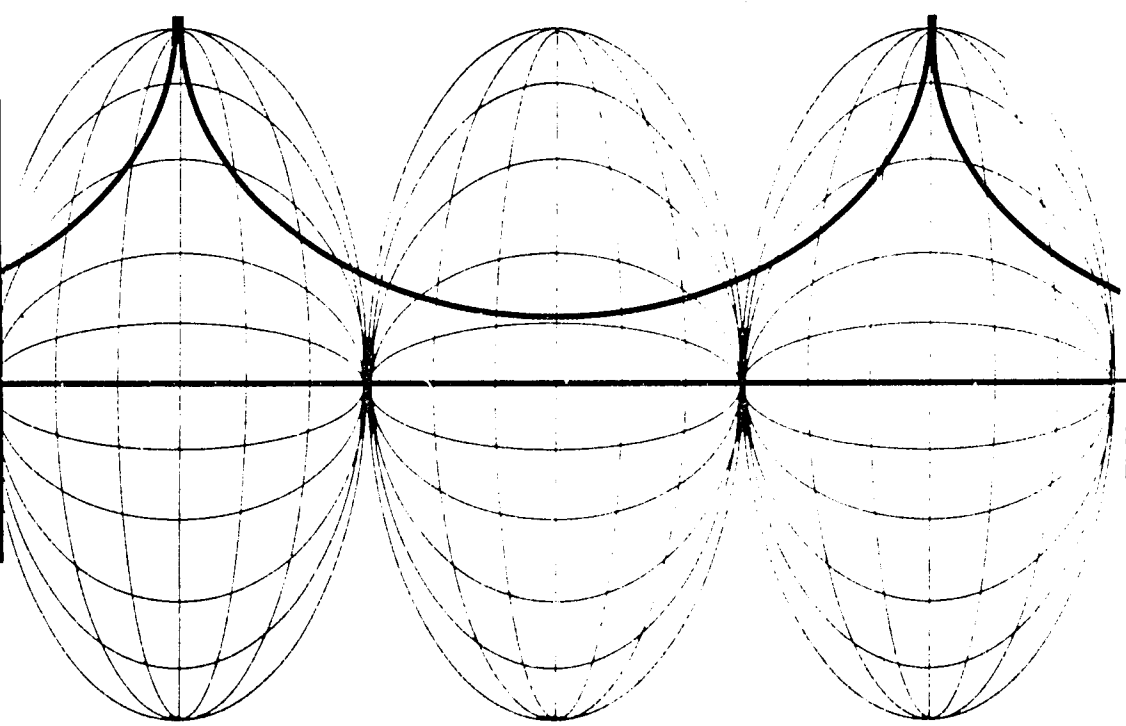
PN-ABH-862
7-1439



B • R • I • D • G • E • S

Basic Research and Implementation in DevelopinG Education Systems

CASUAL PAPERS

Paper not formally reviewed October 1990

THE PRIVATE COSTS OF TEACHER TRAINING THROUGH DISTANCE EDUCATION IN INDONESIA

by Sulistiorini and H. Dean Nielsen

INTRODUCTION

The training of teachers through distance education is a growing phenomenon in the developing world. Guthrie (1983) documented 54 cases of distance training of teachers; Coldevin (1988) shows how major shortages of qualified teachers throughout the developing world has prompted governments to set up distance education programs for teacher upgrading or certification, initially as "stop-gap" measures but now increasingly as a permanent solution to the teacher shortage problem. Prominent among the advantages of such programs are the economies they present. Because they do not require lecture halls, a permanent teaching force, and replacements for the teachers who are in training, distance education programs have been considered by governments to be a relatively inexpensive means of training teachers. They are also assumed to be economical for the teachers, who, because they are trained in place, continue to draw their full-time salaries.

Studies to test these assumptions about the costs of distance teacher education projects have appeared only recently. A current review of 14 projects of distance teacher education has shown that for those projects which have attained economies of scale (i.e., enrolment in the thousands) the unit costs are between 1/10 and 2/3 those of conventional programs (Nielsen, 1990). However, most of these studies have only considered the budgeted or institutional costs of the programs. The costs born by the students have rarely been considered. The importance of this is becoming increasingly clear. Whereas students in distance education programs are in a position to maintain their regular jobs and income flows (Coldevin and Naidu, 1989), such programs are more likely those at more conventional institutions to charge fees and use other forms of cost recovery (Nettleton, 1989). In addition, it may be that there are unanticipated **opportunity costs** associated with distance education, since teachers in them have to study during time often used for pursuing extra income. Student or private costs may thus constitute a significant portion of the real costs of distance education programs, and as such they may also have an important bearing on private **demand** for such programs (Tsang, 1988). Choices about enrolment can be influenced both by the actual costs and the expected costs of a program. Remaining in the program may be a function of the difference between the two.

NOTE: This paper is based on collaborative research conducted by the Indonesian Open University and the Institute for International Research, Inc. (USA) under Project BRIDGES which was coordinated by the Harvard Institute for International Development and funded by the US Agency for International Development.

Distance education programs are generally aimed at teachers who are geographically isolated or otherwise hindered from reaching more conventional programs. Does the cost structure of such programs take into consideration the economic difficulties of teachers located in marginal areas or does it in some way mitigate against their participation?

The purpose of this paper is to investigate these issues in the context of teacher training by the Open Learning University of Indonesia. More specifically it will be to describe the costs, both actual and expected, borne by students in secondary teacher certification courses in that country, and to determ ne relationship between these costs and student background characteristics. The first section of the paper will describe the actual expenditures made by the students during the course of a year, the second will describe the non-monetary costs felt by them as they attempt to pursue independent self-study, the third will relate the size of actual expenditures of various kinds with student background characteristics, the fourth will compare actual expenditures with what students had expected to spend, and the last will briefly discuss student financial aid.

The analysis is based on data collected from 241 science and language teacher trainees, those among the 454 attached to 16 (of the programs's 32) regional centers who received mailed questionnaires. The centers were stratified as small, medium and large. In order for there to be roughly 100 respondents in each size category, some additional respondents were contacted personally and given the questionnaire by interview, adding another 70 to the sample. The total sample was 311. The questionnaire asked students to indicate their actual expenditures on various items, their foregone income, their socio-psychological costs (e.g., stress, loss of leisure time, etc.), the amounts they had expected to pay, and any financial assistance received.
[some weeded out -- Diploma and degree programs]

In general two kinds of approaches were used in the analysis of these cost data, first a descriptive approach using mean scores, standard deviations and minimum/maximum scores, and second a explanatory approach, using analysis of variance, to determine the relationship between expenditures and background characteristics. If there was a significant difference in expenditures between groups of trainees, the nature of the difference was explored.

ACTUAL EXPENDITURES

As with other universities, the Open University requires students to pay certain general fees, including: 1) a registration fee, Rp 5,000 per semester; 2) a tuition fee of Rp 40,000 per semester for up to 12 credit hours and of Rp 60,000 for between 13 and 18 credit hours; and 3) a fee for any repeat examination taken

at the rate of Rp 2,500 per course.[1] The university also makes available for purchase by the students modules (programmed texts) and an official magazine, but the students are not required to purchase them. In addition, there are up to three optional tutorials per semester held at regional (provincial-level) tutorial centers and mandatory final examinations. When attending tutorials or examinations students have to pay for their own transportation and, in case they live more than a few hours from the center, their expenses related to overnight lodging. Finally, some students opt to attend extra tutorial sessions which are not sponsored by the university and which charge a fee. For those who do, this represents another category of expenses.

Our concept of actual student expenditures includes all moneys spent by participants in open university courses during one calendar year, both for academic and for non-academic (related incidental) expenses, both required and optional. Table 1 summarizes such actual expenses for the year 1986.

From the table it can be seen that the general tendency is for students to register for two semesters (out of the three offered) during 1986/87, since the mean level of registration fee paid (Rp 9,000) is almost twice that for a single semester. This is also evidenced by the mean level of tuition fee payment (Rp 70,000), which is almost double that for up to twelve units in a single semester (Rp 40,000).

It also appears that students paid on the average Rp 43,000 for new modules, although many did not pay anything, preferring to buy used modules, borrow them from friends or photocopy them. The variation in expenditures for new modules was very wide, ranging from zero to Rp 126,000. In addition to modules, it appears that there was some money spent on other learning materials, particularly reference books, the average spent being Rp 9,000 and the maximum Rp 100,000.

Another expense which was significant was that for transportation related to university course work (travelling to regional centers for information, tutorials and examinations). Students spent on the average Rp 23,000 for this, and again the variation was wide, ranging from zero to Rp 210,000.

A number of students (about 25%) also reported having foregone income (from extra jobs, tutoring, etc.) in order to participate in UT courses. The extreme case was that of someone who reported

---

[1] As of January 1989 the exchange rate between the Indonesian rupiah and the US dollar was as follows: US $1 = Rp 1735. Thus the standard fees in terms of US dollars are as follows: registration fee, $2.88; tuition for up to 12 credit hours, $23.00; tuition for 13-18 credit hours, $34.50; fee for repeat exam, $1.44.

sacrificing Rp 600,000 in one year. The average (including the 75% who reported zero) was a much more modest Rp 24,000, still one of the highest "expenditure" categories.

One way to summarize the findings reported in Table 1 is to group the cost factors into categories or composite variables, as follows:

Composite Var	Consisting of
FEES:	Registration fee, Tuition fee, Repeat exam
MATERIALS:	New modules, Used modules, Dictionary, Reference books, Photocopying, Magazine
SUPPLIES:	Stationery, Pens, pencils, etc., Calculator
COMMUNICATIONS:	Postage, Telephone calls, Telegrams
ROOM & BOARD:	Lodging, Food and related expenses
TRANSPORTATION:	Transportation
EXTRA TUTORIAL:	Extra Tutorial
FOREGONE INCOME:	Foregone Income

Table 2 shows the mean values of these composite variables which were constructed simply by adding the values of the cost factors in them. Looking at the FEES component, which is the one where average expenses are the highest (Rp 81,000), it is apparent that the minimum expenditure for the year is one registration fee and one minimum tuition fee (Rp 45,000). Since these are the only compulsory fees, this also represents the minimum total annual expenditure. At the other end of the range, there are those who spend up to Rp 187,500 in fees, which could be incurred by a students registering three times during the year at the high (13-18 credit hour) rate or two times at that rate plus one at the lower rate as well as three repeat examinations. As seen in the table, the average student load is equivalent to one time registration at the high rate plus some repeat exams or two times registration at the lower rate.

The composite which has the next highest level of expenditure is MATERIALS (Rp 61,000). As observed above, because all the items in this category are optional, there was a wide variation in expenditure levels, ranging from zero to Rp 210,000. ROOM & BOARD, TRANSPORTATION, and FOREGONE INCOME are also categories in which expenditure was relatively high and the variation was wide, especially in the case of FOREGONE INCOME, as mentioned above. Relatively little was spent on the average by the students on SUPPLIES, COMMUNICATIONS and EXTRA TUTORIALS.

Average total annual expenditure in this table is the same as in the previous table, as is the total expenditure per credit hour. Added is the estimated total expenditure per cycle (the full program to graduation). The latter two summary figures bear closer examination. Not only is the amount a student pays optional, but the number of units he/she takes per year is also. There were

students in our sample who took as few as 4 credit hours in a year and as many as 40. It is not necessarily the case that those who pay the least during a year will end up paying the least for a entire course if they only take a few units. For example, someone who takes only four credit hours per year would need over ten years in order to finish the diploma course in education (which requires 38-47 credit hours for graduation). Assuming the minimum cost per year remains basically Rp 45,000, this person would need to pay at least Rp 450,000 for the total course. On the other hand consider the person who takes 40 units in a year. That person could conceivably finish the diploma course with that number of units and could do it by paying a minimum of Rp 195,000 (3 semesters * Rp 65,000).

The average student in our sample spends about Rp 212,000 per year and takes about 20 credit hours. This person will finish the diploma program in about two years and the degree program in a little less than 2 1/2 years. Assuming that prices stay more or less constant over the next few years this would mean paying on the average about Rp 424,000 for the diploma course and Rp 520,000 for the degree course.

Approaching this from another direction, we calculated the total expenditure per credit hour for each student. The average turned out to be around Rp 13000, with the minimum just over Rp 2000 and the maximum around Rp 60,000. At this rate (and assuming no changes in prices) the lowest spenders would need about Rp 80,000 to finish the diploma course and around Rp 100,000 to finish the degree course; on the other hand the highest spenders would require over Rp 2,000,000 to finish the courses. The average private expenditure (assuming a constant Rp 13,000 per credit hour) would be around Rp 550,000 for the diploma course and around Rp 640,000 for the degree course.

Thus, it cannot be said that the course is cheap or expensive from the students point of view. It appears to be cheap for some and expensive for others. The way to make it cheap is to pay the minimum (nothing for learning materials, travel, etc.) and move at a fast rate. (Without books and tutorials and with heavy loads, however, the risk of low achievement or failure is relatively high.) The expensive route would be to buy all of the materials, attend the tutorials (even extra ones), give up time devoted to gaining extra income, and concentrate on only a few units at a time. This would help to ensure a high course pass rate, but the average participant would have a difficult time covering the cost since the average monthly income of secondary school teachers (1986 data) was only about Rp 126,000 (lower secondary) to Rp 148,000 (upper secondary).

Cheap or expensive can also be considered in relation to other programs. A recent comparative study, also conducted at the Indonesian Open Learning University (Nielsen, Djalil, et al., 1990)

shows that although institutional costs for training teachers at the open university are about 1/3 those for conventional faculties and institutes, the private costs (including foregone income) are actually about 30% higher for the distance education.

NON-MONETARY COSTS

Not all of the costs born by UT students can be put into monetary terms. Most UT Faculty of Education students are practicing teachers, who are married and have children. Taking the time to work on university courses represents quite a sacrifice for some of them in terms of disruption of family life, decline in work effectiveness, loss of leisure time, disruption of social, political and religious activities, and increase in levels of anxiety and stress. We asked the respondents whether they bore any of these social costs and, if so, whether such costs might push them to the point of dropping out. The results are shown in Exhibit 1.

The exhibit clearly shows that these costs were felt by a significant number of students--between 40-50% for most items. Not surprisingly, the factor felt by the most is **disruption of family life** (52%); this is followed by **decline in general well-being** (49%), **decline in work effectiveness** (42%), **emotional stress** (41%), and **loss of leisure time** (38%). The factors related to spiritual life and social/political status only applied to around 20%.

As to whether these factors prompted a decision to drop out, Exhibit 1 shows that for the individual factors this was only the case for only 5% or fewer. However, a further analysis reveals that about 37 students (about 12% of the sample) mentioned at least one of the factors as a reason for the decision to drop out. Thus, although the none of these costs was felt keenly enough to prompt high levels of drop out, the group of costs factors were felt by a majority of the students and many were seriously bothered by them.

RELATIONSHIP BETWEEN EXPENDITURES AND STUDENT BACKGROUND CHARACTERISTICS

In this section we relate student expenditures to student background characteristics. Our interest was to see if we could explain, at least in part, the extremely wide variation in expenditures. The background variables that entered our study were:

- -Student Sex
- -Student Marital status
- -Total monthly income (less than $50 to more than $300)

-Type of secondary school certificate (academic, technical)
-Extent of previous higher education (none, 1 year, 2 years, 3 years)
-Highest post-secondary degree earned (Diploma 1, Diploma 2, Diploma 3 or equivalents)
-Current program of study (Diploma/Indonesian, Diploma/Science, BA/Indonesian, BA/Science (Biology)
-Year of initial UT registration
-Location of UT study center
-Size of UT study center (large, medium, small)
-Location of school where trainee teaches (urban, semi-urban, remote)

Our approach to this assessment was to conduct one-way analyses of variance (ANOVA) with the cost factors mentioned above as the dependent variables and the above student background characteristics as the independent variables. For those analyses where there was a significant difference between groups of students a multiple comparison test was used to show which groups were significantly different from which. Table 3 has been created to show which ANOVAs produced significant between-group differences (F-tests) and the magnitude of those differences.

Table 3 reveals some interesting patterns. Although in an overall sense most of the relationships between background and expenditures are not significant, some categories of expenditure are rather heavily influenced by background. Take, for example, learning materials. Group differences on this variable are significantly different (all at the .001 level) for program, previous higher education and highest post-secondary attained. With respect to program, the multiple comparison test shows that those in the Degree program in the Indonesian language spent significantly more on materials (Rp 72,000) than those in the Diploma program in the Indonesian language (Rp 50,000) and those in the Diploma program in Science (Rp 55,000). It appears as if those in this degree program feel more of a need than the others to have their own reading and enrichment materials.

With respect to the other two significant background variables, previous higher education and highest post-secondary degree, the pattern is as follows: those who spent three years in higher education spend more (Rp 69,000) than those who have spent no time (Rp 47,000) or just one year (Rp 52,000); those who had received the diploma 3 (or equivalent) spent more (Rp 69,000) than those who received the diploma 1 (or equivalent). The findings on all three background variables are consistent: those who are involved now or have been involved in the past in higher level courses or programs are those who spend the most on learning materials. The reasons for this are not yet clear, but it seems likely that they are more motivated and committed to their fields

and thus want to have their own materials or personal library. In addition, they are working on degrees that would qualify them to teach high level courses themselves. Perhaps they feel having their own set of materials will help them in this.

Of course, one might also hypothesize that those pursuing the higher level courses are those who have the highest current income and that it is really the higher income that is allowing them to purchase more materials. Whereas there may be some truth in this, monthly income does not appear in our analysis as being related to expenditures on this **or any of the other cost categories.**

The ROOM & BOARD composite variable is also related to three background characteristics: namely, location of the trainees school ($p<.000$), sex ($p<.01$) and type of secondary school ($p<.05$). Those who teach (and presumably live) in relatively remote areas spend almost three times more for room and board than those who teach (and presumably live) in urban areas (Rp 27,000 compared to Rp 9,600); those who teach (and live) in semi-urban areas spend over twice as much as those who teach (and live) in urban areas (Rp 22,000 compared to Rp 9,600). This is understandable since UT regional centers are located in urban areas. Many of those who come from remote areas to attend tutorial, take exams and settle registration apparently need to pay for overnight accommodations, while obviously those who already live in the city need to pay very little--perhaps only for a few meals. Those who come from semi-urban areas appear to have many among them who have to pay for overnight accommodations, but since they live closer to the big cities, they probably have more chance of staying with friends/relatives or going back home at night. Along another line, males tend to put out more for room and board than females (Rp 28,000 compared to Rp 22,000). In circumstances where one needs to stay overnight away from home, females in Indonesian are more apt to arrange for home-stay with friends or relatives than males who have more freedom in deciding where to stay, including hotels or hostels. Finally, those who graduated from technical secondary schools tend to pay more for room and board than those who graduated from academic high schools (Rp 23,000 compared to Rp 16,000). The reason for this is unclear, but it may be the case that technical school graduates are more likely than academic school graduates to be currently located in remote or semi-urban locations.

Other cost variables are related to two, one or no background characteristics. That related to two variables is communications: related to location of center and location of trainees' school (those from the Island of Timor spend two times more on the average than those from anywhere else and those who teach in remote area schools pay twice as much as urbanites). Those related to one are transportation (related to location of trainee's school) and extra tutorial (related to the location of the center). Not surprisingly, those who teach in remote areas spend almost three

times more for transportation than those who live in urban areas (Rp 29,000 compared to Rp 11,000), whereas those who live in semi-urban areas spend about 2 1/2 times as much as urbanites (Rp 27,000). Spending for extra tutorials seems to be function of whether they are available at a study center (in many place they are not) and how much is charged. The most is spent in Manado, North Sulawesi (Rp 16,000) and the least in Pekanbaru, Kupang, and Kendari (Rp 0), where extra tutorials apparently don't operate.

Looking at Table 3 in another way, it is readily seen that one particular variable is related to more cost factors than any other; namely the location of the school where the trainee teaches. This background variable is related to communications, room & board, and transportation. In all cases it is those who teach (and presumably live) in the remote areas that are paying more than those who work and (presumably live) in the urban areas. This variable is also related to the TOTAL EXPENDITURES measure, and not surprisingly the biggest difference is between those in the remote areas and those in the urban areas (Rp 234,000 compared to Rp 186,000). Another way to see this is that those in remote areas spend, on the average, Rp 15,000 per credit hour, while those in urban areas spend somewhat less than Rp 11,000.

Two final observation about this analysis: first, none of the background variables are related to the amount spent on fees. This is quite simply a reflection of the fact that fees are standard for everyone. Second, monthly income does not relate UT expenditures. This seems to imply that it is not so much the size of a person's income that makes a difference on how much he/she spends on UT studies, but more the level of the course one is taking (degree students pay more for materials than non-degree) and a person's work/living place, those in remote areas pay more than the others (especially urbanites) for the course as a whole. This finding should be of concern to those who consider distance education programs to be particularly suited for those who live in isolated and hard to reach areas. To be sure higher education is now finally available to them in Indonesia, but at cost that is higher than that for those of more advantaged areas.

RELATIONSHIP BETWEEN ACTUAL AND EXPECTED EXPENDITURES

Respondents were asked to indicate whether the amount that they actually paid for a certain cost factor was higher than they expected. Exhibit 2 graphs the percent who answered "yes" for each factor. As can be seen from the graph, **new modules** were considered more expensive than expected by fully 42% of the sample. **Transportation** was considered more expensive than expected by almost 1/3 of the sample (30%); **tuition** and **registration fees** by about 1/4 (28% and 22%, respectively). The only other variables above 10% were **references, postage, lodging, unusual costs (related to accommodations) and foregone income.**

In order to understand the basis for student assessments that certain costs were higher than expected, we hypothesized that this phenomenon might be related to two kinds of factors: a) the actual amounts a person paid for these costs; or b) the remoteness of the person's work place (under the assumption that they had less opportunity than the others to acquire accurate advance information).

We tested the relationship between the higher than expected costs and actual costs through the use of analysis of variance. It turned out that those who felt they were paying more than expected for **new modules** actually did spend significantly more on this factor than those who did not (Rp 53,000 vs Rp 38,000). Likewise for **transportation:** those who felt they were spending more than expected actually did spend over twice as much on this factor as those who did not feel so (Rp 39,000 vs 16,000). The opposite was true for **tuition.** Those who felt they were spending more than expected actually spent significantly **less** than those who did not feel so (Rp 64,000 vs Rp 72,000). With respect to **registration fees**, there was no difference between groups on what they actually spent.

Thus, for two of the costs considered more expensive than expected by a high proportion of students, new modules and transportation, there was a positive relationship with actual costs; for one, registration fee, no relationship; and for one, tuition, a negative relationship. The tuition variable does present an interesting puzzle. The amount of tuition in a semester depends at least in part on the number of credit hours one takes. Perhaps students were reacting to higher than expected costs by taking few credit hours (thus reducing costs). They could not do the same with registration fees, since it was the same no matter how many credit hours they took.

The relationship between remoteness of work place and the perception of higher than expected cost was determined through a simple correlation analysis. The correlation coefficients were as follows:

Pearson Correlation Between Work Place and

New Modules	.02
Transportation	.14 *
Tuition	.08
Registration fee	.02

(* Significant at the .01 level.)

It seems clear from the above that remoteness of location or isolation is not a major factor in whether a person finds costs to be higher than expected, except in the case of the transportation variable. In the case of transportation, the correlation is

probably accounted for by the fact that students in remote areas did spend much more than others on transportation. The hypothesis that the isolation of students in remote areas formed an information barrier than created unrealistic expectations was not supported by the data.

SCHOLARSHIPS

Open University students, like those from conventional universities, did qualify for and receive government scholarships during 1985/86 and 1986/87. Such scholarships provided recipients with free tuition. Other costs, including registration fee, books, materials and transportation, were still born by the recipient. In our sample we found 39 (about 14% of the total) had received scholarship support. The amounts received were as follows:

Amount received	Percent
Rp 60,000	13%
80,000	36
100,000	10
120,000	33
140,000	8

To get some idea concerning how these scholarships were distributed we examined the background characteristics of the recipients in our sample. As far as study centers were concerned, about 31% were from two major centers on the island of Java; another 41% were from large centers on the island of Sumatera; the rest were scattered across smaller centers on Kalimantan, Sulawesi and various eastern islands. Considering the size of the study center, 51% were from large, 31% from small and 18% from medium-sized centers. The location of the school at which the student worked was also considered: it turned out that there was very little difference between urban, semi-remote and remote areas in terms of the their proportions of scholarship recipients--they were all in the 31 to 36% range.

With respect to field of study, fully 77% were from one of the Diploma programs (Science or Indonesian); whereas only 23% were from the degree programs. Broken down further we see that 41% were from the Diploma Science program, 36% from the Diploma Indonesian program, 18% from the Degree Indonesian program and only 5% from the Degree Biology program. This breakdown reveals the fact that during this period the government was especially concerned with overcoming the shortage of trained science teachers at the junior secondary school level (which is where Diploma-trained teachers are assigned).

With respect to personal characteristics: 59% were male and 41% female (but of the females in the sample 16% received

scholarships whereas of the males 13% did so); 74% were married (but of those single 24% received scholarships whereas of those married only 12% did so); 60% were from general schools and 40% from technical. Concerning monthly income: 73% of the recipients were from category two (Rp 75-149,000 per month); 16% from category three (Rp 150-300,000 per month); 11% were from category one (less than Rp 75,000 per month); and none were from category four (more than Rp 300,000 per month). Looking at it another way, of those in category one, 19% received scholarships; of those in category two 16% received them; of those in category three 10% received them and of those in category four none received them.

Summarizing, it can be seen that scholarship recipients tend to be from larger study centers but not necessarily among those living/teaching in an urban areas. They are much more likely to be in the diploma programs than in the degree programs and in the former, more likely to be in Science than Indonesian. They also tend to be male, married, from academic high schools and from the middle income brackets. Since the sample itself includes higher proportions of males, married and middle income students, it is also revealing to see what proportion of females vs males get scholarships as well as married vs single and middle income bracket vs lower and higher. This tells a different story: a higher proportion of females than males receive assistance, a higher proportion of singles than marrieds and a higher proportion of low income bracket than middle and higher bracket. These findings seems to show that scholarships have been used both to attract students into areas of high teacher shortage and to give higher support to those who are usually at a disadvantage, namely women and those in lower income groups.

SUMMARY AND CONCLUSIONS

This study of private costs of distance education in Indonesia was conducted in order demonstrate the extent to which this program is in fact **low-cost** from the student's point of view. In addition it was launched to address certain issues: for example, whether students feel the pinch of non-monetary costs, the extent to which their costs are higher than expected, and the extent to which background characteristics (including measures of social and economic disadvantage) are related to the amount they spend on the courses.

With respect to actual costs, the average amount paid (or foregone) by trainees, about Rp 212,000 per annum, was relatively high, at least in comparison with that paid (or foregone) in more conventional programs. However, this is not to say that it was so for all students. In fact, on all but required fees there were wide variations in the student expenditures, some students paying as little as Rp 45,000 per annum and some as much as Rp 873,000. This was mostly because students could take varying numbers of

credits and because the purchase of modules and attendance at tutorials was optional. In addition, however, costs seem to be related to certain background characteristics. Most prominent among them was the location of the participant's work place (urban vs suburban vs remote). Students paying the most were those who worked (and lived) in remote areas.

Scholarship funds have been used in order to help students cope with the relatively high costs of training. While there is some evidence that they have provided relief to disadvantaged teachers (those in lower income brackets, married, female), they have not covered a large proportion of students (19% of our sample). In more recent years the proportion on scholarship have become in even fewer.

The non-monetary costs of distant education are a concern to at least half of the students. Over half worried about the effect of the program on their family life; near half were concerned about their physical and psychological well being (stress) and about a decline in their effectiveness as teachers. A large proportion of students also felt that they had to pay more than expected for certain items, particularly for modules, transportation, and tuition. And, in fact, those who so complained about the first two items were paying far higher than average for them.

The overall picture on private costs for our sample of Open University students reveals a fairly high cost burden, both in monetary as well as non-monetary costs, higher in the remote areas than the urban, and frequently found to be higher than expected. Scholarship relief has been available, but for a small and diminishing proportion of students.

As Tsang (1988) has pointed out, private costs certainly influence the demand for programs. Although there are professional rewards for those who complete these training programs (including higher status and the possibility of promotion), they may not outweigh the costs the teachers are beginning to perceive, a possibility already confirmed by recent declines in new enrollments. In order to maintain a reasonably high enrollment level (high enough, for example, to maintain economies of scale), Open University administrators and managers of higher education in Indonesia would do well to reconsider the heavy cost load placed on the students. As government revenues increase as a result of new surges in oil prices, it would be advisable for them to consider new incentives, including reduced tuition rates, more scholarships, learning centers closer to the students' work places (to cut down travel costs) and use of local libraries or resource centers where learning materials could be pooled. In addition, better cost information needs to be made available to prospective students so that they will have not enter with misconceptions about how much they will have to pay. Finally, non-monetary costs (stress and loss of time with family, etc.) should be addressed

by the program in some way or another, perhaps establishing counselling services to help students better manage their time.

Distance education is an inexpensive means of training teachers, at least from the government's point of view. If it is not from the client's point of view, the government may end up providing a program that no one is willing to pursue.

Table 1. Summary of Actual Expenditures during 1986
(In Indonesian Rupiah)

Cost factor	Mean	SD	Min	Max	N
Registration fee	9,000	3,946	5,000	15,000	278
Tuition fee	70,000	31,472	40,000	160,000	278
Repeat exam fee	2,000	4,091	0	17,500	274
New modules	43,000	29,541	0	126,000	271
Used modules	3,000	10,960	0	72,000	277
University magazine	280	1,416	0	10,000	278
Dictionary	4,000	8,461	0	60,000	278
Reference books	9,000	17,287	0	100,000	277
Postage	4,000	4,716	0	30,000	278
Stationery	3,000	4,113	0	25,000	277
Pens, pencils, etc.	3,000	3,733	0	30,000	278
Calculator	3,000	8,182	0	45,000	277
Telephone calls	600	4,063	0	60,000	278
Telegrams	300	2,198	0	28,000	278
Transportation	23,000	30,139	0	210,000	277
Room and board	7,000	13,666	0	60,000	278
Gifts	3,000	8,419	0	50,000	278
Other direct expenses	10,000	13,242	0	75,000	276
Extra tutorials	4,000	11,279	0	75,000	278
Photocopying	4,000	73,690	0	60,000	278
Foregone income	24,000	73,960	0	600,000	278
TOTAL ANNUAL EXPENDITURE	212,000	108,880	45,000	873,000	261
EXPENDITURE/CREDIT HOUR	13,000	9,441	2,000	60,000	261

Table 2. Summary of Composite Cost Variables
(In Indonesian Rupiah)

Composite Variable	Mean	SD	MIN	MAX	N
FEES	81,000	34,173	45,000	187,500	274
MATERIALS	61,000	36,995	0	210,000	269
SUPPLIES	7,000	7,044	0	40,000	276
COMMUNICATIONS	5,000	7,525	0	70,000	278
ROOM & BOARD	20,000	28,132	0	150,000	276
TRANSPORATION	23,000	30,139	0	210,000	277
EXTRA TUTORIAL	4,000	11,279	0	75,000	278
FOREGONE INCOME	24,000	73,960	0	600,000	278
TOTAL ANNUAL EXPENDITURE	212,000	108,880	45,000	873,000	261
EXPENDITURE/CREDIT HOUR	13,000	9,441	2,000	60,000	261
EXPENDITURE/CYCLE					
Diploma	472,934	345,934	76,781	1,947,750	
BA Degree	605,796	447,038	127,407	2,580,000	

Table 3. Relationship between Student Expenditures and Background Characteristics Using ANOVA (Level of Significance of F-test)

				Back							
Cost Factor	Sex	Civil Status	Incom	Sec Cert	High Educ	High Cert	Study Prog	Regis Year	Cntr Locus	Cntr Size	School Locus
FEES											
MATERIALS					***	***	***				
SUPPLIES											
COMMUNICATIONS									*		**
ROOM & BOARD	**			*							***
TRANSPORTATION											***
EXTRA TUTORIALS									*		
FOREGONE INCOME											
TOTAL EXPENDITURE											**
EXPENDITURE/HOUR											*

KEY: * = P<.05
** = P<.01
*** = P<.001

Ex. 3. Percent Indicating Nonmonetary Costs Apply to Them; Will Cause Drop-out