PROGRAMMING EDUCATION FOR A BETTER QUALITY OF LIFE FOR ALL

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FOREWORD

As was agreed unanimously by Unesco's General Conference at its 1976 session in Nairobi, studies and information focusing on educational policies, planning and the management and evaluation of educational reforms rank among the priorities of the Organisation's educational activities. Dissemination of information is potentially an important activity to complement and strengthen effective technical cooperation between Member States.

Within this framework, it was decided to distribute more widely the abundance of technical information produced by Unesco regarding educational policy, planning, administration and facilities. Such information is generated by expert seminars, project preparation and evaluation, educational planning missions requested by Member States, etc. The Division of Educational Policy and Planning is therefore reproducing selections of this material under the general title of "Reports and Studies" and is disseminating copies to persons who may find them useful in their work.

These "Reports and Studies" are of two types: those with a subject orientation (numbered S.1, S.2, etc) and those with a country orientation (numbered C.1, C.2, etc). The subject papers deal with such topics as educational policies and planning, educational administration, educational facilities, international cooperation in education, relations between education and work, education and the New International Economic Order, etc. The country papers are either brief profiles of the educational system of a country, with a focus on the twenty-five least developed countries, or deal with one specific aspect of the educational system of the country concerned.

Some of these papers are desk studies based on information already available in Unesco; others are occasional staff papers, reflecting upon priority areas in the Division's programme. The series is intended for field programme officers of Unesco's Operational Division and other colleagues at Unesco Headquarters, for Unesco field experts, Regional Offices, interested organizations and institutions outside Unesco, and in general for the interested public.

The papers have been selected because of the professional interest of the ideas presented therein. We wish to stress that they are an expression of the ideas of their individual authors and they do not necessarily represent the opinions or policies of Unesco. Readers should also keep in mind that the authors have frequently prepared this material in a language that is not their own.

We trust that these "Reports and Studies" will form one of the first links in the networking services in educational policy, planning, administration and facilities which Unesco is about to launch.
Introduction

At present in most poor countries the vast proportion of resources devoted to rural areas are not designed to help develop these areas, but to provide academic schooling. Apparently the main functions of such schooling is to provide equality of opportunity for rural children to pass on to secondary and higher education, and hence into the high paid elitist jobs in the towns. There are of course many other stated objectives of schooling in general, and rural schooling in particular, but the achievement of these objectives is no more successful than the achievement of the egalitarian objectives.

However, as any development process, if it is to really affect the mass of the population, must also involve the mass of the population and as such involvement necessarily requires the introduction of new ideas, the changing of attitudes, and the provision of new skills and knowledge for the majority of the population, education in its broadest sense must play an absolutely central role. But with so many resources already tied up in the existing formal school system, if a rapid and significant impact is to be made, a new system cannot be developed alongside the old, but must result in a transformation of the existing school system using the scarce resources that this system is presently consuming.

On the basis of the experience of many developing countries which have attempted using rural education as a tool for improving the quality of rural life, certain basic guidelines for the design of any new more relevant system can be drawn. Some of the more important and practical guidelines are as follows:

1. The education should involve adults as much as children.
2. It should be a part of the community, involve a large proportion of community members both as teachers and learners, be designed to help solve the most pressing problems facing the particular community, and use all available educational resources in the community.
3. The curriculum should be made as interesting and relevant as possible, physical activities and manual labour should be an integral part of any educational process, and literacy should only be given priority attention if the environment is (or can be made) literate.
4. Participants and beneficiaries in the education should also be involved in elaborating the details of the curriculum.
5. There should be as little emphasis as is possible on examinations, and selection for the next level of education, but there should still be at least an appearance of opportunity for the rural children to progress to the next higher level of education.
6. The "teachers" should not just be teachers but should have other skills of direct relevance to the problems of the community. Nor need they be products of the formal educational system itself.
7. The system should be designed so that it shows people how they can improve their quality of life staying in the rural areas.
and also by its very existence it should make rural life somewhat more attractive. In these ways and others it should ensure that at least it does not add to the already existent pressures for migration to the towns.

6. The new system cannot be much more expensive than the existing system in terms of scarce resources.

9. In rural areas there is no real need for a system to carry out peer group socialization, and child care functions, though these would be necessary as soon as the scheme expanded to urban areas.

10. Finally, whatever system is accepted it must remain to some extent a microcosm of the society in which it is situated.

The above list of guidelines drawn from studies of the success and failures of existing school systems will predetermine to a large extent the design of any new prototype system. However, there are a number of general questions on which there is a lack of objective data. For example:

1. Assuming limited educational resources, at what age should a person start participating in an organised educational process?

2. What is more effective, a short period of full time participation in an organised educational process or a longer period of part time participation?

3. Will an organised educational process always reflect society (or lag behind), or can it be used as a leading sector in the mechanics of changing society?

4. Can a process be designed to benefit both those who participate for a long time, and those who participate only for a short time or intermittently?

5. Which educational functions are best carried out by an externally introduced educational process and which through traditional community education?

6. Can literacy be taught outside an organised educational process? (perhaps to be treated as a prerequisite for entry into further education).

7. Can the new system of general education be largely separated from the reward system operating in a particular society? (based on examination success).

8. How can a selection process for further education be both neutral as far as affecting what is taught in the system, and also seem fair?

9. Assuming that both rural and urban general education systems are designed to be relevant to the communities in which they are situated, what additional educational inputs are needed to ensure that the rural person has some chance in what will inevitably be a modern sector orientated further education system?
What role can the new mass media and other audio-visual techniques play in the process of rural transformation?

Theoretically it would be desirable to establish a large number of experiments designed to try and answer the above questions, but in practice anyone concerned with existing rural problems cannot wait the long period needed for such experiments to produce usable results. The educational process is by its very nature a long term one, and thus in most cases what happens in a year or two is of little real relevance. In addition, due to the Hawthorne effect (because of the motivation of experimenters, small scale experiments generally prove what they set out to prove) before any concrete conclusions can be drawn quite large scale experimentation has to take place. We know that the present system is wrong, we know definitively many criteria that a new system should have, thus despite the fact that many important questions remain unanswered, the few facts available, and intuition, must be used to provide tentative answers now. Obviously research should be incorporated into the design of any new system, but such a design cannot wait the ten, twenty, or even thirty years needed to answer some of these questions, as the problems facing the world's poor are so serious that the best possible attempt at their solution will have to be made now. Having said this, a very brief attempt will be made to provide some tentative answers to some of these questions.

As far as the age of entry is concerned there are two conflicting factors. First, children from culturally deprived homes (in which category most children in rural areas of poor countries fall) lose permanently a considerable amount of their environmental intelligence during the first four years of their lives but thereafter the losses are small. Secondly there is some evidence from developing countries that shows that learning is more rapid the older a child is (perhaps due to the greater likelihood of voluntary participation and self motivation). Most attempts at using education as a tool for rural development, have tried to increase the age of entry (e.g. Upper Volta, and Tanzania) into the educational system. This has been for two reasons; first so that the child when he completes his education will be nearer the age when he can make important decisions about his own life, and secondly because there are fewer children in the older age groups than in the younger. On the whole, it seems that the age of entry should be delayed as long as is possible given people's expectations from the school system.

A longer period of part time education rather than a short period of full time education seems desirable for three main reasons; first so that the child completes his education at an older age, secondly because most rural children are involved in domestic and productive activities, and if they are expected to participate only on a part time basis there is less likelihood of them dropping out, and thirdly with only part time participation there is less chance of them becoming disassociated from the community.

There are examples where organised educational processes have been used in an attempt to universalise minority values with considerable success (for example the Cuban literacy campaign).
Obviously a considerable degree of motivation is needed on the part of the "teachers" so that they are not absorbed by the existing society. As the Vice Minister of Education in China said in 1951 "The key to the reform of education is the ideological reform of the teachers".

With particular subjects it is certainly necessary that a student completes a given "quantum", whilst with other subjects or fields of study each idea or piece of knowledge might be valuable in itself. For example with literacy, there is not much point in someone learning the letters A, F, and P, or being able to read only cat, "Mr.", and house, whilst it might be useful to know how to de-tick a cow even if you do not know the best way of delivering a calf, or making a paddock. Thus, in situations where only sporadic attendance is likely the curriculum should be designed at least partly to take account of this fact and concentrate on subjects with small self-contained quanta.

The first criterion to be examined in deciding whether a particular field of learning should be left to traditional education is whether change is needed or not. For example with religion, ethics, and various handicrafts, there might be no urgency to change existing ideas and skills, and thus these fields can be left to traditional systems. Secondly there might be certain new ideas which can best be added through traditional institutions rather than through an absolutely new institution. (For example the best way to introduce a cooperative might be by working through the village council rather than through a new educational system). Only in those areas where new ideas, skills, attitudes and knowledge are needed, and there is no existing institution that can be easily used, should a new externally initiated educational institution be involved. Such an institution should concentrate the few resources it has at its disposal on those priority aspects that cannot be effectively dealt with by existing traditional organisations (without any sizable input of new resources).

A child learns to speak informally, and many children in literary environments also learn to read and write without instruction. In a non-literary environment it is obviously not possible for a person to become literate. Some attempts have been made to carry out literary training using the mass media. Two such attempts, one with radio in Colombia and the other with T.V. (Sesame street) in the U.S.A. have had reasonable success. Intuitively there would seem no reason to suppose that given a literary environment why a considerable proportion of people would not become literate without formal instruction, particularly if the social values were directed towards motivating people to become literate. There are of course likely to be people in any environment who might not learn to read and write by themselves even assuming that high social values were attached to such accomplishments, but will these people be fewer than those who remain illiterate through the existing system? (and if not surely the need to be able to read and write cannot be all that pressing.)
It has been emphasised that the existing educational system is closely tied up with the reward system operating within society. Without a complete change in values in a society resulting in much smaller rewards (both financial and social) going to those who have further education than at present, few parents (who are aware of the way in which high paid, and high prestige jobs are distributed) are likely to be particularly motivated in encouraging their children to participate in the new educational process if the only benefits claimed by such a process is that perhaps participants will be equipped to lead more productive and fulfilling lives in the rural community. Most people will opt for a 0.1 % chance of an elitist position rather than a 50 % or even a 100 % chance of a substantial increase in their standard of life remaining in the rural areas. Only in the most backward and remote areas of a country, where the parents have low expectations from the school, is any such system likely to attract significant numbers of pupils. Thus it seems that until there is a change in social values (which could only result from a change in the current reward system), any new process will have to be both a necessary step for progress to further education, and also provide some chance of such progress.

Thus, even in a new system there will have to be some process for selecting pupils to proceed up the educational ladder. However, such a process cannot be based on existing examinations, for then (however little emphasis is placed on these examinations) what is actually taught in the schools will still be largely dependent on what is to be included in the examination. (Thus the system would still concentrate on literary skills and on subjects that can easily be tested in a written exam.) As no selection process is fair (the inequalities of the present system have already been emphasised) any new process does not have to be fair, but only appear to be so. Various possible solutions suggest themselves: the use of non-learnable aptitude tests; the selection of a fixed proportion of pupils in each community by a panel composed of the members of the community and visiting inspectors; the selection based on social criteria like participation in manual work, involvement in the community activities; and academic skills. A great deal of thought, however, still needs to be devoted to devising the most appropriate selection process.

Once selected for further education the rural pupil will probably be in a disadvantaged position compared with his urban counterpart in terms of his chances for success in modern sector orientated further education. If special compensatory measures are not taken, the rural pupils will be the first to be eliminated from further education. Thus it will be necessary to develop a special cycle of education to prepare the few rural children selected for further education, so that at least he will start in further education with the same literary and numerical skills, and hopefully also the same role expectation as his urban brethren. It is absolutely essential that this compensatory cycle be completely separated from any new rural education process and be designed to work with whatever pupils the new process produces. In other words the compensatory cycle must act as a buffer between a rural orientated general educational system and a modern sector orientated technical and professional educational system.
Many people place very great hopes on the new mass media (Radio, T.V. and cinema) and other audio-visual techniques (tape recorders, video tape recorders etc.) and the role that they might play in introducing new ideas and attitudes, skills and knowledge into rural communities. Though it is admitted that such media can and do affect expectations, it is also true that they do not by themselves encourage activism, but on the contrary tend to result in a degree of passivity. Thus though the new media can be used to help change attitudes, and in some cases also to provide new knowledge (which if recorders are not available must be memorised on the spot) and some mechanical skills, these media cannot be used by themselves to make people work hard to improve their own well being, except insofar as they create new wants which can only be satisfied by greater production. However in most poor countries there is already no shortage of unfulfilled wants. The new media also at present tend to be controlled by urban elites, and thus transmit values that are not necessarily conducive to steady and rapid rural transformation. In addition their very appeal is in the large audience that can be reached at any one time, but as the central criterion of a new educational process must be its identification with particular community problems, this is not necessarily a great asset. However in all areas, and particularly those whose literacy is not considered of the highest priority, small local radios (perhaps with a 10 km. transmitting radius), tape recorders and tape libraries could play a much more important role than more wide ranging media.

Despite the fact that we now have a list of guidelines, and intuitive answers to many questions, not one detailed educational process automatically suggests itself. However, though many alternatives might be possible, if change in a well established system is required then one prototype which satisfies as many of our criteria as possible must be designed and proposed. Where several alternatives are put forward, those who are against changing the present system can permanently delay such change by continuously referring those alternatives for further study and comparison. Only where those who desire to change the present education system (with its built-in self-perpetuating inertia against significant change) have a clear cut and well defined programme of action, will there be any likelihood of the desired transformation taking place.

Thus the scheme outlined below, though not claiming to be the only possible scheme is one that not only meets many of the basic criteria, but also is one that could be implemented (with a great deal of difficulty of course) by a government that is really concerned with problems of rural development.

**The Scheme**

In most educational systems, the lower levels have to adjust their activities so that their graduates will meet the intake requirements of the higher levels. Thus in virtually all cases the system does

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* For a more detailed discussion of this topic please refer to Nicholas Bennet: Television : Media for Miseducation? Chandrakasem Magazine, Bangkok, October 1972.
not really benefit the masses who participate for only a few years, but only really benefits the minority who go on to further education. In the scheme outlined below, however, it has been assumed that it should be designed entirely to meet the real needs of the mass of the population that will participate. It is considered that it is the job of the further education system to make the necessary adjustments in their programmes so that they can effectively operate with the few continuing beyond mass education. They should no longer expect a product designed to meet their partisan needs.

In its broadest terms the scheme for mass rural education involves the establishment of a community centre (actually situated in the center of a community, both geographically and spiritually) to replace the existing elementary school. The centre will have four basic functions. First it will be used for certain periods of the day as a school (with a relevant not an academic curriculum) secondly it will be used as a place for providing extension advice in, for example, agriculture, hygiene, nutrition and family planning (or on whatever problems are considered most important both by the community and by the government); thirdly it will be used as a place for providing practically orientated adult education courses; and finally it is hoped that it will really be able to act as the center of the community, with people going to the center to meet their friends, read newspapers or books (if they are literate) or listen to tapes and the radio, plan joint activities, form clubs and so on.

There would be no universality throughout the country of curriculum or even in the fields of study to be covered in any center (for children, adults, and for the extension services), but these would be decided on the basis of a detailed in depth survey of the major problems facing a particular locality (10-15 kms. in radius) in which both local community members, and trained community development workers would participate. It is possible, however, that problems of universal importance might be identified, and thus covered by every center. For example there might be a need to change traditional demographic concepts and introduce family planning ideas in all parts of a country.

Four or five people would be employed in each center as "teachers" or "agents of change" and the particular skills that these people would have would be determined on the basis of the priority problems identified in the survey. For example, in one locality there might be an agricultural worker, a cooperative organiser, a nutritionist and health advisor, a fisheries worker, and a family planning mobilizer; whilst in another locality there might be a veterinarian, a medical assistant, two literacy workers, and a family planning mobilizer. Even if the titles of the personnel are the same in different localities they might have slightly different fields of interest and functions since as much as possible the training given to these people would be designed to equip them for solving specific priority problems in a particular locality.

As it generally proves very difficult in any country to get products of secondary and higher education to remain in rural areas, and if they do it is not usually by choice (and thus they are unlikely to be motivated) at least half the staff of each center should be chosen from existing progressive elements within the community. This is also likely to encourage greater community involvement in the center than if
all the employees were outsiders. These people, once chosen, would be
given one or two years' practical training in one of the most important
problem areas identified for that particular locality.

Each locality would contain about 50 separate communities (in
sparsely populated areas a larger radius and a smaller number of
communities would have to be aimed for), and at the geographical
center of the locality would be established a group of five or more
supervisors (one in each of the specialisms catered for in the
community centers) and also a short range radio transmitter which
would be used both as a supervision aid, and as a tool for interesting
the population in their locality, and drawing attention to individual
and community successes within the locality thus giving local
residents some idea of what really can be done.

Children would participate in the activities of the center each
morning for four or five hours (say from 7 a.m. to midday). The age
that they would start and the number of years they would participate
would obviously vary from country to country, and depend on the
resources available and other factors; however ideally children should
start as late as possible (perhaps not until they are seven or eight
years old), and they should continue for at least four or five years.
There would only be a small amount of classroom instruction, with the
emphasis of the programme being on practical involvement in the
activities of the community, experimentation and discussion. In
other words the curriculum would be organised on a project or problem
solving basis. For example, the children might work in groups with
different farmers, discuss the variety of methods used and the con-
sequent differences in yields, and carry out various experiments to
prove specific theoretical concepts (e.g. the effects of using organic
fertilizers, new seed varieties, irrigation). The school day would
not be divided into periods as is presently the case, but most of one
morning (or even most of a week or a month) might be devoted (for
any one group of children) to a particular subject.

Literacy classes would not be given unless there was already an
adequate supply of simple (with a limited vocabulary) entertaining and
informative reading materials available in the locality. Again only
part of the literacy training would take place in a classroom situ-
ation with the other part devoted to literalizing the environment
(labelling everything in the community, e.g. putting a sign on each
tree with the name of the tree, children stitching their names on
their shirts, hanging signs round animals necks etc. etc.), and
explaining and demonstrating the need for literacy. Thus the main
efforts on literacy would be devoted firstly in making the children
(and the adults) aware of written symbols, and secondly on motivatin
them to learn the meaning of the symbols. Only when the majority of
children in a particular group are motivated and aware, would a con-
centrated attempt be made to teach them the actual skills of reading
and writing.
Children would not necessarily be divided into groups according to age (or according to the length of time they had participated in the system), and certainly whatever method is chosen the children in their final year should not form a separate group, but should be divided for a large portion of their school day amongst the other groups so that they could assist the "teachers" or "agents of change" with the other children. Selection of those who might proceed to further education should certainly at least be partly dependent on a child's success in this activity.

After lunch the staff of the center would be available at the center either to provide extension advice (in the case of agricultural workers) or to carry out particular services (in the case of family planning mobilisers, medical assistants and literacy workers). For example the agricultural worker might provide advice on what quantities of fertilisers should be used, what seeds should be used, what is the best way to plant a particular crop and so on. The family planning mobiliser might discuss with individual women, advise them on particular methods, and fit them with I. s or give them pills. The medical assistant might use one room in the center for examining patients, diagnosing, and prescribing medicines. Finally, the literacy worker might read and write letters for illiterates, help people fill up application forms, advise people on what they could read, and perhaps also give special courses to children (or adults) who are motivated to read but are still having reading problems.

From time to time in the evenings special courses might be held for adults by the "agents of change" at the community center. These might be held in conjunction with a radio programme from the locality center (either based on a particular success story from one community, or as part of a centralised campaign to solve a particular problem), or might be held on the "agent of change's" or the community's own initiative. Such courses would obviously involve discussion and dialogue, (as is done for example with the Indian radio clubs) as well as an examination of some of the experiments being carried out by the children. Literacy classes for adults might also be undertaken if a sufficient number of adults express an interest in such courses. Texts either prepared by the literacy worker, or by the children might be used in such courses so that the relevance of what is being read would automatically be apparent to the adults.

These periodical evening classes for adults would only be likely to be successful if the "school" (or community center or whatever the institution is called) really does become a center for the community where people of all ages and both sexes gather to gossip, to discuss, to read, to listen to the local radio and prerecorded tapes (and even to record tapes to send to the local radio for possible transmission) and to drink tea or beer (depending on local custom). Only if the center is situated in a central and convenient location and provides facilities and activities that attract the local inhabitants is the whole scheme likely to succeed, for unless the center is seen by community members as belonging to them and serving their interests, it will soon become an alien institution and like most alien institutions will be likely to have as many negative as positive aspects.
Before going on to discuss some of the steps that would have to be taken if such a community centered educational scheme is to be implemented, it might be useful to summarise the most basic points in the design of the scheme:

a) Institutional. After the result of a careful survey, a community center should be established in a central and convenient location. This center would either use the existing school premises or replace the school. It should be open all the year round all day and in the evenings also.

b) Employees. Each center should employ at least four or five "agents of change" or "teachers". Each of these would have skills designed to be useful for solving the most crucial problems facing the community. Wherever possible these "agents of change" should be drawn from the members of the community and given one or two years specialist training in specific subjects to build on their traditional background and skills in the same subjects.

c) Participants. In the morning for four or five hours the "agents of change" would work with children (the children would spend at least four years participating in the activities of the center on a half time basis). In the afternoon any community member could go to the center either to receive extension advice, or for particular services (letter writing, I.U.D. fitting, curing certain illnesses). In the evening the center would serve as a meeting place for all community members. Reading, radio and tape listening, and drinking facilities might be available, and in addition certain special adult courses might take place.

d) Curriculum. The precise problems that would be dealt with in any community would be decided on the basis of a survey to be carried out prior to establishing the center. Very little emphasis would be placed on ordinary classroom work, but the concentration would be on practical work, experimentation and discussion. If literacy is to be taught, very great emphasis would be placed on making the community a literate environment.

e) Organisation and Supervision. For each fifty or so community centers there would be one central supervision center with five or more supervisors who would visit the center with reasonable frequency. There would also be a short range radio transmitter which would be used for broadcasting certain prerecorded tapes of general interest, for mounting specific campaigns, and suggesting particular action to the centers, and for developing a high level of interest in the locality and more particularly in the achievements of individuals and communities within the locality.

Practical implementation steps

In this section the steps that will have to be taken in order to implement a scheme such as the one described above will be outlined.
In designing the implementation steps two conflicting points have to be taken into consideration, firstly the need to do something urgently to improve the quality of life in rural areas, and secondly the need to clarify exactly what should be done, so the mistakes of most existing systems (designed on the basis of what elites think rural people should know) are not repeated. Thus there is both an urgency for immediate change and also a need to devote some time in ensuring that the change being implemented will at least have some chance of success.

The following are the major steps that would have to be carried out in establishing any system similar to the one outlined above:

a) Divide the country into homogenous socio-linguistical-agricultural regions, collect all available data, and carry out pilot surveys where necessary to identify basic problems facing the region (from the people in the region's point of view as well as the government's). 1 year

b) On the basis of the information gathered in a) above prepare a practically orientated training programme for the supervisors of the new scheme. 1 year

c) Train the supervisors. The new supervisors would probably have to be drawn from existing rural education and extension workers, thus they are likely to have a skill background in a particular subject, but will need recoritnation towards the objectives of the new scheme. 1-2 years

d) Contemporaneously with b) and c) above and e) below a whole series of training packages should be prepared for training the staff of the centers, each one who will be trained in skills needed to solve a particular problem - or problems. In addition the trainers of the "agents of change" will themselves have to be trained. 3-4 years

e) The supervisors will then go (one at a time) to a particular community and carry out the following activities:

(i) Identify the progressive elements in the community and with them try to discover the priority problems facing that community and which are not being solved by traditional educational systems.

(ii) Discuss with other supervisors and then report back to the regional or district training organisation on these problems, so that this information can be used in training package preparation and in the training of trainers.

(iii) Identify individuals in the community who both possess some traditional skills that could be built on and are respected by the community. These might include some primary school teachers, some progressive farmers, some local artisans, some traditional midwives, some herbal doctors and so on. Convince these people of the benefits of working in the proposed center, and recommend a short list of those who seem well motivated to the regional or district training organisation for final selection.
vi) Identify the existing community center (if any) whether it be in a bar, under a tree, or in a temple or a church. Analyse the reasons why the existing center managed to achieve that position. Decide whether the existing elementary school building (if any) could satisfy geographical and other conditions for becoming a community center. If not, decide (in consultation with the local community) where the new center should be situated.

v) Identify and report on the traditional educational environments that might either be able to entirely cope with a particular problem, or be used by the center in any attempt at solving the priority problems.

vi) Convince the community of the advantages of having this new type of center in their community. These tasks could either be carried out by one supervisor spending 6 months to 1 year in the community, or by four or five supervisors spending one or two months each in the community.

f) Train the "agents of change" for the centers. Each one would be trained in one specific subject relevant to some of the priority problems in his particular locality. All the staff for a given locality would be trained in one institution (no matter what speciality they were being trained for) so that they would learn during their training to cooperate with each other. The training given would be practically orientated, and would involve a considerable amount of field work. 1-2 years

g) Contemporaneously with the last part of the training in f) above the supervisors would go back to the communities to try to persuade them to start establishing the new center, (perhaps with some assistance in the form of building materials from the government) to provide land for experimential plots where needed and generally to participate and help the "agents of change" when they return to the communities.

h) Finally the newly trained "agents of change" would return to the community and start carrying out the activities described earlier whether an actual center was already built or not. If a center was not already built the agents would have to try to mobilise the community members to construct one as soon as possible.

The total process from original conception to the first implementation is likely to take at least five, and perhaps as long as seven or eight years. Obviously a considerably longer period would be needed to make such a scheme anywhere nearly universal in any country.

Also this process cannot be considered to be one that only has to be carried out once, for if the new community centers achieve their objectives, then within a relatively short period of time (perhaps as short as ten years) the priority problems originally identified will have been solved, and new, perhaps more important problems will have become apparent. If the new educational system is not to become as redundant as the existing system, there will have to
be a continuous process of analysing community problems and retraining the supervisors and "agents of change", (also of course studying the effectiveness of the new system, and proposing changes where it is obviously not meeting its objectives). There should probably be at least two weeks inservice training of the "agents of change" every year, and a complete retraining, lasting six months to one year every ten years. The supervisors of course would need even more frequent inservice training and retraining.

The training and retraining programmes for both the supervisors and the "agents of change" would have to be very carefully designed with very little concentration on academic and classroom instruction, and with the same methods being used as are expected to be used by the "agents of change" themselves when working in their communities. Thus the emphasis on these training programmes should always be on demonstrating theory through practical work and experimentation, rather than through textbooks and rote memorization. The training centers should obviously be situated in rural areas and not in towns.

As the level of training given to the "agents of change" is intentionally quite low (intentionally so that there will not be too wide a gap between the conceptual framework of the agents and the people they are supposed to be helping, so that they do not have to be paid a high salary, and also so that they cannot use their training as a way into elite positions in the modern sector), effective supervision becomes very important. It is suggested therefore that for every 250 "agents of change" there should be at least five supervisors (preferably more) each with a different speciality, and that each supervisor should visit each center at least three times a year, to check that the programmes are being run at least roughly as planned, and also to check that various practical activities and experiments are being carried out. In addition the local radio (which will be situated at the supervision center) will be used to provide advice and instruction from the supervisors to the local agents. Finally, it is suggested that the "agents of change" and the supervisors should (at least for part of their salary) be paid by results. A small basic salary would be provided (for the agents this might be partly in kind from the local community and partly from the government) with the possibility of considerable bonuses dependent on degree of success in solving the problems they have been trained to solve. For example the literacy worker might get a small bonus for each 1% increase in the literacy rate up to a 90% (or any other figure) level when he would be entitled to the full bonus, or the family planning mobilizer might earn his bonuses on the basis of percentage falls in the birth rate or the agricultural worker on the basis of percentage increases in production of certain crops; and so on. Obviously whatever payment by result system is developed there would be considerable opportunities for cheating which would never be able to be completely eliminated, but assuming that some easily administered checks can be developed, even despite some cheating considerably greater benefit is likely to be achieved from a system of payment by results than from one with fixed salaries.
The implementation of such a new educational scheme will involve considerable analyses of rural communities to discover the priority problems, and a mobilization of all existing rural development personnel both to act as trainers of supervisors, and "agents of change" and to act as supervisors (both of the agents of change and of the local supervisors themselves). The priority problems have to be identified, the scope of activity of the centers in a given locality decided upon, the site of the center identified, and the progressive local personnel who will act as agents chosen. All these activities should be carried out jointly by the specially trained supervisor and the local community. It is very important that the community is involved as much as is feasible (given the fact that common local programmes must be operated in a 10 or 15 km. radius area) so that they consider that the center is their center not some government imposition. The agents of change then have to be trained (using roughly the same methods as they are expected to use themselves in their communities), and then supervised through the local radio and reasonably frequent visits to ensure that they are doing roughly what they are supposed to be doing. The local agents cannot of course be expected to be puppets on strings pulled by the supervisors, particularly as in many cases they might know more about their communities than the supervisors, but nevertheless they will have to carry out a certain number of predetermined tasks. Finally as the whole purpose of this scheme is to solve certain specific problems, it is suggested that the local agents and supervisors are at least partly paid by measurable results.

In conclusion to this section the importance of making the system as flexible as possible should be emphasised. As soon as one priority problem is solved the "agents of change" should be retrained so that they can work effectively towards solving a new problem. The curriculum and fields of activity should not be fixed but should be continuously changed as circumstances change.

Some Major Problems

There are a considerable number of specific problems directly related to the scheme outlined which should be briefly discussed now. It is not claimed that definitive solutions are available to all these problems, but still it is felt that it is necessary to draw attention to all the factors that must be considered in planning for the implementation of a new rural educational system such as the one described.

First there is a whole cluster of problems relating to the necessity of providing at least an appearance of opportunity of progression to further education for rural children. What changes should take place in urban general education? What selection process could be used? Is there a need for a special compensatory education for rural children to enable them to compete with urban children, and if so how could it be organised?

Secondly there are various operational problems relating to the establishment of the community centers. For example how can different sizes of communities be catered for? (particularly the smaller communities), and how can the activities of the centers be organised so that they do not interfere too much with the traditional social and economic roles of children?
Finally there are a host of problems relating to the overall organisation of the scheme. For example what government organisation should be responsible for the scheme? Should overall control be centralized or localised? How can the scheme be coordinated with other rural sector inputs? How can career prospects be provided for the "agents of change" and supervisors? And finally how can the system be financed?

a) Rural Urban Continuum

Though theoretically there would seem to be little reason why a similar type of community centered education could not be established in the urban areas as well (except that perhaps children might have to participate for the full day because of the child care function of urban schools) there are a large number of practical difficulties that would not be at all easy to overcome without considerable social change. For example, in towns, local areas are not self-contained communities with residential, productive, commercial, and service activities taking place within close proximity with each other, as is the case in rural areas. Thus there might be no hospitals or shops or factories near a particular school, and in addition the hospitals, factories and shops that there are might have to serve a very large geographical area covering many schools. Cities and towns exist because concentrations of population allow enterprises to specialise and to operate on a very large scale, and thus run their activities more "efficiently". These enterprises would therefore be unwilling to have to involve very large numbers of children in their day to day work as this would tend to reduce their "efficiency", and in addition it would be very difficult for a school to include in its curriculum study of, and participation in, a significant number of the specialist activities taking place. In addition urban populations are not nearly so homogenous as rural populations, and thus there are fewer priority problems that are of general relevance to people from all socio-economic groups. Thus, as we are concerned with immediately implementable solutions, not theoretical possibilities, it does not seem that the same community centered educational system with a few carefully selected "agents of change" would be a practical solution for urban areas in most existing societies.

Obviously, however, changes are urgently needed in urban schools, but the scope of changes will have to be much more limited, partly for the reasons already mentioned, and perhaps even more importantly because the urban schools occupy a central position in the elites aspirations for self perpetuation. Because of the difficulties of introducing change into urban systems no detailed proposal will be presented but only guidelines for the direction in which change should take place. It will then be assumed that some form of compensatory education will have to be given to rural children who, having completed their community education, are selected to go on to further education and this compensatory cycle will have to prepare children to compete with the products of existing or only slightly modified urban systems.

The following are some guidelines for change in urban schools in poor countries that might be feasible in some circumstances:
- The method of teaching should be deformed as has been done in many English junior schools, with an open classroom approach, with no teacher pupil lecturing, but a large number of different activities taking place in the classroom at any one time. If this were done the children might at least enjoy themselves, and not be nearly as bored as they are at present.

- Simple machines should be available for the pupils to operate, take to pieces and repair. In this way the child will not be nearly so mystified by the products of modern technology, and not so dependent on specialists when he grows up.

- Games should be developed to teach children how to deal with modern, institutional bureaucracies. In this way the child when he grows up might be better able to cope with the complexities of modern organisations.

- All traditional examinations should be abolished, and there should be no grade repetition. A new terminal selection process based on aptitude tests (and other similar games) should be developed.

- Visits should be arranged as frequently as possible to factories, hospitals, T.V. stations, shops, newspaper offices, and further education institutions, and the children encouraged to discuss what they have seen and to write critical but constructive reports.

- Special efforts should be made to motivate children to want to learn to read and write. There should, however, be no compulsion (as this fails in any case) but assistance and encouragement should be provided as soon as the child is motivated.

- All children should participate in a "summer camp" for one month a year in a rural area during which time they would work with the local farmers, helping them with the harvest and so on.

- The children should be encouraged to carry out certain community services. For example visiting people in hospital, cleaning the houses of old or sick people, and doing their marketing, baby sitting, cleaning or building parks and playgrounds, etc. This community participation could be taken into account in the selection process for further education.

- The school should be opened in the evening for adults to meet, read books and newspapers, listen to the radio and watch T.V., and both give and attend adult education classes.

- Parents should be encouraged to assist the "teachers" whenever they have free time.

None of these changes are essential for the success of the new rural scheme described, which is fortunate as there seems to be no easy way of implementing the majority of them in the short run in most developing countries that I am familiar with.
Whether these changes take place or not a special cycle of compensatory education will be needed for the rural children selected for further education, for despite the fact that the further education system should be deinstitutionalised, and made much less academic these changes are not only less likely to take place, but even if they did, the urban child with his greater familiarity with the modern sector, and his higher role expectation is likely to achieve much better than his rural counterpart.

The number of children from rural centers who would participate in this compensatory cycle is obviously dependent on the development strategy being pursued by the particular government (and thus the growth of high level modern sector employment opportunities) and on the degree to which existing urban elites have a grip on these employment opportunities. However if the new rural system is to provide at least an appearance of mobility, at least one child from each center (or say at least 5% of children in their final year) should go on to further education each year. In many situations this figure could be larger, but it should never be smaller.

The length of the compensatory cycle is also likely to vary from situation to situation. In general, however, it should be so designed that the rural child has had one or two years more education than his urban counterparts by the time he has to compete with them. For example in Thailand the normal elementary course is seven years, thus if the community center course were five years, the compensatory cycle should last three or four years.

Each of the localities on which the community center system is based would have to have at least two "schools" for preparing a small number of rural children for further education. These "schools" must have only a very limited intake and would thus enroll only very slightly more children than the number that is expected to go on to further education. If the intake were strictly controlled then there would be a minimal amount of failure at this level. The schools would in general be copies of the schools that exist in the urban areas except that they should be better equipped, and have higher paid staff (perhaps also paid partly on the basis of the success of their pupils) than the average for urban areas. The curriculum should concentrate on improving language, literacy, and numerical skills, familiarising the children with the complexities of the modern sector, and increasing the child's role expectation and self confidence.

Ideally such schools should be situated in the urban areas, with associated boarding facilities, so that the effect on those who were not selected to continue their education could be kept at a minimum.

* Certainly, however, the following piece of Nyerere's philosophy should be emphasised. "Those who receive this privilege, therefore have a duty to repay the sacrifice others have made. They are like the man who has been given all the food available in a starving village in order that he might have strength to bring supplies back from a distant place. If he takes the food and does not bring help to his brothers he is a traitor. Similarly if any of the young men and women who are given an education by the people of this republic adopt attitudes of superiority, or fail to use their knowledge to help the development of this country; then they are betraying our union."
but from financial considerations this will not often be possible. At the very least, however, these schools should be completely separated from the community center, preferably even occupying old elementary school buildings outside the village. The students would have to participate in various community development activities. In addition they might exchange places with urban school children, each living with the others parents for a month a year: in this way the urban child would get an idea of the hardships of rural life, and the rural child both an idea of the complexities of modern life (before he faces them in his further education) and of the expectations of urban parents.

As the precise design of these compensatory schools depends on the design of the urban schools vary little further description can be given. However, it should be emphasised that unlike the community center, and unlike the changes proposed for urban education, there would be no attempt at making the curriculum relevant to the background of/child, as the function of this part of the education system is to prepare a rural child for effective competition in the modern sector. Obviously of course efforts should be made to prevent the child becoming completely disassociated from his background, and from preventing him feeling too superior, but apart from these provisos the compensatory school will have to concentrate on preparing the child for an environment considerably different from the one from which he has come.

We are still of course left with the problem of how the children from the community centers can be selected for this compensatory cycle, for until the new system is well enough established to prove its worth (and probably even then), there will be very great pressures from parents to have their children selected (particularly now that the end of the community education will be the main cut off point in the system). Because of the pressures that exist a great deal of thought will still have to be devoted to this problem. However, for illustrative and discussion purposes the following system is suggested.

The staff of the community center select twice or three times the number of children who are likely to go on to further education on the basis of the child's participation in community activities, his assistance in helping the "agents of change" with the younger children, his intelligence or brightness (subjectively decided), his performance during the four or five years of his participation in the center, and of course on the child's desire to go on to further education. Each agent of change would grade each child (subjectively) * on each of these criteria and the top children would be chosen to be sent to the locality center for final selection. There the children would be given

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* The results (though not showing which agent graded a particular child highly or lowly) should be publicly announced.
a battery of aptitude tests (which could be completely irrelevant but hopefully would not) and an interview by the local supervisors. In this way the final selection of the children submitted from each center would be made. It should be emphasized that it is not whether the system is fair that is important, but that it appears to be so.

b) Operational Problems at the Macro Level

In the description of the community centered scheme described so far, it has been assumed that all communities occupy a fixed location, and also that all communities are large enough to warrant employing four or five "agents of change". To both these assumptions there are a large number of exceptions in virtually all countries. Nomadic people are common, and so are small communities with only a hundred or less inhabitants. For each of these situations (and perhaps for others also) special solutions will have to be developed. These solutions though based on the same principles as the central scheme should obviously incorporate considerable variations.

For example with nomadic communities education always poses very great difficulties and the system outlined with the "agents of change" coming from the community itself, and with supervision and overall direction being carried out by local radio is certainly considerably more practical than the present schools. The agent, once trained can return to his people, and travel with them receiving advice and guidance through the radio. There would of course be no fixed community center, and very great problems involved in trying to literalize the environment and promote literacy, and thus there would have to be much greater emphasis on using audio methods (cassette recorders) of communication. In addition supervision would be very difficult, and any children selected to go on to further education would almost certainly need longer compensatory education. But even with these problems the scheme would be likely to have a very great impact merely because a few "agents of change" with relevant and directly useful skills would be travelling around with their nomadic colleagues.

For the small community various solutions suggest themselves. For example instead of having four or five "agents of change" with one or two years specialist training in one subject it might be possible to have two "agents of change" with two or three years specialist training in two related subjects. Or alternatively two or three neighbouring communities might have between them the full complement of "agents of change" for that particular locality, with say two situated at each community center. For a couple of days a week these agents would change positions and spend a whole day in another community center.

* If the children from a particular center (or centers) did particularly well, or badly (which would suggest that someone had been trying to teach them how to do a particular test) further different types of tests would be administered until a plausible distribution were obtained. There would in any case be little point in an "agent of change" teaching a whole class how to do "well" in aptitude tests as only very infrequently could any center get more than its quota on to further education.
With the largest communities, needing more than five "agents of change", there is no real problem, for there could either be more than one center, or there could be more than five agents in one center (either with more than one specialist in the most serious problem areas or with more than five specialities and problems catered for).

The figure of four or five "agents of change" for each center was chosen for two main reasons. First because this is slightly higher than the number of teachers normally available in rural elementary schools, and secondly because it was not felt that more than four or five problems (even if they were related) could be dealt with at any one time effectively. A number slightly higher than the present number of primary school teachers was chosen for two reasons. First because the existing number of primary school teachers employed provides an indication of the ability and willingness in financial terms of the extent to which government would be prepared to support rural education. Secondly, though existing primary school teachers would be encouraged to look elsewhere for employment (in the compensatory programmes for example, with sufficient re-training) and though temporary and unqualified teachers would not necessarily be used, the new scheme would have to absorb in one way or another a larger proportion of existing teachers. It would probably be very undesirable for the success of the scheme if the majority of "agents of change" were drawn from existing teachers to prevent this happening a larger number of people than the existing stock of rural elementary teachers would need to be employed. In countries with a very underdeveloped educational system most existing teachers could be absorbed. It would also be possible to absorb the majority of existing teachers in a situation where the scheme was being introduced gradually, as teachers being replaced by agents of change could be moved to other areas (urban as well as rural) to replace teachers in ordinary schools who are retiring. (This in itself is a strong argument for gradual implementation of the scheme).

One other point should be mentioned about the organization of the programmes in individual community centers. Though it has been suggested that each center should cater for children in the morning (from 7 a.m. to noon), offer extension advice in the afternoon, and adult programmes in the evening, this timetabling is only indicative. The actual timetable of any center should of course be designed so that it interferes as little as possible with the traditional social and economic roles of children and adults. In some communities children might be involved in milking animals and taking them to pasture early in the morning, and thus the timetable would have to be adjusted to take account of this fact. Similarly if older children have to look after their younger siblings, then the children ought to be able to take these siblings along with them to the community center (as is done in many schools in China).

* Undesirable, because attitudes developed over a lifetime of work in a traditional system cannot be changed in a year or two of training, and thus academic instruction methods might continue to predominate. As well as finding other jobs it could be expected that many older teachers would prefer to retire early rather than be retrained.
The scheme described is not designed to be implemented to the last dot in all parts of all countries, but is designed to illustrate a feasible, and more useful alternative to the present rural educational system. If it is to have any chance of being effective, it must be very very flexible and in implementation must take account of as many of the myriads of differences that exist between communities within and between different countries, as is possible.

2) Overall Organisational Problems

There will be considerable organisational problems in implementing a scheme such as the one outlined, for the activities to be carried out by the new community centers cut across the responsibilities of many government ministries and organisations (for example the Ministries of Interior, Education, Health, Community Development, Agriculture, Communications and Social and Cultural Welfare). Obviously it would not be possible to organise a scheme with just one center in each community, one district or regional training institution, and one local radio station if seven or more government organisations were involved in the direct administration. On the other hand if there were seven centers, seven training institutions and so on, this would not only make universal coverage financially impossible, but would also defeat the whole purpose of the scheme, which is to identify the major problems in specific rural areas and to concentrate the available resources on solving those problems. Thus inevitably a prior condition for the establishment of such a scheme would be the formation of a new "Super Ministry" for rural development which though guided perhaps by a steering committee from other ministries, should have enough power to resist partisan pressures, and administer the scheme as it saw best.

The present departmentalisation of government activities in rural areas often by itself is sufficient to doom to failure many well meaning efforts. Irrigation dams are built without the necessary inputs of seeds and fertilizers being provided; credit is supplied without the necessary extension advice; circulars instructing farmers how to use insecticides are distributed without ensuring that the farmers first know how to read. In addition very often there is duplication in the efforts of different organisations with the consequent waste of resources. For example, seven government organisations offer short course skill training for people in perirural areas in Thailand, and often there are three similar centers giving similar training but run by different Ministries in the same town. Thus, even if a schema such as the one proposed were not being introduced, there would still be a strong justification for centralising all rural development activities under one organisation.

Though the new community centers would become the central organised instrument for rural development, other inputs would still be needed if rural areas are to develop rapidly. For example villages might be electrified, and provided with a borehole or a piped water system; fertilizers, new seeds and agricultural credit might be distributed; large irrigation dams and canals constructed, cattle inoculated and new breeds introduced. These inputs would probably have to continue
to be supplied through separate ministries, since it is unlikely that half a dozen ministries could be completely closed down even if a new super ministry were being established. However it is clear that whether these inputs are being provided by many existing ministries or by one super ministry, they should be channelled through the community center and should only be offered if one of the "agents of change" at the community center is qualified to provide the necessary advice to ensure their effective utilization. In other words these inputs should only be offered if they are likely to help solve one (or more) of the priority problems already identified for the specific community or locality. Finally in order to avoid the creation of a large number of small and competing extension services no government ministry should be allowed to operate its own extension service outside the structure of the community center.

Still on the question of overall organization and administration, it will have to be decided whether this new system should be administered centrally or locally. Though the final decision will to a large extent be determined by the existing structure of government administration in the particular country, there would be considerable advantages in having a decentralised system. With a centralised system there would be the danger of creating one bureaucratic monster which would probably quite quickly form institutionalised patterns of behaviour and make the new system as inflexible and dogmatic as the old. In addition with a centralised system of control the new system would be much more open to effective pressure from modern sector elite groups who in most developing countries are concentrated in the capital and one or two other major cities. It is also probably true that officials in small district towns are more aware of the real problems in rural areas, and the difficulties of changing things than their colleagues in the capital. Thus, wherever possible, administration should be decentralised with each district or province not only being responsible for the community centers (which in any case should be encouraged to run their own affairs as much as possible) but also for the institutions training the "agents of change". In most cases only the institutions responsible for training supervisors, and trainers of the "agents of change" need be under central control.

This does not of course mean that the financing could be entirely local, particularly as in the majority of countries the central government has considerably greater tax revenues and other resources than local governments. Apart from the high initial cost of this scheme (for providing local transmitters and receivers, building materials for new centers where the present school is unsuitable, constructing "agent of change" training centers where existing teacher training colleges cannot be used, and providing motor bicycles or other means of transport where necessary for the supervisors) for which special financing arrangements will have to be made, the new scheme is likely to be considerably more expensive in total than the existing system. This is for several reasons. First because considerably more supervisors (and supervisors of supervisors) will be needed than are used in the present system, and these supervisors will have to have funds for travelling so that they really do frequently visit the centers under their responsibility.
Secondly because of the need to employ a technician to operate, maintain and repair the local radio transmitter (the cost of the power used in operation would of course be minimal). Thirdly because more "agents of change" will be employed than the number of teachers now employed and though these agents of change might have a lower basic salary than existing teachers (as many would not be products of the formal elitist educational system) with their "performance bonuses" they would be earning at least as much if not more than teachers presently do. Finally, because the new community center would need more inputs of materials and supplies than existing schools have (existing rural schools also need more). For example, tapes, books, newspapers, batteries, replacements for radios and recorders, materials for literalising the environment, seeds and fertilizers and other supplies needed for the children's experiments would have to be provided, as well as medicines, IUD's, pills and other inputs needed by the "agents of change" for their service and extension activities.

Even though the existing local and central government budgets currently devoted to rural education, rural health services, agricultural extension etc., would be used to finance the new scheme and also the savings resulting from the changes to further education, these would be unlikely to be sufficient if the scheme became universal. Even if there was a change in government development strategy with an increase in the proportion of total resources being devoted to rural areas, there might still be a need for some community finance of the centers, and without such a change community participation in financing would be essential.

In order to reduce the burden on government the "agents of change" might be partly paid in kind by the community members; they might be allowed to charge certain nominal fees for services rendered; farmers might provide some produce for sale in part payment for the assistance provided by both rural and urban children during peak work periods; the children might be responsible for growing some crops to be sold by the center; and finally donations might be able to be solicited. Many different alternatives will have to be investigated, and though the financial problems will be difficult to solve, if sufficient motivation can be generated it should be possible to raise the necessary finance.*

Conclusion

In this discussion one possible scheme for using a community centered educational system for rural development has been outlined, the process for implementation discussed, and some of the major problems drawn attention to. As many questions have been raised as answers provided, but this is as it should be for it would be arrogant to suppose that all the answers to the problems of rural development are now known, and all that needs to be done is to implement them. One scheme has been outlined only to suggest a direction in which a solution

* It should be noted that in China most rural schools are now largely self-financing, which proves that more than is needed for this scheme is demonstrably obtainable.
might lie, and also to provide a framework for discussing the practical problems that would be faced in introducing any radical scheme for rural development that has a chance of success.

In the end, however, this scheme, however rational and desirable its objectives, will only really succeed if the "agents of change" in the community center can really become agents of change, can gain the respect of their community, and be motivated. This is the hardest problem to solve for financial rewards, career prospects ("which must of course be built into the system") and administrative arrangements by themselves will not produce this respect and motivation. Only through a reorientation of the values of society with high priority being given to rural development can the "agents of change" become agents of change. Without such a reorientation, though the scheme will be considerably more useful than the present system all its objectives will never be fully achieved.

* One of the reasons why existing rural educational systems are almost universally of poor quality, is that any teacher who is at all capable and motivated, is rapidly promoted to an urban teaching position and then into an administrative post. Career prospects, with considerable promotion possibilities must therefore be created within the rural development service in rural areas for "agents of change" and supervisors.
Secondary and Higher Education: The Need for Greater Relevance and Lower Costs

I. Introduction

In most countries secondary*, technical, and higher education receive considerably more attention from populations and politicians alike than does the general mass education system. Though only a relatively small number of people are directly participating in further** education usually around 50% (or more) of total educational budgets are devoted to such sub-systems, and despite the fact that meaningful near universal general education does not exist in most poor countries, the expansion of both enrolments and budgets, has in recent years been considerably more rapid for secondary and higher education than it has been for general mass education.

However, despite this greater political interest, and despite the fact that further education is much less homogenous than general mass education (with a large number of significant sub-systems) and thus a large number of possible solutions for separate sub-systems have to be developed, in this paper I am only going to devote scant attention to those levels of education. This is for several reasons. First because further education affects directly only a relatively small number of people, and usually those who are amongst the better off members of society. Secondly because I am not convinced of the real need for much of the further education that exists, and feel that a considerable proportion of the resources being used are devoted to satisfying the needs of certain interest groups, or to continuing the practice of creating equality of opportunity through producing large numbers of unemployed and dissatisfied youths. Thirdly, and most importantly, because secondary and further education play such a crucial role in the elites' natural desire to ensure a similar status for their children, it is extremely difficult to get accepted any significant change. From the viewpoint of existing elites the need for change in further education is far less apparent than at the lower levels; and thus the inevitable resistance is much greater.

In this paper I will therefore concentrate on a few marginal changes to the further educational system, not because I believe that only marginal changes are needed, but because outside one or two countries the socio-political situation will only allow marginal changes to take place. In addition I will concentrate my attention on two types of change: change in order to make the system more relevant to the existing needs of society; and changes to make it cheaper. However, it should be borne in mind that my previous comments*** on teaching methods, selection process etc., apply just as much to further education as they do to general mass education.

* In the context of today's discussion by secondary education I mean the cycle immediately following the general mass education system.

** See "Education and Development - New Strategies to reach the poorest - Reports and Studies Series, EPP, Unesco, Paris, 1977

*** Idem
II. Some Basic Considerations

Though in most poor countries the further education system is even more a copy of the system that exists in developed countries than is the case with elementary education such a transfer of institutions is just as unjustified. This is for several reasons:

1) In developed countries the educational system expanded after modernisation of the economy and industrialisation, thus not only was education seen as a way of producing people to fill the elitist positions in society (otherwise expressed as the high level manpower positions in the economy), but also as a consumption service - education for education's sake. In addition as the expansion followed considerable growth in G.D.P., and the achievement of universal general education, large amounts of resources were free to be allocated to this expansion. In the poorer countries, however, further education is expanding rapidly before modernisation, and universal general education has been achieved and before G.D.P. has grown sufficiently to allow there to be consumption education. Thus, whereas the development process in rich countries took place with insufficient numbers of highly "schooled" people to fill all the elitist positions, in poor countries it is taking place with a surplus of such people.

2) In the richer countries the further educational system only has to serve the technical and professional needs of the modern sector of the economy, whilst in the poorer countries it has to serve the technical and professional needs both of the modern sector and for the development of the traditional rural sector.

3) Even within the modern sector the requirements are likely to be different, for though the modern sector is similar in both poor and rich countries, in the richer countries much of the practical training needed can be carried out on-the-job using the existing pool of workers with considerable industrial and other modern sector experience. In many poorer countries there is no such pool of modern "skill models" and thus if there is a rapid increase in the demand for a particular skill, or if absolutely new skills are needed, then only some types of formal practical instruction can satisfy this demand. I am not of course suggesting that viable non-formal training schemes should ever be replaced by formal schemes, but an only saying that in the poor countries the formal system might have to concentrate more on practical training, due to an absolute lack of non-formal training opportunities in certain fields.

4) In rich and poor countries alike, the further educational system and its examinations is used as a way of restricting entry into certain professions in order to ensure continued high earnings for those working in the particular field. Though in developed countries the high "qualifications" insisted upon are not easy to justify, in the poorer countries - where the dualistic structure of the economy and society constitute a major problem, and the insistence on high qualifications ensures that the majority of the population are denied absolutely essential services - such a policy has entirely detrimental effects. For example most countries train all their doctors to international standards. Not only is this incredibly expensive, and thus only a very limited number can be trained,
but also these doctors, because they are trained to international standards (however irrelevant these standards might be for curing the simple ailments afflicting the mass of the population) expect international level salaries which can only be obtained through emigrating (which is easy as there is a synthetically induced doctor shortage in most countries) or through establishing private practices in the towns, neither of which is helping solve the most important medical problems faced by their countryman.

5) Finally, in the richer countries where large resources are devoted to personal transportation, great specialization does not cause insurmountable problems for the mass of the population. However, in the poorer countries, where few resources are available for personal transportation, the super specialization inherent in modern higher education institutions again denies large segments of the population essential services. In traditional societies most of the services the population needs can be found within walking distance, but in modern societies everything is so specialized (pediatricians, hematologists, obstetricians, and dozens of other medical specialists, with similar subdivisions in most other professions) that few specialists can be found in any particular locality, and thus a large amount of travel is essential. But in the poor countries resources are not available for such travel.

Thus one basic criterion for any change in the further education system is that systems and curricula should not be copied from rich countries, but should be worked out so that they meet more closely the existing needs of particular countries. An ivory tower university, operating at the highest international standards, concentrating on academic and specialist professional training and pure research might be a useful symbol of development, but its actual impact is likely to be considerably less than one operating from a shed, concentrating on easily applicable research, and a lower level of problem solving orientated training.

Thus a necessary precondition is to analyse the qualifications supposedly needed for each profession, and taking account of the problems that must be solved in the particular country and separate the interest group needs from the real needs. Such a policy concentrating on teaching less, but teaching more the essentials has been a central part of recent changes in further education in China, and has enabled secondary and further education courses to be greatly reduced in duration (by more than 50 % in most cases) with a consequent reduction in resources devoted to elite education.

Such a change could so conflict with the interests of the elite that in many countries it might prove necessary to develop a dualistic further educational system; one part receiving no government subsidy concentrating on training people for export and for satisfying elite needs, and the other, highly subsidised, concentrating on shorter and more relevant training to solve some of the problems faced by the mass of the population. There is certainly no need to internationalize the whole system. In fact there would be immediate positive returns (through reduced brain drain) for any country that decided not to have all parts of its further educational system according to "international
standards". I am not of course suggesting a second class system, but a first class, relevant and cheap system.

"Many of the basic criteria for educational change applicable to rural general education are equally applicable to secondary and higher schooling. For example such schooling should train people so that they can help others in solving particular problems; should be integrated fully with society; should involve students physically as well as mentally; and should incorporate a selection and examination process which influences only slightly what is taught, and which should also give special chances to children from more deprived sections of the population. In addition it should not necessarily involve full time study, but should involve adults as much as possible in part work, part study programmes; nor are buildings or "qualified" teachers essential. Finally it should be relevant and as cheap as is consistent with operating an effective programme."

In addition to the above logically justifiable criteria there are others which subjectively I feel should be included. But as their acceptance is largely dependent on the values existing in the particular society they could be considered as of less universal importance than the criteria already mentioned. For example, I believe that secondary and further education should prepare people to accept the possibility of living and working in rural areas; should give future elites some real experience of other (poorer) people's life and role in society; should involve the students in administration, financing, teaching, and menial tasks related to their education, and finally should not necessarily be a continuum, with one level of education immediately leading to the next but should be so designed that students can join and leave any particular sub-system at any age, with a wide range of different qualifications and experiences.

As I have already mentioned, because of the heterogeneity of secondary and further educational systems and other reasons, in the remainder of this paper I will concentrate on a few proposals (that have some chance of implementation) only affecting parts of sub-systems. No attempt will be made to suggest utopian changes of the entire system.

III. Relevance

The improvement that I am suggesting in this section can take place whether or not there have been significant changes in mass general education. In fact the need for these improvements is considerably more pressing if there has been no transformation of general education.

As I have already mentioned the degree of public interest in secondary and further education is so great that virtually all possible improvements have been widely discussed, and many have actually been tried out on a small or large scale. Thus the innovator in his attempts to introduce some of the proposals suggested below is in a stronger
position (as long as he does not challenge the elite producing functions of schools) than if he was trying to transform elementary education in a direction similar to the one proposed. This is because he can call upon the results of concrete experiments, as well as various authorities, to support him.

Before going on to put forward a few specific proposals for particular types and levels of education, I will make some suggestions applicable for all types of further education.

In order to prevent the complete separation of future elites from the mass of the population, all full-time students (and preferably teachers also) should be involved for at least a month a year (during vacations) in agricultural work, during peak periods. This should apply as much to students originating from rural areas as those from urban areas, as the former are as likely to reject rural life because of its "primitive" nature as the latter. The introduction of agricultural work (as has already been done in Cuba and China) as an integral part of the curriculum is likely to serve three main functions. It helps prevent a complete dualistic division of society, it will show the students that those who excel in academic work are not necessarily the same as those who lead and excel in agricultural work; and finally as the students need only be provided with food such unpaid work might help provide a slight boost to rural incomes.

Throughout the rest of the year (again as an integral part of the curriculum and taken account of in the final evaluation of the student), all students should involve themselves in some community development activities in their neighbourhood. This could take many forms, from the construction of community amenities to participation in adult education or literacy training. In addition the majority of administrative and menial tasks in schools (from cleaning classrooms and washing dishes, to looking after the library and keeping school records) should be carried out by the students (as is increasingly done in Tanzania as well as in some Teacher Training schools in Thailand) and also they should assist in teaching the junior pupils (there is no better way to learn a subject than to teach it).

These proposals taken together would help prevent the isolation of the school from real life, would give students some direct ideas of the position of other less favoured classes, and would help motivate the student towards serving his less fortunate brethren during his working life.

Just as the student should not be isolated from the surrounding community, nor should the physical plant of the school. Thus all educational buildings should not only be designed so that they can serve other useful purposes when not being used as a school, but also so that the general public can observe and participate to some extent in any formal educational activity taking place (one such open experimental school with an observation verandah around each classroom, and with chairs which one way up fit children and another way adults, has been constructed in Sri Lanka).
Finally the selection process for subsequent levels of education should not entirely be based on academic achievements, but should also take account of the student’s service to the community and his participation in the running of the school. In addition an increasing number of places should be reserved for people who have already worked for some time.

a) Secondary Schooling

I am continuously surprised about the irrelevance of much of what is taught in secondary schools in poor countries. Even ignoring some of the most extreme examples such as the French history classes in Laos (our forefathers the Gaulois), and the history of the British Empire, in some African countries, most courses from language to science are entirely academic, and reflect the past situation in developed countries rather than the expected future of the student’s own country.

The present curriculum neither helps the student cope with the complexities of urban living nor does it teach him how to learn by himself. Instead the concentration is so much on preparing students for further education that many of those who fail are not equipped to play any useful role in society. Admittedly it does prove to employers that its graduates might be able to put up with a boring and repetitive job in an enclosed situation, as they have already put up with such a situation for several years, but even this dubious advantage is often counteracted by the inflated expectations of secondary school leavers, so much so that employers frequently prefer lesser schooled people.

In general the conventional secondary school graduate in a poor country either is fortunate enough to go on to further education or waits around unemployed until someone gives him a clerical job. He is unlikely to take entrepreneurial initiative (unless he comes from a background with entrepreneurial traditions) because his schooling has led him to believe that someone else always has the answers, and also that after being given schooling he deserves to be given a job.

Some developing countries have experimented with comprehensive secondary schools. Such schools normally downgrade the importance of examinations and streaming, include a considerable amount of practical work in the curriculum, and allow the student some freedom in selecting the subjects that he will study (though of course the student knows that if he concentrates on academic subjects he has a better chance of proceeding to higher education).

These comprehensive schools, though separated from the community, are a definite improvement over the conventional academic school. However they are normally far too expensive (at least 50% more costly per student year than an academic school) for widespread introduction. As an alternative I would suggest that a new type of comprehensive or practically orientated secondary schools be established which would associate themselves with various local industries and service enterprises. Each student, as well as studying a very much reduced academic curriculum would also choose to become involved in a particular enterprise (a factory or workshop, police station, or hospital etc.) and would not only work on a part time basis in that enterprise, but would also have much of his remaining learning related to that field of activity. For example if he was associated to a textile factory, in history he would
study the development of the textile industry in his country; in economics the relationship between raw material and labour costs and the final price; in social science, the organisational structure of textile production, from the cotton grown by the peasants to the final use made of the finished products as well as investigating the lives of the various people involved in different parts of the process; in English, the concentration would be on business English; in science, dyeing, and the methods used in growing good quality long staple cotton, and so on. In this way the student would not only have a relevant core on which to build all his new knowledge (it would be less likely to be forgotten). In addition, if he fails to go on to further education he would at least be partially equipped for employment (in a textile plant or similar enterprise), and if this were not possible he would have some of the background needed for entrepreneurial activity.

Obviously, however, the profitability of businesses might be reduced if they have to organise some form of training for secondary students. However, the number of students enrolled in secondary schools is considerably smaller than the number enrolled in elementary schools; and thus though this problem exists its solution does not require a complete change in the philosophy of running enterprises of various sorts. Some of the costs borne by the industries in providing a learning environment of no direct benefit to themselves could be defrayed both from savings in school costs (employing fewer teachers and using fewer permanent buildings) and through the labour of students (which if available quite regularly could enable the employer to reduce his wage bill. Though no calculation is available it is likely that the savings in school costs alone would be more than sufficient to offset the losses to the enterprises, and thus sufficient compensation to businessmen could be made to ensure that the scheme becomes attractive.

In rural areas it would be harder to arrange for the student to have a significant number of possible activities to choose from, but apart from this one constraint, a similar immediate environment orientated curriculum could be drawn up, centering around the local agricultural, vocational and commercial activities.

A school similar to the type described above has been established on an experimental basis in the U.S.A., and the preliminary results are very encouraging. The Parkway High School in Philadelphia is designed "to help the student live learningly within his present life space". The "school" has no classrooms or laboratories, only offices for the teachers. Local institutions such as the zoo, the science museum, the police department, an insurance company, a T.V. station, a newspaper, etc., have agreed to run courses for the students and to involve them in their activities. Other courses are held anywhere (in a café, in the park, in a teacher's home or for example Spanish courses are held in the Spanish quarter of the city). Finally students have to attend a two hour tutorial group three times a week to discuss their programmes of study and any problems they might be facing.
Another alternative suggested by Harold Povey, former U.S. Commissioner for Education, involves bringing the community to the school. Instead of constructing a conventional school, fewer classrooms and laboratories would be built, and in their place, stores, workshops, beauty parlours, clinics and so on put up. These facilities would be leased at a particularly low rate (if not free) to local businessmen, on condition that they would not only participate in the teaching, but would also allow students to become actively involved in their enterprises. Obviously this suggestion would only be viable where land was available in a central location, for otherwise only subsidised premises. Also attention would have to be paid to ensure that the enterprises invited were in fact typical in that particular locality, and thus what was learnt by the student would be of some use in helping him find employment after graduation.

In conclusion to this section it can be said that it is not particularly important which of the two alternatives suggested are accepted, as long as secondary education and the surrounding community are closely integrated. Either the school should expand into the surrounding community or the community be brought to the school. One of the two (or some combination) must be introduced if the present irrelevance of secondary education is to be overcome without involving too high expenditure.

b) Vocational and Technical Schooling

Partly because of the difficulty ordinary secondary school graduates have in finding employment, partly in order to reduce social pressure for expansion of elite producing types of education, and partly in order to produce qualified skilled and technical man-power needed for both modernisation of the economy and industrial development, many of the poorer countries have placed considerable emphasis on the expansion of technical and vocational schools.

In general most vocational and technical schools have not achieved their original objectives. Far from reducing social pressures for expanding elite forming types of education they have often generated insurmountable pressures for the creation of new channels of elite formation. In addition, not only do technical and vocational schools usually have to include a large amount of academic instruction in their curriculum so that their students still have a chance to return to the mainstream of the educational system (thus largely defeating one of the original purposes of such schools for the benefit of only a very small proportion of graduates), but also many countries face irresistible pressures for upgrading technical colleges to degree or postgraduate level institutions, thus opening up an entirely new channel of potential elite formation and halting or reducing production of the type of man-power (high level technicians) most likely to be able to find employment.

Even without these changes, vocational and technical schools have seldom achieved their objectives, for their organisation and curriculum have rarely been flexible enough to cater for the changing employment needs of industry. Nor have they generally been equipped with the wide variety of machines (both modern and old) available
even in homogeneous sub-sectors of industry. Thus the graduates of such schools are often not trained in a way which makes them attractive to industries (in addition they have not usually had any industrial experience). Despite this fact these graduates usually expect higher salaries than industries are prepared to pay.

Thus despite the original objectives of such schools vocational and technical graduates, trained in one particular subject, often following an outdated curriculum, are usually just as likely to be unemployed as their secondary school cousins. This is particularly serious as the costs of such schooling are usually several times higher than those of ordinary secondary schooling.

In most of the richer countries there is decreasing emphasis on vocational (except pre-vocational schooling, where the student is supposedly taught a process of acquiring skills rather than a particular skill) and technical schooling, these institutions being replaced with on-the-job training and apprenticeship schemes supplemented with some part time theoretical classroom instruction. In most poor countries there are also various small non-formal schemes with similar functions.

As the main justification of technical and vocational schooling is that it produces the manpower needed by a rapidly expanding and technically innovative industrial sector, the organisation of such schooling should take account of this objective. It has already been mentioned that the poor countries cannot rely entirely on industry to train all their skilled personnel needs, as very often there are insufficient "skill models" to carry out such informal training. However if any formal vocational and technical training scheme is to have any chance of success it should be at least based on the following criteria:

- Skill training is not a once-in-a-lifetime activity, but is likely to have to be repeated as technology or the job mix in the economy changes.

- It is very difficult to simulate industrial experience in a school environment, particularly where the cost of equipment and materials is high. Thus most practical work should take place on-the-job.

- As most students from academic schools usually choose vocational schooling as a last alternative, and as they have little if any work experience, there seems to be little point in giving vocational training to such students in any specific skill. This is particularly so as there is no certainty that those students will be employed on completing courses. Thus, as a general rule only those who are already employed should be given formal vocational training, though this training could be either for their present positions, or for new ones promised by their employers.

- Academic qualifications do not indicate a person's technical or vocational ability, and thus their importance should be downgraded in selecting participants for skill training programmes.
No new system of vocational or technical training will have much chance of wide scale acceptance whilst existing systems with their elite forming pretensions are still in operation.

If these criteria are accepted, then all existing vocational and technical training schools should change into institutions offering sandwich courses (alternating periods of schooling and work) day release courses, block release courses (one time intensive training of workers lasting from a few weeks to a few months) and evening courses. Only those who are already employed, or who have a definite offer of employment should be allowed to enroll, and the training should be so organised that most of the practical experience actually takes place on the job (with or without the participation of the school staff). People of any age, with quite low academic qualifications should be allowed to participate.

The schools should concentrate on providing the necessary theoretical background directly related to the students' actual employment (and academic instruction if literacy, language or calculation skills are also needed) in forming attitudes conducive to effective work with machinery and equipment, on transmitting information about safety and hygiene precautions that should be taken, and on giving prospective foremen and supervisors experience of personnel and workshop management through their participation in simulation games and other activities. The staff of the schools should also be available on request to help supervise practical training in the factory or enterprise, and to mount full time short pre-employment courses for industries being established.

In other words the concept of vocational and technical schooling should be changed from that of providing continuing schooling for adolescents who fail to make it to further education, to that of serving industry and carrying out its training. Pre-vocational training should be provided (as suggested earlier) by ordinary secondary schools in conjunction with various enterprises.

If such a change in the function of vocational and technical schools were accepted, then not only would the cost of producing one person with a particular skill be considerably reduced, but also it would be possible to finance the new scheme by imposing a special levy on the industries benefiting.

There is nothing particularly innovative about the above suggestions. Similar small schemes exist in most poor countries from Colombia to Thailand. It is only the proposal that such training should be restricted to those already employed (or with a definite offer of employment), and the suggestion that all vocational and technical schools should either close down, or change their role, that have not been accepted by most countries. Both these innovations however, are essential if vocational and technical schooling are not to continue wasting large amounts of scarce resources.
c) Higher Education

In this section I will restrict my comments to medical training not because this is the only professional field of training in poor countries which involves incredible irrationalities (professional training in virtually all fields is not designed to meet the needs of the poorer countries), but because the present situation with medical training is even more ridiculous than is the case with most other types of professional formation.

In Thailand for example all doctors are trained over six years to international standards at an incredibly high cost. (The total cost is more than 70 times the average per capita income). Most doctors are then given post graduate specialist training. Within five years after graduation 90% of doctors go overseas for further study and employment, and though mostly eventually return, a large number stay away for a very long time. Of the doctors actually working in Thailand more than half are in Bangkok, and the majority of the remainder are working in other towns. (Urban population is about 15% of the total in Thailand).

The situation with nurses is not better. Though at present hospitals are staffed at less than 50% of their required strength (with obviously fewer shortages in Bangkok, and much greater understaffing in other parts of the country), the emphasis on nurse training is to discontinue the lower levels of training, and to concentrate on producing nurses up to international standards even though it is known that a considerable proportion of such nurses emigrate, and unlike the doctors they seem to emigrate permanently.

The position in Thailand, with large sums of money being devoted to training medical personnel either for specialist practice in the towns or for export, whilst people in the rural areas continue to suffer from easily curable diseases is by no means unique but exists in the majority of poor countries. It is the result of pressure from both internal and external interest groups.

Many schemes for training barefoot or assistant doctors have been carried out in the past, but most of these have been discontinued (even in countries such as Tanzania, with egalitarian philosophies and rural transformation emphasis in their development policies) through the myth of the danger of under-qualified medical practitioners perpetuated by the interest groups of the medical profession.

In the scheme for rural general education that I have outlined elsewhere, most community centers would be likely to have at least one health worker qualified to diagnose and cure a few simple ailments and able to refer other cases to the locality health center or district hospital. In such a scheme higher qualified personnel would be needed to staff a locality health center, supervise the health "agents of change" and to train some of the supervisors and agents.

In countries not envisaging transforming their rural educational systems the need for producing a middle level of non brain-drainable medical personnel to work in rural areas and diagnose and cure a limited number of simple diseases is even more pressing.

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* See first part of this document.
However, in the majority of countries, pressures from the elite (who are used to specialist attention and who perhaps want their children to take up high paid positions overseas) are likely to prevent any complete change in medical training to make it more relevant to the priority health needs of the country. I would therefore suggest a dualistic system of medical training. One part involving normal six year plus post graduate specialist training, this part being designed primarily for export and for serving private elite needs, the other part involving say four years practical training in diagnosing and curing simple ailments and including a period of internship in a village health center with an experienced health worker.

Governments should not subsidise the cost of the first type of institution at all (and might perhaps insist that the fees be paid in foreign exchange) but should support the lower level of training, including further specialist training of a few very able practitioners who have worked for some time, in order to meet the requirements for specialists in public central hospitals. Neither the training of the new type of doctors nor the new type of specialist would attempt to meet international certification requirements (in order to prevent brain drain) though there is no reason to suppose that this training would in any way be substandard.

In other words it is suggested that governments should concentrate their support on a medical education system that would not only help solve the real health problems in their countries, but would also stop the immense brain drain from taking place. If necessary a self financed scheme for training doctors to meet elite requirements and for export, would be allowed to operate alongside the main, more relevant system.

Those medical interest groups who would argue that such "substandard" doctors might cause more problems than they would solve are on very weak grounds. The alternative open to the mass of the population would then be either seeking advice from traditional health workers (witch doctors or herbalists) or self prescription. If a four year trained doctor is more dangerous than the above alternatives, this does not say very much for modern medical education.

This brief discussion on relevance has centered around the need to diminish the separation between study and employment. If the function of secondary, vocational and higher education is largely to provide people with the skills they need for future employment (as it must be in any society where large numbers of people have no formal education at all) then the present division between schooling and production must be reduced, as it does not seem particularly sensible to train people in an environment completely different from the one in which they are likely to work, nor does it seem sensible to try to duplicate factory conditions (with the expensive equipment needed in the school). Thus an increasing proportion of further education should take place in factories, health centers and other places where the student might eventually work. Not only is such a policy likely to reduce costs*.

*If an industry has to cater for a large number of students not in its employment, then problems of organizing the work might be faced which could reduce profitability. In such cases some of the savings from schools might be given to the enterprises to help them offset their losses.
by decreasing the numbers of buildings and teachers needed, but also it is likely to lead to a better type of training much more closely related to the needs of the particular country. Thus urban development could be speeded up, whilst at the same time freeing greater resources for rural education and development.

IV. Reducing costs, raising new sources of revenue, and reallocating expenditure

It is difficult to devote increasing resources to rural general education because secondary and further schooling are expensive in poor countries, both in terms of G.D.P. per capita (whatever significance this has) and in terms of the present per pupil costs of elementary education.

In Thailand for example, comparing the per student costs of secondary and further schooling with those of primary, it can be seen that secondary schooling is three times as expensive, vocational six times as expensive, technical ten times as expensive, and higher education averages about 15 times more expensive than elementary schooling. In other words it costs the same to keep one student in university as it does to keep fifteen children in primary schools. The range of costs is typical of those existing in many of the poorer countries.

As the major effect of further schooling is to increase a person's status and the salary he can command, and as a large proportion of further schooled people are employed by governments, we have the strange situation of governments spending large sums of money on schooling a few people so that after graduation governments will have to pay those same people much higher salaries than would have been the case had not the people had such expensive schooling.

Whilst the costs of further schooling are so high, it is difficult to satisfy even the unavoidable demand for higher school places for a small proportion of the total population, without absorbing a large share (usually around 50%) of all the resources available for the education of the entire population. Thus if a significant amount of money is to be devoted to mass general rural education, then the expenditures (at least those born from public sources) on further schooling will have to be reduced considerably.

Some of the proposals already outlined in the previous section would result in considerable savings, but even more could be done to ensure that not too high a proportion of resources available for education is devoted to secondary and further schooling for the few.

Thus in the following paragraphs some suggestions will be made on how to reduce the unit expenditures of elitist schooling without adversely effecting what is being taught. Most of the suggestions that will be made are not new, but have been tried out in some countries. Thus the job of the innovator in obtaining acceptance of such schemes will be made that much easier.
a) Multi-Shift Operation

At present most schools operate for only about six hours a day for two hundred or so days a year, with teachers having an even lighter direct work load. Thus the school plant is only used for about 15% of its theoretical maximum utilization, and the unmotivated teacher (who does not spend much time on lesson preparation, marking and extra curricula activities) has to work only about half the number of hours per year worked by his civil service or privately employed colleagues.

Any enterprise that used its physical plant, and personnel to the same low extent as do schools, would quickly go bankrupt and close down, but schools even in the poorest countries manage somehow to justify a continued low level of operation. However, there are few valid reasons why all existing schools should not eventually be able to operate on a two shift basis, and in addition the majority should be able to be opened in the evenings, either to provide part-time schooling for people not free in the day, or merely to allow various community groups to use their facilities.

Double shift operation of some schools takes place in many poorer countries, particularly in urban areas. In a typical instance the school is open for six days a week instead of the normal five. The first group of students arrive at 7 a.m. and finish at 12:00 noon, at which time the second group enters to finish at 6 p.m. In some cases (though not nearly so often) these schools provide evening instruction from 6 p.m. to 9 p.m. as well.

Obviously no country should double or triple shift all schools overnight, for this would entail a doubling or trebling of student numbers with the consequent problems of unemployment and unfulfilled expectations. Also if this happened total expenditures on the particular type of education would rise even though unit expenditures fall, and thus our original objective (freeing greater resources for rural education) would not be achieved. However, if the normal restricted increase in enrolments was to take place by double, and later even triple shifting schools, enrolments could probably increase for at least a decade or two with virtually no capital expenditures. As usually 25% or more of secondary and higher education budgets are devoted to capital items, this saving would be significant. In addition, due to greater utilization of teachers and other factors, unit recurrent costs in double shifted schools can be as much as 20% lower than those in ordinary schools.

For higher educational institutions the same arguments apply, except that there is no need to introduce shifts, but merely to use all available facilities for 15-18 hours a day.

b) Full Year utilization

Though multi-shift operation of schools can save considerable amounts of money, there is still a potential for further increases in utilization. Most schools and universities are closed (on holiday) for around three months of the year. It is, however, possible to operate such educational institutions throughout the year, staggering the holidays of both staff and students. Whereas now all students take their
vacation at the same time, and thus the schools are closed for three months a year, under one of the many full-year utilization schemes available* one quarter of students would take their vacation in the autumn, one quarter in winter, etc., and the staff would only have say one month's holiday a year instead of the present three months. In this way one third more students could be schooled with no extra capital expenditures and only a slight increase in recurrent costs.

Such a scheme has various other advantages. For example, where boarding facilities are provided, this will also permit greater utilization of these facilities which would not be the case with double shift operation. More importantly, it would enable the school to provide to local enterprises a supply of labour throughout the year (all students perhaps devoting half their vacations to such an activity). In this way part of the high costs of schooling could be defrayed with the product of the students' work.

c) Voucher System

For countries interested in equalizing the distribution of public resources for education amongst the population, the voucher system is an ideal instrument. As at present far fewer public resources per capita are devoted to schooling poor people in rural areas than are spent on schooling children of the elite in urban areas, a scheme whereby all people have equal public resources for education would produce a very great redistribution of public educational effort away from urban areas to the rural areas where they are most needed.

The voucher system in its simplest form involves either dividing the total available educational resources in any one year equally amongst the eligible population (for example, all people in a certain age group), or allocating to each child (say at the age of five) an educational credit to be used throughout his life (or throughout his childhood). In both cases, vouchers of a certain value would be given to those eligible, and these vouchers could then be used to pay for approved educational activities chosen by the parent or the child. The vouchers would of course be non-transferable, and all schools and other educational activities would charge a fee sufficient to cover all expenditures. In most societies parents would be allowed to supplement the vouchers in order to provide more schooling or a better education for their children.

Though certain modifications to the scheme in its simplest form would have to be made to ensure that secondary and further schooling did not remain the preserve of those who had enough money (obviously on average most poor countries could not afford to provide each person with vouchers equivalent in value to five or six years of elementary schooling) this programme would certainly allow there to be a considerable increase in rural educational efforts.

* For a description of many such schemes see my Cost Evaluation in Uganda, IIEP, Paris 1972.
d) Student loans

As the main objective of most people who pursue further education is to increase their earning capacity (and social status) there seems to be no reason why students should not pay the full cost of their further schooling (as they are the main beneficiaries). However, if all secondary schools and universities charged an "economic" level of fees, then opportunities for further schooling would be even more restricted to the children of the rich than is presently the case. Thus I would suggest as another alternative that all educational institutions above the mass general education level should charge an "economic" level of fees, but that a loan to cover the cost of the high fees should be given to any student who needed one. This loan would have to be paid back within a certain number of years of the student's final graduation. Though considerable ingenuity would be needed to ensure a good level of repayment*, this loan scheme would ensure that those who would be likely to benefit from elitist schooling would also be the ones who would eventually pay for it, thus again freeing a large proportion of resources presently devoted to higher schooling for expanding and improving mass development oriented general education.

This scheme would also be likely to result in other, indirect advantages. For example as each institution would have to charge fees sufficient to cover all their expenditures, those institutions paying no attention to economy would charge much higher fees than other, and thus in the long run (as the loans for the fees have to be repaid) might find it difficult to attract students and therefore they would have to reduce their costs. In addition, if the repayment were made legally binding (with guarantors), the present situation in many poor countries with large numbers of educated unemployed (and thus the majority of people would be aware that schooling does not necessarily lead to a high salary) would tend to discourage many people from continuing their schooling. This would thus reduce the social pressure for school expansion to more manageable proportions.

e) Self financing

In China, through the large scale involvement of schools in productive activities, and through the use of ordinary people as teachers, it is claimed that the majority of schools are self-financing. Though in most countries it will not be possible either to involve students in production or to involve non-teachers in teaching to the extent that is done in China, there is some scope for such activities.

* Perhaps certificates would be put to good use at last, with the loan outstanding and the repayments to date marked on each person's diploma. Employers (who in any case like to see these certificates) would have by law to deduct automatically from a person's salary the necessary repayments. Another possibility would be to have loan contracts involving collective responsibility, all students in a particular class being collectively responsible for each other's payments in case of default.
For example, in Thailand if a non-teacher is asked to speak to students the person will consider this to be an honourable and prestigious act, and thus is likely to agree to do this either for nothing or for only a minimal fee. In addition in some schools the students construct buildings, run canteens, grow crops, organise fairs, film shows and music and drama performances, all of which raise revenues to be used by the school.

All that I am suggesting here is that activities already being carried out in a few schools be carried out at a higher level in all schools so that considerable revenues are earned (or savings made in the case of using unpaid volunteer part-time teachers) and that some of the resources that in the past have been provided by the government can be redirected towards mass general education.

In this section I have shown that if there is a motivation on the part of policy makers to reduce the financial burden on government of elitist secondary and higher schooling, there are many possible alternative schemes which could have a significant impact. Any change obviously involves difficulties, and thus just because most of these proposals do involve problems (which can be solved as has been proved in one country or another) is no excuse for not attempting to ensure that the limited resources available for education have the greatest possible impact. In addition to the problems likely to be faced in implementing some of these schemes, such implementation is also likely in some cases to produce indirect benefits consistent with many of our educational objectives.

My purpose in outlining these cost reducing, revenue saving and reallocation proposals is to show that it is possible to devote considerably greater resources to mass general education than have been allocated in the past without any increase in total educational expenditures. However, there is no way of ensuring that the resources freed will be used for rural education, and in many situations they are just as likely to be used for further expansion of elitist schooling or for increased defense spending. Thus in cases where there is no commitment to rural development the decision on whether any of the above alternative proposals are introduced should perhaps depend more on the likely indirect benefits than on their revenue producing and saving potential.

V. Conclusions

Throughout this paper on secondary and higher schooling I have felt somewhat uneasy because there has been an internal conflict between my pragmatic ideas and my philosophical beliefs. Tolerant with mass general education I am convinced both philosophically and pragmatically of the possibility of significantly reforming the system in a way similar to the one I have suggested, and am also sure that such a transformation would have a positive impact on the quality of life of large numbers of people, I cannot claim the same for elitist education.
Primarily my uneasiness is caused by the fact that philosophically I cannot identify with a system whose main function is to allocate unearned rewards in an egalitarian society (be it China or the U.S.A.). If the purpose of further schooling was solely to provide professional and other skill training there are more efficient methods (using various forms of on-the-job training and skill models); if the purpose is to encourage a spirit of learning and enquiry in society, Illychian networks and other alternatives would be likely to be more effective; and finally if the purpose were to produce real development and solve the most pressing problems of society then a completely different system would be needed. Though all of the above would be included in any list of objectives for higher schooling, the main emphasis still remains the certification and reward allocating functions. This is what is expected from the system by society and this is what the system does quite well (as is proved by increasing correlation between earnings and level of school achievement).

Thus in the first main part of this paper I have made suggestions on how to make more relevant and indirectly more useful a part of the educational system whose main function philosophically I cannot accept, but which pragmatically I realise cannot be changed. In the second main part I have suggested how resources could be diverted from secondary and higher schooling, but again without having any conviction that these resources will be used in the way in which I would hope.

Nevertheless, being a reformist rather than a revolutionary, I do not believe that all changes should wait until the new Utopia starts to rise from the ashes of the old society, and thus though the proposals I have made do not solve all the problems and shortcomings of the present school system, they do solve some and thus are by themselves worth attempting.