

၂၂
၁၀၀၁၁၀၁၀၁



REGIONAL SEMINAR ON DISTANCE EDUCATION

26 November - 3 December 1986

FINANCING AND COST - EFFECTIVENESS OF DISTANCE EDUCATION

PROF. DR. WICHIT SRISA-AN



FINANCING AND THE COST-EFFECTIVENESS OF
DISTANCE EDUCATION

Professor Dr. Wichit Srisa-an

assisted by

Dr. Tong-In Wangsotorn
Dr. Narongsakdi Thanavibulchai

This paper is circulated as submitted by the author. The views expressed are those of the author and do not reflect the policies of the organizers of the Seminar.

I. INTRODUCTION

1. Education is universally considered to be the fifth factor of the basic requirements of human beings besides the other four which are food, clothes, medicine, and lodging. Almost every country in the world puts much emphasis on educating their citizens and it is the main responsibility of its government to provide at least compulsory education and also other high levels of education if possible. However due to scarce resources and other commitments and spending the government has to undertake, especially *developing* for development, it is quite often that governments of many ~~countries~~ *countries, for example developing countries*, find it more and more difficult to meet the requirement of their citizens in seeking higher education. Thus, higher education, the very top step of the learning ladder, sometimes and frequently finds itself at the bottom of the hierarchy when considering priorities in allocating funds for education. ^{1/} After all it is quite difficult to rationalize expenditure on having another university or college when a high proportion of the country's population is still illiterate.

2. Given this setting, the purpose of this paper 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 type of education. The paper contains six sections. Section 1 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 2 concerns policies for financing distance education. Such policies can be divided into two categories = policies by countries or alternative mode in developing and developed countries and policies for expenditures which are further divided into various types of expenses. Cost of distance education are topics discussed in Section 3. Section 4 deals with cost-effectiveness or internal efficiency and cost-benefit or external efficiency of distance education. In Section 5 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 other are operating costs which are normally consisted of salaries and remunerations for full-time and part-time staff, delivery cost for printed materials, audio and video tapes 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.

^{1/} George Psacharopoulos Higher Education in Developing Countries: A Cost-Benefit Analysis, p.1

II. REVIEW OF FINANCING EDUCATION IN ASIA AND THE PACIFIC

3. 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 unlikely not subjected to the price mechanism, ^{1/} 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 per unit cost. 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 the cost effectiveness of the system. This will be mentioned fully in the latter part of the paper.

4. 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 due to 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. Thus almost every year the budget allocated to education is insufficient. Besides a big portion of such budget is given to primary and secondary education leaving a very small amount of such budget to higher education. the situation becomes more and more difficult because these governments hectically allocate more resources in an attempt to linearly expand certain services. However, after a period of time they realized that their power and capability to expand has almost reached a stage where further allocation becomes almost impossible. This is further complicated by the fact that very little attention has been paid to working out the short and long-term cost of provision of these services to the public and planning for allocation of scarce resources. In fact, in many countries, hardly any attention is paid to planning alternative methods of provision of these services which might be less costly. Consequently, it turns out that their desire to fulfill the needs of the people to be educated becomes more self defeating in the course of time. 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 offering 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 above mentioned problems in order to better and widely serve thousands and thousands of people who need higher education but cannot normally be educated in conventional universities because of some constraints.

^{1/} G.D. Sharma Institutional Costs of University Education, p.2

5. Education is a major resource user. According to estimates by UNESCO, the total public world expenditure on education in the mid 1970's was more than 300 billion US dollars. ^{1/} 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.

TABLE 2.1
Public Expenditure on Education by Region
and As a Percentage of Gross National Product (1982)

| Region | Value (Billion US\$) | 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 2.12

The first difference refers to the fact that 85 percent of the world expenditure in education takes place in developed countries whereas only 15 percent 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% of their GNP whereas the corresponding figure in developed countries is 6.2%. Clearly, developing countries put nearly as much effort as developed countries into financing their educational systems.

6. 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% to 50% of the total education budget whereas the shares of secondary and higher education are only about 20% to 10% respectively.

^{1/} George Psacharopoulos op.cit., p. 5

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 |
| Hongkong | 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 | * | 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 | ** | 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 6.3

* data refer to regular and development expenditure

** Included in 2nd level

7. 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.

8. 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

9. When considering public expenditure on education for the Developing Member Countries (DMC) of the Asian Development Bank, (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 ~~10~~^{7.5} percent 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%. Details are given in Table 2.4

10. The operations of any educational institutes 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, profits from some activities as a part of the operating expenses.

11. As for the proportion of each type of revenue, ^{it was found} ~~we would say~~ that government budget contributes a major portion of the revenue in conventional education and/or developed countries whereas in distance education and/or developing countries student fees are higher. Anyway, there might be some exceptions. For example, in some distance education institutes listed in Table 3.3, in the next section, some show that government budget has a higher proportion to student fees whereas others show the opposite.

TABLE 2.4

Percentage of Public Expenditure on Education as Per
Gross National Product and Total Government Expenditure
for some DMC in 1982

| DMC | As % of GNP | Public Expenditure on Education As % of Total Government Expenditure |
|----------------------|-------------|---|
| Bangladesh*** | 1.9 | 8.6 |
| Burma* | 1.6 | 12.2 |
| Fiji** | 5.9 | 11.3 |
| Hongkong | 2.9 | 15.0 |
| India** | 3.0 | 9.6 |
| Indonesia** | 2.2 | 9.3 |
| Israel** | 7.8 | 6.8 |
| Japan | 5.7 | 19.1 |
| Malaysia | 7.5 | n.a. |
| Nepal | 2.6 | n.a. |
| Pakistan** | 1.9 | 5.1 |
| Papua New Guinea**** | 4.7 | 14.2 |
| Philippines | 2.0 | n.a. |
| Republic of Korea | 4.0 | 21.5 |
| Sri Lanka*** | 3.0 | 7.1 |
| Thailand | 3.9 | 20.1 |

*1977

**1981

***1983

****1979

n. a. = not available

Source: UNESCO Statistical yearbook 1985

12. If we compare the proportion of government budget allocated to higher education between conventional universities and distance teaching universities in Developing Member Countries of the Asian Development Bank, *it was* ~~we find out~~ 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 STOU was only 1.3 percent of the total higher education budget, whereas the total number of students *found* ~~admitted~~ by that ~~institutes~~ *University* was 3 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.

13. 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 capital investment in terms of 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

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 |

1 US\$ = 27.00 Baht

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

development and others. As might be guesses, 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 ~~like what we are talking about~~ 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.

14. 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 costs will be given later in this paper.

15. 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. Some of these issues will be discussed in the next section.

III. POLICIES REGARDING THE FINANCING OF DISTANCE EDUCATION

16. In the study by Lord Perry, the Honorary Director of the International Centre for Distance Learning of the United Nations~~s~~ University, there are three types of distance-learning institutions:

- (1) Founded for distance-learning primarily
- (2) Founded as conventional and now doing distance-learning
- (3) Conventional institutions developing distance-learning.

Table 3.1

How Distance-Learning Institutions Were Founded

| Region | Institutions | | | Total |
|---------------------------|---------------------------------------|---|--|-------|
| | Founded for Distance-learning Primary | 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 | 0 | 0 | 1 |
| North America | 30 | 41 | 31 | 102 |
| South and Central America | 7 | 5 | 7 | 19 |

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

17. The above table shows the worldwide picture of distance education. For Asia, of 25 institutions in the sample, 6 institutions were founded primarily for distance education.

18. For the Developing Member Countries of the Asian Development Bank, 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.

19. 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 discussions.

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 | Hongkong |
| Sri Lanka | Malaysia |
| Thailand | Nepal |
| | Papua New Guinea |
| | Philippines |
| | Socialist Republic of Vietnam |

a. Distance Education for Whom?

1. India

20. The Indira Gandhi National Open University was established in 1985 to advance and disseminate learning and knowledge by a diversity of means. It provides opportunity for higher education to large segments of the population and promotes the educational well-being of the community. 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. ^{1/}

2. Indonesia

21. In 1984, the Universitas Terbuka or UT was established by Presidential Decree. The main purposes of the UT is to increase the absorpti~~on~~^{on} capacity of higher education and to meet the need for university graduates for the sake of national development.

22. Another purposes 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 life long 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. ^{2/}

^{1/} Indira Gandhi National Open University, New Delhi, Information Brouchure, 1985.

^{2/} Ministry of Education and Culture, Information Booklet on Universitas Terbuka (Jakarta: Universitas Terbuka, 1984), p. 2.

3. Pakistan

23. The Allama Iqbal Open University was established in Islamabad in 1974, as the only Pakistan institution providing distance education at the tertiary level. The University is designed to cater for the needs of the following groups: 1/

- working adults who cannot attend formal institutions
- housebound women wishing to improve their education
- in-service teachers, to improve their teaching methods and keep them abreast of changes in curricula and syllabi
- those unable to attend formal/conventional institutions such as location (remote areas) physical handicap, or cost.

4. People's Republic of China

24 In China, T.V. 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 T.V. 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. 2/

5. Sri Lanka

25. A firm basis for the establishment of an Open University in Sri Lanka was laid down in the University Act of 1978. The educational programme is designed towards meeting national educational 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. 3/

6. Thailand

26. Sukhothai Thammathirat Open University 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.

1/ The Open University, United Kingdom, The Allama Iqbal Open University of Pakistan (Milton Keynes: the Open University) p. 14

2/ Unesco Regional Office for Education in Asia and Pacific Distance Education in Higher Education (Bangkok: Unesco Regional Office, 1983) p. 10

3/ 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. DMCs

27. In the Other Areas of the Developing Member Countries, efforts have been made to offer distance education through conventional universities. Attempts also are made to establish the distance education institution.

8. Japan

28. Japan established the University of the Air as an open university in 1985.

29. The aim of the University of the Air are: 1/

- (1) To provide working people and housewives with the chance of lifelong university level education.
- (2) To provide an innovative and flexible system of university level education open to high school graduates.
- (3) 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.

30. 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 |

31. 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.

1/ The University of the Air Foundation, The University of the Air (Chiba City, Japan: the University of the Air Foundation, 1984), p. 5

B. Who pays for distance education?

32. There are three principal sources of funds for distance education:

- (1) government
- (2) student fees
- (3) donations and others

*Korea Air and Correspondence
University*

1. Income from the government

33. From Table 3.3, it can be seen that income from the government varies among countries. Sukhotahi Thammathirat Open University and Andra Pradesh Open University seems to rely less on the government.

2. Income from student fees

34. This category of income also varies among countries. Andras Pradesh Open University relies heavily on student fees (82.04%). The Republic of Korea's KACU and Thailand's STOU rely moderately on student fees, 32 percent and 30 percent respectively. Student fees in Japan are about 20 percent. Indira Gandhi National Open University, in the beginning stage, seems to rely less on this source of income, as presented in Table 3.3.

Table 3.3
Sources of Funds for Distance Education

| Country | Year | Percentage by Source | |
|---|--------------------|----------------------|---------|
| <u>India</u> | | | |
| 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 |
| <u>Republic of Korea</u> | | | |
| Korea Air and Correspondence University | 1985 | Government | = 32.00 |
| | | Fees | = 68.00 |
| <u>Thailand</u> | | | |
| 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 |
| 1985 | Fees | = 30.86 | |
| | Others | = 50.82 | |
| <u>Japan</u> | | | |
| 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 |
| 1986 | Government Capital | = 5.63 | |
| | Fees | = 19.12 | |
| <u>Israel</u> | | | |
| 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 |
| 1984-86 | Fees | = 27.00 | |
| | Others | = 13.00 | |

Source: From correspondence with the heads of the institutions.

Indonesia's Universities 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. Expenditures

35. 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.

(1) As STOU uses multi-media techniques, the major types of expenses are media costs. In 1984, the University spent 36.65 percent on instructional materials, 4.93 percent on audio cassettes, 2.28 percent on radio programs, 7.26 percent on TV programs, and 5.77 percent on tutorials. The multi-media cost 56.89 percent of the total expenses.

(2) For IGNOU at the beginning stage, it seems that much more capital investment is needed. Therefore capital cost in 1986-1987 fiscal year represents 69.66 percent of the total expenditure.

(3) 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 percent of the total budget.

(4) Everyman's University spent a large portion of the budget on course production. In 1985-86 fiscal year, the University spent 29.11 percent for personnel involved with course development, 13.83 percent on course operation, and 15.40 percent on printing and publishing. This indicates that the main medium used by the University is printed materials.

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

1. Thailand's STOU

TABLE 3.4
STOU Expenditures, 1981-1984

| Activities | Years | | Percentage | |
|----------------------------|---------------|---------------|---------------|---------------|
| | 1981 | 1982 | 1983 | 1984 |
| 1. Administration | 18.13 | 21.27 | 16.44 | 22.62 |
| 2. Instructional Materials | 37.55 | 40.11 | 44.05 | 36.65 |
| 3. Audio Cassettes | 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 | % |
|---|---------------|
| <u>Revenue Account</u> | 30.34 |
| 1. Administration | 1.91 |
| 2. Common Services | 4.88 |
| 3. Academic Programmes (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 |
| <u>Capital Account</u> | 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 | Percent | |
|--|---------|---------|
| | 1985 | 1986 |
| Salaries | 23.04 | 23.91 |
| Administration expenses University of the Air | 19.86 | 21.06 |
| 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. <u>Department of Studies</u> | | |
| 1.1 Administration Coordination, Follow-up, Production and General Expenses | 7.09 | 7.23 |
| 1.2 Courses-personnel | 30.94 | 29.11 |
| 1.3.1 Development and Research | 1.03 | 1.38 |
| 1.3.2 Production of Study Aids | 2.83 | 4.01 |
| 1.3.3 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 |
| General Reserve | 1.29 | 1.01 |
| Total | 100.00 | 100.00 |

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

IV. COSTS OF DISTANCE EDUCATION

A. The Media and the Cost

37. In general there are two major approaches in the development of distance teaching system: the Uni-Medium or Single Medium System and the Multi-Media or Mixed Media System. 1/ The extermural studies programmes of various universities in Australia which use printed materials exclusively are a good example of the Single Medium System. Most open universities employ the Multi-Media System and feature printed materials as the core medium. This is true of the Open University in the U.K., Sukhothai Thammathirat Open University in Thailand, and other open universities in the Developing Member Countries. In Thailand, STOU employes the following media.

(1) Main media: correspondence texts, textbooks, workbooks, radio and television broadcast handbooks, etc.

(2) Support media: radio and television broadcasts, including broadcasting of videotapes, and course materials recorded on cassette tapes, and

(3) Tutorial and counselling sessions at various regional and local study centers.

38. In India, The Indira Gandhi National Open University uses "printed material, radio and television broadcasts, audio and video cassettes". In addition, there will be personal contact programmes 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". 2/

39. At the Universities Terbuka, Indonesia, UT students are required to carry out the following activities. 3/

- a. To study the written materials which have been programmed as their main activity.
- b. To interact with their tutors.
- c. To interact with their study groups.
- d. To listen and watch the audio and audio-visual programs which are intended to supplement or support the written materials.

1/ Wichit Srisa-an, Distance Education: STOU Approach (Thailand: STOU press, 1986), p. 14

2/ Indira Gandhi National Open University, New Delhi, Information Brouchure, 1985.

3/ Ministry of Education and Culture, Information Booklet on Universitas Terbuka (Jakarta: Universitas Terbuka, 1984), p. 4

- e. To practice and conduct laboratory activities.
- f. To take unit tests and the semester final examinations.
- g. To conduct research and prepare a thesis relating to the principal program.

40. In Pakistan, Allama Iqbal Open University uses multi-media techniques. The main components of its teaching system are: 1/

(1) correspondence packages, which include self learning printed texts and supplementary study material.

(2) Radio and television broadcasts specially prepared for distance learners.

(3) Tutorial instruction through correspondence and face to face learning at study centers, where possible, with workshops where appropriate.

(4) Course assignments as an instrument of teaching and continuous assessment.

41. Other open universities are also using multi-media. In the survey by Lord Perry, 93% of the programmes of distance education in Asian used correspondent materials. Forty-five percent of the programmes used residential schools. In Australia, 99 percent of the programmes used correspondent materials, 70 percent used audio cassettes, and 51 percent used residential schools. The data are presented in Table 4.1.

1/ Allama Iqbal Open University, The First Ten Years, 1975-1985
(Islamabad, Pakistan: Printing Packaging & Paper Converting
Corporation, 1986), p. 7

TABLE 4.1

42. Number of programmes using various transmission methods as percentage of the total number of programmes.

| % of Programmes Using | Region | |
|-----------------------|--------|-----------|
| | Asia | Australia |
| Correspondence | 93 | 99 |
| Telephone | 7 | 34 |
| Regional Services | 26 | 40 |
| Study Centre | 31 | 31 |
| Radio | 36 | 11 |
| T.V. | 19 | 6 |
| Audio | 38 | 70 |
| Video | 17 | 42 |
| Practical Work | 33 | 48 |
| Kits | 0 | 44 |
| Residential Schools | 45 | 51 |
| Other | 2 | 15 |

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

43. From this table, one can assume that the cost of distance education of any institution varies with the types 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

44. In our previous study, ^{1/} we have conceptualized distance education as consisting of the following systems:

- (1) admission and registration system
- (2) production system
- (3) delivery system

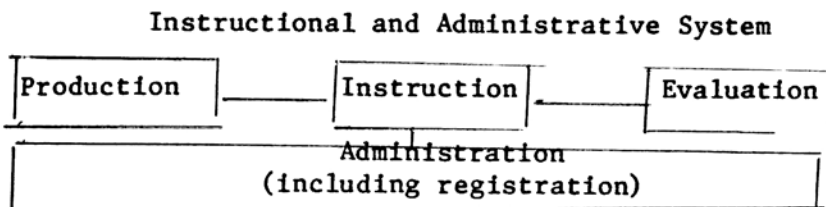
^{1/} Wichit Srisa-an and Tong-In Wongsotorn, "The Management and Economics of Distance Education: The Case of Sukhothai Thammathirat Open University" in Wichit Srisa-an, Distance Education: The STOU Approach (Thailand: STOU Press, 1986), p. 44

- (4) instruction system
- (5) examination system
- (6) administration system

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

- (1) production system (p)
- (2) instruction system (i)
- (3) evaluation system (e)
- (4) administration system (a)

46. The chart illustrating the total system is provided below.



2. Cost of the total system

47. 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

48. Therefore, the total cost is the summation of the above categories.

$$TC = TFp + TFi + TFe + TFa + TVp + TVi + TVe + TVa$$

49. 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

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

C. Cost Components

1. Capital Costs

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

TABLE 4.2

Facility Needs for Production and Instruction

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

C. Cost Components

1. Capital Costs

50. Capital costs consist of land, buildings and equipment. For production and instruction systems, capital costs vary with the types of media, as shown in Table 4.2.

2. Operational Costs

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

TABLE 4.3

Operation 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 centre |
| Video | Producer's time Tapes | Staff's time at the study centre |
| 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

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

1. Private Costs

53. There are two types:

(1) 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. ^{1/} This is low compared with

^{1/} Ibid., p. 55

some conventional universities, and much lower compared with private universities and colleges in Thailand. Cost comparison is provided in the next section.

- (2) Personal expenses of students are composed of the following:
 - (a) Travel expenses for tutorial sessions, final examination and residential schools.
 - (b) Other expenses, such as costs of make-up examinations and sending letters and requests to the university.

54. 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

55. 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.

56. 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 programme are expected to function as good citizens of the country.

V. COST - EFFECTIVENESS

57. 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 or set of outcome." 1/ 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." 2/ Accepting the effectiveness of education of both system, we look into the costs and the efficiency. As Chang and his colleagues stated, "more specifically, efficiency in out case can be defined as effective instruction at the lowest possible costs - cost-effective instruction in a literal sense." 3/

58. 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

59. 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: 4/

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.

60. The experience of Sri Lanka also indicates the low cost of the Open University of Sri Lanka. 5/ 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

- 1/ Henry M. Levin, Cost-Effectiveness: A Primer (Beverly Hills, California: Stage Publications, 1985), p. 17
- 2/ Greville Rumble, "Economics, eds., Distance Teaching for Higher and Adult Education (London: The Open University Press, 1981), p. 225
- 3/ T. M. Chang, et.al., Distance Learning: on the Design of an Open University (London: Kluwer - Nighoff Publishing, 1983), p. 133
- 4/ Distance Education of Higher Learning in China, a draft paper presented at the Unesco Workshop in Distance Education, Bangkok, August 1983, p. 4
- 5/ The Ministry of Higher Education, An Introduction to the Open University of Sri Lanka (Colombo: The Ministry of Higher Education, 1980), p. 6

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.

61. 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 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. 1/

62. 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 enquiry, 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". 2/

63. 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

| | AIOU | Conventional Institutions* | Difference |
|--------------|------------|----------------------------|------------|
| Intermediate | Rs. 3930/- | Rs. 5688/- | 44.72% |
| B.A. | Rs. 5240/- | Rs. 7250/- | 38.35% |

* Based on estimated 1978 figures given in the 5th Five-Year Plan, corrected for inflation (cautious) 25%.

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

B. Thailand's Sukhothai Thammathirat Open University

1. Institutional cost per head by discipline

64. 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.

1/ Correspondence with the Korea Air and Correspondence University.

2/ 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) |
|--|--------------------|
| <u>Selective-Admission Universities</u> | |
| 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 & Documentation | 18,308.84 |
| 9. Mathematics and Computer Science | 16,633.22 |
| 10. Others | 15,208.63 |
| 11. Business Administration & Commerce | 14,942.07 |
| 12. Humanities | 14,332.56 |
| 13. Social-Behavioral Science | 13,435.97 |
| 14. Law | 11,970.81 |
| <u>Open Universities (Ramkhamhaeng & STOU)</u> | |
| 1. Business Administration & 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.

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

66. 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 (1) | Open (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

67. 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.

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 (2341 Baht) As % (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 Tipsoewankul and Thanachai Yomchinda, Analysis of Expenditures, Sukhothai Thammathirat Open University, 1980-1983 (Mimeographed).

3. Cost per graduate

68. An interesting comparison is the cost per graduate. How much does 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 3, a three-year program is 4.5 and a four-year program is 6. The calculation shows that the average cost per graduate is lower in STOU than in other universities, similar to the operating cost per head.

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 (7023 Baht) As % (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).

4. Private Costs

69. We have classified private costs to be borne by students into two categories: (1) expenses for tuition fees and study materials, and (2) 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:

1. 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.
2. Compared with government selective admission universities, the average cost per student for books and study materials at STOU is lower, but higher than the average costs of many private colleges and universities.
3. We ^{can} ~~can~~ conclude from this comparison that private costs of the students in the open university is lower than conventional universities. Since the distance-teaching university provides homebased, 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.

Table 5.6

STOU Private Cost Per Head As Percentage of Cost Per Head
Of Other Universities, 1982

Unit = Baht

| | Tuition and Fees | | Book and Materials | |
|---|--------------------------------------|--------------------------|--------------------------------------|--------------------------|
| | Per Head in Other Universities | STOU Per Head as % | Per Head in Other Universities | STOU Per Head as % |
| | (1) | (2) | (1) | (2) |
| Government Institutions | | | | |
| 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 |
| Private Institutions | | | | |
| 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.

5. Opportunity Costs

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

C. Other Countries

71. 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 | £1111 |
| C. Average recurrent cost per graduate | £2719 in 1973 £1842 in the long run | £4049-£4801 |
| D. Resource cost per equivalent undergraduate | £272 minimum | £1647-£1947 |

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.

72. External programmes 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 programmes of the Institutes. He concluded, "Distance education is again shown to be more economical to operate than the attending mode".^{1/} The comparison is provide in Table 5.8.

^{1/} Sharma, R. D. "The Economics of Distance Education in an Integrated Tertiary Education System" in James C. Taylor, Judith A. Timmins, and Vernon White, 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 programmes 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. James C. Taylor, Judith A. Timmins and Vernon J.
White, editors. (Australia: Darling Downs Institute Press,
1984), p. 76

VI. GUIDELINES FOR FINANCING DISTANCE EDUCATION

73. 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 3 types of facilities for consideration: (1) existing private facilities, (2) existing government facilities; and (3) special facilities for the institution. For operating costs, we look into 3 components: training costs, personnel costs, and material and media costs. From these categories, we will discuss guidelines as presented in Table 6.1.

1. Capital Investment

74. 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.

75. 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.

76. 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

| | Administration | Production | Instruction (Delivery) | Examination |
|---------------------------|-----------------------------|--|---|---------------------|
| Capital: | | | | |
| (a) Existing | - | - Local Printers | - Local Hotels - Schools | |
| Private Facilities | | - Local - Production Centres | - Universities - Hospitals - Schools | |
| (b) Existing | | | - Universities - Post Office - Radio Station - TV Station Hospitals | Study Centres |
| 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 | - Examina- tions |

B. Operating Costs

77. 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.

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

79. 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

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

81. 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.

82. 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 born by students. The cost sharing pattern is provided in Table 6.2.

TABLE 6.2

Pattern of Cost Sharing in Distance Education

| Costs | Beareres |
|-----------------------------------|-------------------------------------|
| Capital | Private Contribution/ Government |
| a. Existing Private Facilities | Government |
| b. Existing Government Facilities | Government/Students |
| c. Special Facilities | |
| Operation | |
| d. Training Costs | Government/Students |
| e. Salaries | Government |
| f. Materials | Students |
| g. Recurrent | Students |

VII. LOAN SYSTEM FOR DISTANCE EDUCATION

83. 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

84. 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 specific, such as loans for the installation or the improvement of the satellite or broadcasting facilities.

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

B. Institutional Loans for Operation Costs

86. 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.

87. 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

88. 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 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 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. Multimedia 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. Cooperation with other agencies is materials produced, the government should make capital investment for the improvement of production facilities in order to enhance the quality of instruction. 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.

BIBLIOGRAPHY

- Chang, T.M., and others. Distance Learning: on the Design of and Open University. Bost: Kluwer-Nijhoff Publishing, 1983.
- Holmberg, Boije. Status and Trends of Distance Education. New York: Nichols Publishing Company, 1981.
- Kaye, Anthony and Rumble Greville, eds. Distance Teaching for Higher and and Adult Education. London: The Open University Press, 1981.
- Levin, Henry M. Cost-Effectiveness: A Primer. Beverly Hills: Sage Publications, 1985.
- Psacharopoulos, George. Higher Education in Developing Countries: A Cost-Benefit Analysis. World Bank Staff Working Paper No. 440, Washington, D. C. November 1980.
- Sharma, G.D. Institutional Costs of University Education. New Delhi, March 1980.
- Srisa-an, Wichit. Distance Education: The STOU Approach. Thailand: STOU Press, 1986.
- Stewart, David; Keegan Desmond; and Holmberg, Borje; eds. Distance Education: International Perspective. New York: St. Martin's Press 1983.
- Taylor, James C; Timmins, Judith A., and White, Vernon J.; eds. Challenges Facing Distance Education. Australia: Darling Downs Institute Press, 1984.
- Unesco Regional Office for Education in Asia and the Pacific. Distance Education in Higher Education. Bangkok: Unesco Regional Office, 1983.
-
- . Bulletin of the Unesco Regional office for Asia and the Pacific, No. 26, Distance Education in Asia and Pacific, December 1985.
-
- . Statistical Yearbook various issues.

