provident Fund and Pensions	0.13
<i>Capital Account</i>	69.66
1. Development of University	32.06
2. Other Capital Expenditures	37.60
Total	100.00

Source: Calculated from *Indira Gandhi National Open University, Budget Estimates: 1986-1987, Summary of Expenditure*.

3. *Japan's University of the Air***Table 3.6: UA Expenditures, 1985 and 1986**

Items	Per cent	
	1985	1986
Salaries	23.04	23.91
Administration Expenses	19.86	21.06
University of the Air Operating Expenses	42.82	41.81
– Student Recruitment	(2.35)	(2.40)
– Preparation of Materials	(23.49)	(22.33)
– Education Research	(9.82)	(11.97)
– Installation	(7.16)	(3.11)
Transmission Station	6.01	5.57
University of the Air Foundation (Government Capital)	4.94	5.63
Donations	1.58	1.30
Reserve Funds	1.74	0.70
Total	100.00	100.00

Source: Calculated from *Budget for the 1985 and 1986 Fiscal Year, University of the Air*.

## 4. Israel's Everyman's University

Table 3.7: EU Expenditure, 1984/85 and 1985/86

Items	% of Total Expenses	
	1984/85	1985/86
1. Department of Studies		
- Administration		
- Coordination, Follow-up		
- Production and General Expenses	7.09	7.23
- Courses-personnel	30.94	29.11
- Development and Research	1.03	1.38
- Production of Study Aids	2.83	4.01
- Course Operation (Instructors, Examiners, etc.)	13.34	13.83
2. Student Administration	10.50	10.98
3. Printing and Publishing	14.96	15.40
4. Computer Service	2.79	2.86
5. Library	1.07	1.05
6. Administration	7.73	7.17
7. Maintenance and Overhead	6.44	5.99
8. General Reserve	1.29	1.01
Total	100.00	100.00

Source: Calculated from *Budget Proposal for 1985/86 Academic Year, Everyman's University*.

## COSTS OF DISTANCE EDUCATION

### A. The Media and the Cost

In general there are two major approaches in the development of a distance teaching system: the Uni-Medium or Single Medium System and the Multimedia or Mixed Media System.<sup>10</sup> The extramural study programs of various universities in Australia, which use printed materials exclusively, are a good example of the Single-Medium System. Most open universities employ the Multimedia System and feature printed materials as the core medium. This is true of the Open University in the UK, STOU in Thailand, and other open universities in the DMCs. In Thailand, STOU employs the following media:

<sup>10</sup> Srisa-an, Wichit, *Distance Education: STOU Approach*, Thailand, STOU Press, 1986, p. 14.

- (i) Main media: correspondence texts, textbooks, workbooks, radio and television broadcast handbooks, etc.
- (ii) Support media: radio and television broadcasts, including broadcasting of videotapes and course materials recorded on cassette tapes, and
- (iii) Tutorial and counselling sessions at various regional and local study centers.

In India, the IGNOU uses “printed material, radio and television broadcasts, audio and videocassettes”. In addition, there will be personal contact programs and summer schools for face-to-face instruction. In the study of science subjects and technology, home experiment kits will be supplied to the students to enable them to understand practicals on their own.<sup>11</sup>

At the Universitas Terbuka, Indonesia, students are required to carry out the following activities:<sup>12</sup>

- (i) to study the written materials which have been programmed as their main activity;
- (ii) to interact with their tutors;
- (iii) to interact with their study groups;
- (iv) to listen and watch the audio and audiovisual programs which are intended to supplement or support the written materials;
- (v) to practice and conduct laboratory activities;
- (vi) to take unit tests and the semester final examinations; and
- (vii) to conduct research and prepare a thesis relating to the principal program.

In Pakistan, Allama Iqbal Open University uses multimedia techniques. The main components of its teaching system are:<sup>13</sup>

- (i) correspondence packages, which include self-learning printed texts and supplementary study material;
- (ii) radio and television broadcasts specially prepared for distance learners;
- (iii) tutorial instruction through correspondence and face-to-face learning at study centers, where possible, with workshops

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<sup>11</sup> Indira Gandhi National Open University, Information Brochure, New Delhi, 1985.

<sup>12</sup> Ministry of Education and Culture, Information Booklet on Universitas Terbuka, Jakarta, Universitas Terbuka, 1984, p. 4.

<sup>13</sup> Allama Iqbal Open University, *The First Ten Years, 1975–1985*, Islamabad, Pakistan, Printing, Packaging & Paper Converting Corporation, 1986, p. 7.

- where appropriate; and  
 (iv) course assignments as an instrument of teaching and continuous assessment.

Other open universities are also using multimedia. In the survey by Lord Perry, 93 per cent of the programs of distance education in Asia used correspondent materials. Forty-five per cent of the programs used residential schools. In Australia, 99 per cent of the programs used correspondent materials, 70 per cent used audiocassettes and 51 per cent used residential schools. The data are presented in Table 4.1.

**Table 4.1: Number of Programs Using Various Transmission Methods as Percentage of the Total Number of Programs**

Percentage of Programs Using	Region	
	Asia	Australia
Correspondence	93	99
Telephone	7	34
Regional Services	26	40
Study Centre	31	31
Radio	36	11
TV	19	6
Audio	38	70
Video	17	42
Practical Work	33	48
Kits	—	44
Residential Schools	45	51
Others	2	15

Source: Walter, Perry, *The State of Distance-Learning: Worldwide*, Milton Keynes, UK, The Open University, 1984, p. 7.

From this table, one can assume that the cost of distance education of any institution varies with the type and number of media chosen. Discussions about costs will be presented in the next sections.

## **B. Cost Model for Distance Education**

### *1. Distance Education System*

In our previous study,<sup>14</sup> we have conceptualized distance education

<sup>14</sup> Srisa-an Wichit and Tong-in, Wongsotorn, "The Management and Economics of Distance Education: The Case of Sukhothai Thammathirat Open University" in Wichit Srisa-an, *Distance Education: The STOU Approach Thailand*, STOU Press, 1986, p. 44.

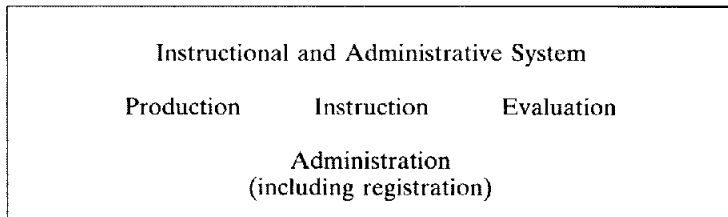
as consisting of the following systems:

- (i) admission and registration system
- (ii) product system
- (iii) delivery system
- (iv) instruction system
- (v) examination system
- (vi) administration system

The admission and registration systems are grouped together with the administration system and also delivery systems under the instruction system, because delivery is done for the purpose of instruction. We can conceptualize the total system as consisting of four parts:

- (i) production system (p)
- (ii) instruction system (i)
- (iii) evaluation system (e)
- (iv) administration system (a)

The chart illustrating the total system is provided below.



## 2. Cost of the Total System

Total costs of the system consist of fixed costs and variable costs.

$$TC = TF + TV$$

$$TF = TFp + TFi + TFe = TFa$$

TFp = Total fixed cost of production system

TFi = Total fixed cost of instruction system

TFe = Total fixed cost of the evaluation system

TFa = Total fixed cost of the administration system

$$TV = TVp + TVi = TVe + TVa$$

TVp = Total variable cost of the production system



- TVi = Total variable cost of the instruction system
- TVe = Total variable cost of the evaluation system
- TVa = Total variable cost of the administration system

Therefore, the total cost is the summation of the above categories.  
 $TC = TFp + TFi + TFe + TFa + TVp + TVi + TVe + TVa$

But in the open university, most of the fixed cost is the capital and the variable cost is the operation, we can substitute the values:

$$TC = TKp + TKi + TKe + TKa + TOP + TOi + TOe + TOa$$

$$\text{Average Cost} = \frac{TKp + TKi + TKe + TKa + TOP + TOi + TOe + TOa}{\text{Full-time Student Equivalent}}$$

### C. Cost Components

#### 1. Capital Costs

Capital costs consist of land, building and equipment. For production and instruction systems, capital costs vary with types of media, as shown in Table 4.2 below:

**Table 4.2: Facility Needs for Production and Instruction**

Media	Production	Instruction
Printed Materials	Print Shop/Warehouse	Post Office
Radio	Production Center	Broadcasting Station
TV	Production Center	Broadcasting Station
Audio	Production Facility	Record Player
Video	Production Facility	Videotape Player
Tutorial	-	Study Center
Practical Work	-	Demonstration Farm
		Laboratory/Hospital
Kits	Shop/Factory	
Residential School	-	Hotel/Seminar Center
CAI	Computer	Computer Terminal

#### 2. Operational Costs

Operational costs that vary with the types of media are shown in Table 4.3.

**Table 4.3: Operational Costs for Production and Instruction**

Media	Production	Instruction
Printed Materials	Manuscripts Copyright Printing	Mailing
Radio	Producer's time Tapes Maintenance	Broadcasting time
TV	Producer's time Tapes Maintenance	Broadcasting time
Audio	Producer's time Tapes	Staff's time at the study center
Video	Producer's time Tapes	Staff's time at the study center
Tutorial	Tutorial packages	Tutor's time
Practical Work	Student guides	Tutor's time Supervisor's time
Kits	Labor Cost Materials	—
Residential School	Tutor's guide	Tutor's time
CAI	Courseware	Computer time

## D. Private and Opportunity Costs

In addition to institutional costs, there are two categories of costs: private costs and opportunity costs.

### 1. Private Costs

There are two types:

- (i) Expenses for tuition fees and study materials. For students at STOU, our previous estimate is approximately 6.6 per cent of

the income of students who earn the degree in two years.<sup>15</sup> This is low compared with some conventional universities, and much lower compared with private universities and colleges in Thailand. Cost comparison is provided in the next section; and

- (ii) personal expenses of students are composed of the following:
  - travel expenses for tutorial sessions, final examination and residential schools
  - other expenses, such as costs of make-up examinations and sending letters and requests to the university

These expenses are minimal to students because distance education institutions provide tutorials, counselling and examination to students at the study centers which are close to their homes.

## *2. Opportunity Costs*

They are also minimal or none because open university students are adult working people. They are generally in full employment and contributing to the GNP of their countries.

In Thailand, STOU has helped to reduce social costs. For example, in 1985 there were 89 convicts enrolled with STOU and in 1986 there were 79. With the cooperation of the Department of Corrections, Ministry of the Interior, the University provides distance education to these people in the prisons. Graduates of this program are expected to function as good citizens of the country.

## **COST-EFFECTIVENESS**

In our discussion about cost-effectiveness, we take the definition that "Cost-effectiveness (CE) analysis refers to the evaluation of alternatives according to both their costs and their effects with regard to producing some outcome of set of outcome".<sup>16</sup> The alternative here is between conventional universities and distance education institutions. We further assume that "certainly, there is no evidence that distance teaching per se is less effective than conventional teaching."<sup>17</sup> Accepting the effectiveness of education of both systems, we look into the costs

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<sup>15</sup> *Ibid.*, p. 55.

<sup>16</sup> Levin, Henry M., *Cost-Effectiveness: A Primer*, Beverly Hills, California, Sage Publications, 1985, p. 17.

<sup>17</sup> Rumble, G., "Economics and Cost Structure", in Kaye, A. and Rumble G. (eds.), *Distance Teaching for Higher and Adult Education*, London, The Open University Press, 1981, p. 225.

and the efficiency. As Chang and his colleagues stated, "more specifically, efficiency in our case can be defined as effective instruction at the lowest possible costs – cost-effective instruction in a literal sense."<sup>18</sup>

Having established the base for comparison, we now take a look at the experiences of various countries having distance education institutions.

## **A. Experiences of Some Developing Member Countries**

With the development of TV network in China, TV universities were established in 1960 in big cities such as Beijing, Shanghai and Shenyang. With regard to costs, it has been stated that:<sup>19</sup>

"Facts proved that distance education is an effective way of training various kinds of professional personnel at a lower cost. According to our rough statistics: To train a correspondence student of college level, 200-300 yuan is needed per year while to a student of three-year professional training in regular colleges 5,000 yuan is needed. To a student for professional training in TV universities, only one-third of that sum is needed."

The experience of Sri Lanka also indicates the low cost of the Open University of Sri Lanka.<sup>20</sup> Comparisons of the cost of educating a student in an Open University system with the cost of educating a student in a conventional university have led to the conclusion that education through the Open University is relatively less expensive, probably less than one-third of the conventional universities irrespective of the basis on which the comparison is made. The validity of this conclusion becomes clearer in the light of the fact that the Open University system is complementary to the conventional system of higher education and makes use of both men and material in the latter system.

The experience of the Republic of Korea shows a similar result. It is roughly estimated that the average cost of Korea Air and Correspondence University (KACU) is one-tenth of the average cost per student at the nation's conventional universities. This demonstrates that distance teaching at KACU has been significantly cost-effective.<sup>21</sup>

<sup>18</sup> Chang, T. M., et. al., *Distance Learning: On the Design of an Open University*, London, Kluwer-Nijhoff Publishing, 1983, p. 133.

<sup>19</sup> *Distance Education of Higher Learning in China*, A draft paper presented at the UNESCO Workshop in Distance Education, Bangkok, August 1983, p. 4.

<sup>20</sup> The Ministry of Higher Education, *An Introduction to the Open University of Sri Lanka*, Colombo, The Ministry of Higher Education, 1980, p. 6.

<sup>21</sup> Correspondence with the Korea Air and Correspondence University.

In 1979, an Evaluation Mission from the UK Overseas Development Administration visited Allama Iqbal Open University in connection with the phasing of further aid support. From its inquiry, the Mission was of the view that, "taking into account amortization of capital costs, salaries and other recurrent expenditure, together with student numbers, the AIOU would progressively show considerable cost advantages over other conventional institutions."<sup>22</sup>

An interesting comparison of the cost between AIOU and conventional universities is provided in Table 5.1. Using what information does exist and based on projected intakes for 1987-88 extrapolated from current enrollments, the costs for two levels of education are derived.

**Table 5.1: Cost Comparison Between AIOU and Conventional Universities**

	Conventional AIOU	Institutions <sup>a</sup>	Difference
Intermediate	RS. 3930/-	RS. 5688/-	44.72%
B.A.	RS. 5240/-	RS. 7250/-	38.35%

<sup>a</sup> Based on estimated 1978 figures given in the Fifth Five-Year Plan, corrected for inflation (cautious) 25 per cent.

Source: Allama Iqbal Open University (AIOU): *The First Ten Years* (Islamabad, Pakistan: Printing, Packaging and Paper Converting Corporation, 1986) p. 52.

## **B. Thailand's Sukhothai Thammathirat Open University (STOU)**

### *1. Institutional Cost Per Head by Discipline*

Operating cost per head of selective-admission universities and open universities in Thailand are presented in Table 5.1. It can be seen from this table that open universities have a much lower average cost. It should be noted that the figures for open universities represent the average cost of STOU and Ramkhamhaeng University, the other open-admission university.

It should be noted that the figures in Table 5.1 represent only operation costs. Investment costs such as those for building programs, equipment and other infrastructure are not included. From this table it

<sup>22</sup> Allama Iqbal Open University, *AIOU: The First Ten Years*, Islamabad, Pakistan, Printing, Packaging and Paper Converting Corporation, 1986, p. 51.

**Table 5.2: Operating Cost Per Head From Government Budget and University Revenue of Restricted-Admission and Open Universities by Discipline, 1980**

Discipline	Per Head (Baht)
<i>Selective-Admission Universities</i>	
1. Medical Science and Public Health	61,810.87
2. Agriculture, Forestry and Fishery	36,718.37
3. Fine Arts and Applied Arts	28,920.36
4. Architecture and Regional Planning	22,111.73
5. Education and Teacher Training	20,507.39
6. Engineering	20,306.83
7. Natural Science	19,778.15
8. Mass Communications and Documentation	18,308.84
9. Mathematics and Computer Science	16,633.22
10. Others	15,208.63
11. Business Administration and Commerce	14,942.07
12. Humanities	14,332.56
13. Social-Behavioral Science	13,435.97
14. Law	11,970.81
<i>Open Universities (Ramkhamhaeng and STOU)</i>	
1. Business Administration and Commerce	1,695.95
2. Natural Science	972.72
3. Education and Teacher Training	638.08
4. Social-Behavioral Science	591.84
5. Law	461.34
6. Humanities	305.36

Source: Ministry of University Affairs, *Research Report on Operating Cost Per Head Fiscal Year 1980* (Bangkok, 1984), Table 4, p. 25.

is possible to see the effects of the economy of scale. The large number of students in the open universities helps to reduce the average cost.

A comparison of operating costs per head in the same discipline is provided in Table 5.3. It can be seen from this table that the average cost per head per year in the same discipline is much greater in selective-admission universities. Comparison between the two types of university system in the discipline varies from 2.13 per cent in Humanities to 11.35 per cent in Business Administration.

**Table 5.3: Comparison of Operating Costs Per Head Between Selective-Admission Universities and Open Universities, 1980**

Unit = Baht

Discipline	Type of University		Percentage
	Selective	Open	
	(1)	(2)	
1. Business Administration and Commerce	14,942.07	1,695.95	11.35
2. Natural Science	19,778.15	972.72	4.91
3. Education and Teacher Education	20,507.39	638.08	3.11
4. Social-Behavioral Science	13,435.39	591.84	4.40
5. Law	11,970.81	461.34	3.85
6. Humanities	14,332.56	305.36	2.13

### 2. Institutional Cost Per Head by Institution

The study by the National Education Commission on operating and capital costs of government universities and private colleges in 1982 reveals variation of average operating costs among institutions. A comparison of operating costs per head of government universities in 1982 with that of STOU in the same year is provided in Table 4.4. It can be seen from this table that the percentage varies. STOU's average cost is about one-fifth of the average cost per student at Thammasat University, about one-tenth of the average cost per student at Srinakarinwirot, Prasarn Mit Campus, and about one-fiftieth of the average cost at Mahidol, the medical university.

### 3. Cost Per Graduate

An interesting comparison is the cost per graduate. How much do the institutions spend to graduate one student? The answer is provided in Table 5.5. In this table, it should be noted that the adjusted cost is higher than the data in Table 5.4. For STOU, the assumption for adjusting is that the success rate is 50 per cent of the cohort (dropout = 50 per cent) and that the average number of years to complete a two-year degree program is three, a three-year program is four and five

**Table 5.4: STOU Operating Cost Per Head As Percentage of Cost Per Head of Other Universities, 1982**

Unit = Baht

Institution	Per Head in Other Universities (1)	STOU Per Head (2,341 Baht) As Percentage (2)
Khon Kaen	49,635	4.72
Chiang Mai	40,210	5.82
Prince of Songkhla	37,244	6.29
Kasetsart	24,683	9.48
Chulalongkorn	46,089	5.08
Thammasat	11,463	20.42
Mahidol	120,730	1.94
Srinakarinwirot, Prasarn Mit	25,999	9.00
Silpakorn	27,394	8.55
King Mongkut's Institute of Technology	27,230	8.60

Sources: (1) National Education Commission, *Research Report on Expenditures and Investment in Universities and Private Colleges* (Bangkok: National Education Commission, 1985), p. 113.

(2) Suna Sithilertpasit, Pensri Tipsuwankul and Thanachai Yomchinda, *Analysis of Expenditures, Sukhothai Thammathirat Open University, 1980-1983* (Mimeographed).

months, and a four-year program is six. The calculation shows that the average cost per graduate is lower in STOU than in other universities, similar to the operating cost per head.

#### 4. *Private Costs*

We have classified private costs to be borne by students into two categories: (i) expenses for tuition fees and study materials; and (ii) other personal expenses. The study by the National Education Commission reveals variation of private costs among institutions. A comparison with STOU cost is provided in Table 5.6. From this table, it can be seen that:

- (i) The private costs per student at STOU is not much different from other selective-admission universities. But compared with private colleges, the average cost for tuition and fees is very much lower;
- (ii) Compared with government selective-admission universities, the average cost per student for books and study materials at STOU is



**Table 5.5: STOU Operating Cost Per Graduate As Percentage of Cost Per Graduate in Other Universities, 1982**

Unit = Baht

Institution	Per Graduate Cost in Other Universities (1)	STOU Per Graduate (7,023 Baht) As Percentage (2)
Khoan Kaen	61,276	11.46
Chiang Mai	46,186	15.21
Prince of Songkhla	46,791	15.01
Kasetsart	31,490	22.30
Chulalongkorn	53,532	13.12
Thammasat	12,790	54.91
Mahidol	145,064	4.84
Srinakarinwirot, Prasarn Mit	30,756	22.83
Silpakorn	33,686	20.85
King Mongkut's Institute of Technology	38,000	18.48

- Sources: (1) National Education Commission, *Research Report on Expenditures and Investment in Universities and Private Colleges* (Bangkok: National Education Commission, 1985), p. 125.
- (2) Suna Sithilertprasit, Pensri Tipsuwankul and Thanachai Yomchinda, *Analysis of Expenditures, Sukhothai Thammathirat Open University, 1980-1983* (Mimeographed).

lower, but higher than the average costs of many private colleges and universities; and

- (iii) We can conclude from this comparison that the private costs of the students in the Open University is lower than conventional universities. Since the distance-teaching university provides home-based education, the students' personal expenses such as housing, travel, food, etc. are much less than those of the students at conventional universities. In the case of Thailand, STOU students spend less than 1,000 baht per year over their everyday living expenses while students at conventional universities spend not less than 10,000 baht per year; this is more than 10 times as much.

### 5. Opportunity Costs

Opportunity costs, as previously mentioned, are also minimal or non-existent because STOU students are working adults.

**Table 5.6: STOU Private Cost Per Head As Percentage of Cost Per Head Of Other Universities, 1982**  
Unit = Baht

	Tuition and Fees		Books and Materials	
	Per Head in Other Universities (1)	STOU Per Head as % (2)	Per Head in Other Universities (1)	STOU Per Head as % (2)
<i>Government Institutions</i>				
Khon Kaen	1,415	87.49	1,224	76.63
Chiang Mai	1,511	81.93	1,576	59.52
Prince of Songkhla	1,157	107.00	1,402	66.90
Kasetsart	1,115	111.03	1,651	56.81
Chulalongkorn	1,838	67.36	2,201	42.62
Thammasat	1,611	76.85	844	111.14
Mahidol	1,365	90.70	2,064	45.45
Srinakarinwirot, Prasarn Mit	1,133	109.27	1,402	66.90
Silpakorn	1,237	100.08	3,038	30.88
King Mongkut's Institute of Technology	2,279	54.32	3,824	24.53
<i>Private Institutions</i>				
Krirk Institute	7,952	15.57	662	141.69
Payap University	9,582	12.92	759	123.58
Saengtham College	5,927	20.89	625	150.08
The University of the Thai Chamber of Commerce	6,697	18.49	717	130.82
Bangkok University	6,802	18.20	1,054	88.99
Siam Technical University	7,578	16.34	629	149.13
Durakijpundit University	8,475	14.61	823	113.97
Assumption Business Administration College	9,658	12.82	1,676	55.97

Sources: (1) National Education Commission, *Research Report on Expenditures and Investment in Universities and Private Colleges* (Bangkok: National Education Commission, 1985), p. 146.

(2) Based on our own calculation.

## C. Other Countries

In the revised calculations of the Open University costs for 1973, Wagner has shown that the Open University in the United Kingdom has lower costs than conventional universities, as shown in Table 5.7.

**Table 5.7: Open University and Conventional Universities  
Revised Average Cost 1973 at 1971 Prices**

	Open University	Conventional University
A. Average recurrent cost per equivalent	£258	£960
B. Average recurrent cost including the imputed rental cost of capital per equivalent undergraduate	£272	£1,111
C. Average recurrent cost per graduate	£2,179 in 1973 £1,842 in the long run	£4,049–£4,801
D. Resource cost per equivalent undergraduate	£272 in minimum	£1,647–£1,947

Source: Leolic Wagner, "The Economics of the Open University Revisited" in David Sewart, Desmond Keegan and Borge Holmberg, eds., *Distance Education: International Perspective* (New York: St. Martin's Press, 1983), p. 380.

External programs offered by conventional institutions are also interesting. In studying the direct teaching cost of the Royal Melbourne Institute of Technology, Sharma compared the unit cost of internal and external programs of the Institutes. He concluded, "Distance education is again shown to be more economical to operate than the attending mode."<sup>23</sup> The comparison is provided in Table 5.8.

## GUIDELINES FOR FINANCING DISTANCE EDUCATION

In making guidelines for financing distance education, we look into the components of costs, especially the capital investment and operating costs previously identified. For capital needs, there are three types of facilities for consideration: (i) existing private facilities; (ii) existing

<sup>23</sup> Sharma, R. D. "The Economics of Distance Education in an Integrated Tertiary Education System" in Taylor, James C., Timmins, Judith A. and White, Vernon (eds.), *Challenges Facing Distance Education* Australia, Darling Downs Institute Press, 1984, p. 76.

**Table 5.8: Direct Teaching Unit Cost for Royal Melbourne Institute of Technology, Internal and External Programs 1975–1980**

(\$ per EFTS)

	Year	Internal	External
	1975	1,523.46	739.05
	1966	1,969.40	898.43
	1977	2,137.86	980.19
	1978	2,457.98	1,284.23
	1979	2,499.15	1,449.89
	1980	2,622.00	1,335.54
Mean	2,201.64	1,114.55	

Source: Sharma, R.D. "The Economics of Distance Education in an Integrated Tertiary Education System," *Challenges Facing Distance Education* Taylor, James C., Timmins, Judith A. and White, Vernon J., eds. (Australia: Darling Downs Institute Press, 1984), p. 76.

government facilities; and (iii) special facilities for the institution. For operating costs, we look into three components: training costs, personnel costs and material and media costs. From these categories, we will discuss guidelines as presented in Table 6.1.

### A. Capital Investment

Before making capital investment, there should be an investigation of existing facilities. Private existing facilities such as local printers and local production facilities can be used at lower costs through rental arrangement.

Public existing facilities can be utilized to the maximum if appropriate arrangement is made. For example, public schools can be used as study centers on Saturday and Sunday without interrupting school operation. Radio broadcasting stations can be utilized in the similar fashion. The Government should invest to improve these facilities in connection with the establishment of the distance education institution.

There is a great need for capital investment in the production system. As the quality of distance education is related to the quality of media and materials produced, the investment in production facilities will enhance the quality of instruction. Therefore, sufficient investment in printshops, warehouses and production facilities are on the priority lists. There is no need to invest in classroom buildings.

**Table 6.1: Resource Needs for Distance Education**

<b>Administration</b>	<b>Production</b>	<b>(Delivery)</b>	<b>Instruction Examination</b>	
Capital:				
(a) Existing	-	- Local Printers	- Local Hotels - Schools	
Private Facilities		- Local Production Centers	- Universities - Hospitals - Schools	
(b) Existing			- Universities - Post Office - Radio Station - TV Station - Hospitals	- Study Centers
Government Facilities				
(c) Special Facilities	- Computer	- Printshop - Warehouse - Production - Facilities	-	- Computer
Operation:				
(d) Training Costs	- Administration Skills	- Course Writer - Producer's - Technician's	- Tutor's Skill - Counsellor's Skills	- Examiner's Skill
(e) Remuneration	- Salaries	- Salaries	- Salaries	- Salaries
(f) Materials	- Administration Materials	- Production Materials	- Instruction Materials	- Examinations

## **B. Operating Costs**

As the quality of media is the heart of the system, there is a need to invest in the professional development of those who are involved in material productions. These include course team writers, radio and TV producers, tutors and technicians.

Staff members of the distance education institution should be recruited from qualified people and salary incentive should be attractive.

Special consideration should be given to the procurement of good quality materials, especially those used for the preparation of self-instructional materials.

## **C. Sharing the Costs**

Capital costs should be shouldered by the Government as these costs are long-term investment.

Personnel costs, especially salaries, should be mainly provided by the Government because only money from the government budget can be allocated as salaries for government officials.

As students in distance education are working adults and they directly benefit from the education provided, they should therefore shoulder the burden. Materials and recurrent expenses should be borne by students. The cost-sharing pattern is provided in Table 6.2.

**Table 6.2: Pattern of Cost-Sharing in Distance Education**

<b>Costs</b>	<b>Bearers</b>
<i>Capital</i>	
a. Existing Private Facilities	Private Contribution/Government
b. Existing Government Facilities	Government
c. Special Facilities	Government/Students
<i>Operation</i>	
d. Training Costs	Government/Students
e. Salaries	Government
f. Materials	Students
g. Recurrent	Students

## LOAN SYSTEM FOR DISTANCE EDUCATION

As the quality of the media is an important aspect of distance education, loans should be acquired to improve the infrastructure which will contribute to the quality improvement of the media.

### A. Institutional Loans for Capital Investment

Institutional loans should be introduced by the Government to improve the infrastructure that can be used for the public in general and for distance education in particular, such as loans for the installation or the improvement of the satellite or broadcasting facilities.

Institutional loans for distance education should only be used for the capital investment in production facilities such as printshops, warehouses, and radio and TV production centers.

### B. Institutional Loans for Operation Costs

There is a need for institutional loans for staff development. As this area is in great need and the training is quite expensive because more often it is conducted outside the country, institutional loans will help to improve the quality of the media.

In distance education institution, there are more needs for research and development of the media and materials used. The findings from research and evaluation can be used as feedback to improve the system. Institutional loans for institutional research and development are one of the priorities.

### **C. Student Loans**

There seems to be little need at this time for loans to students. Because students in distance education are mainly working adults, they are in the position to support themselves.

### **SUMMARY**

In developing member countries (DMCs) of the Asian Development Bank, many countries have established distance education institutions. They are India, Indonesia, Pakistan, the People's Republic of China, the Republic of Korea, Sri Lanka and Thailand. Low costs and expanding educational opportunities seem to be the advantages of distance education.

There have been changes in policies of financing distance education. The change is from the dual mode, offering distance education in conventional universities, to the single mode, establishing an institution to offer only distance education. Another change is in the source of income. The shift is from the Government to the students. Student fees have become one of the major source for financing distance education.

The costs of distance education include institutional costs, private or personal costs of students, and opportunity costs. Institutional costs vary with the types of media used for distance teaching. The more media an institution uses, the higher the cost of distance education. Multi-media techniques cost more than single medium instruction.

Compared with conventional universities, institutional operating costs of the open universities are lower than those in conventional universities. This is true in the United Kingdom, Pakistan, the People's Republic of China, the Republic of Korea and Thailand. In Thailand, the average cost per graduate is lower than in the conventional universities.

It is recommended that before making capital investment, the distance education institution should utilize the existing facilities, both government and private, to the maximum capacity. In cooperation with other agencies, the Government should make capital investment for the improvement of production facilities in order to enhance the quality of

instructional materials. Investment should also be made for staff development and also in the area of research and development of distance education.

Institutional loans should be provided to improve the infrastructure necessary for the establishment of distance education. Capital investment for production facilities and expenses for personnel training and research and development should be given high priorities. There seems to be little need for loans to students at this time.