TRAINING TEACHERS FOR EDUCATION IN RURAL AREAS

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Introduction

1. Education has long been recognised as the key to development and the recent history of developed nations bears witness to this fact. Yet time and time again education of rural communities has had the disturbing effect of triggering off their migration from the land to large towns, without effecting the desired social and economic development of the rural areas. Most people agree that education provides the means for securing a better life, but feel that this latter can only be obtained in large cities and towns. So with whatever level of education they acquire they set off for the bright lights leaving the villages undeveloped. Perhaps the type of education being provided has contributed to this situation, as it has been considered to lay too much emphasis on training for white collar jobs. Thus the notion has still in many countries to be destroyed that educated, and, in some cases, merely literate, people should not work on the farm.

2. The question has been how to provide the necessary education and at the same time induce the rural populations to stay on the farm. It is suggested that they could be made to see the benefits of staying on in concrete terms, in the form of increased agricultural production, more financial benefits, better community development, better life, and the resulting pride in belonging to a growing community.

3. While it is true that numerous schemes have been tried without much success in the past, it is suggested here that perhaps the right kind of teachers, trained specially for the role of agents of socio-economic change, will at last bring about the desired results. The instrument of such change will be a fitting education tailored to serve rural communities in particular. What follows below is a scheme designed to meet these requirements, with special reference to developing countries. The job to be done seems particularly difficult and calls for great patience and sacrifice on the part of individuals. But it looks like being the only answer at this stage and is

certainly worth giving a try.

What sort of education for rural areas?

4. I would suggest that rural areas need education in four dimensions, namely:

(a) Education for social and cultural change;

(b) Education for economic change and agricultural improvement;

(c) Education for technological change and industrial improvement;

(d) Education for self-reliance and national improvement.

(a) Education for social and cultural change.

(i) Education is a passport for social mobility and the more there is the more the social structure changes. The 'average' thus alters so that there is a gradual social movement which has to be directed towards cultural change. More education should also mean better education if it is not to lose most of its effect.

(ii) In this light education has to aim at the development of new attitudes towards the conditions in the rural area. Generally, new attitudes to nutrition, child care, the role of women, home management, health and disease, should all go along with improved education. But, especially in the rural area, a new attitude to manual labour is vital if the enhanced social status is not to go with snobbery and the rush to the towns. Along with this should go new ways of doing things directed towards easier labour and more efficient performance. This will bring in new ideas and new ways of living. Especially important also is a proper sense of the value of leisure and recreation which enhances productive efficiency, and so brings in higher income. People also need a proper sense of the value of money and how to use it wisely.

(iii) The revised sense of values so introduced will increase the social responsibility of the individual. He thus comes to take his share in the provision of social amenities - schools, community centres, water supply schemes, etc., which should be the collective responsibility of the villagers, as indeed it is already in some instances.

(iv) It is being suggested that the teacher's role in all this is to give leadership and to train his pupils along such lines that they will come to accept such changes as natural and necessary for a better social life. The teacher should by training be equipped to act as the spearhead for cultural change in this way as well as by exerting a direct influence on local music, dancing and other social customs.

(b) Education for economic change and agricultural improvement.

(i) Education for economic change and agricultural improvement is in fact the most obvious kind of education of which the rural areas are in need. Technical information and services are among the prime requisites for moving from a traditional agriculture to modern levels of production and marketing. While the institutions of higher learning and of research can be expected to provide the basic services needed through applied research, extension programmes for farmers and teaching programmes soundly rooted in science and scholarship, the rural folk must have the necessary level of literacy (scientific and otherwise) in order to benefit materially from the extension services.

(ii) Thus the child at school requires education about improved crop production through better agronomic practices, improved live-stock production through better health care and management, better (i.e. more efficient) systems of land use, more efficient systems of marketing, drying, storing and packaging produce for transportation, ways of extending the normal crop season and so on. In short he needs the education that will teach him now

to farm better than his father, and how to use extension instruction and advice to make more money.

(c) Education for technological change and industrial improvement.

This is an age of machines and automation, when the burden of labour can be lightened by getting machines to do the drudgery. Thus any fitting education for rural areas must include an understanding of how machines can do the work and how the machines themselves work. Thus technical education is indispensable in this connection. The farmer has to be a technician of some sort and the more capable he is the better. Then he can care for his tools and his equipment. There is even scope here for some creativity in adapting foreign technology to local conditions and in developing some intermediate technology to cope with requirements on a smaller scale. This is where the industrial improvement comes in. For there are quite a few cottage industries on which small villages can thrive with judicious investment and management. From small beginnings big ventures can, with patience, ultimately arise.

(d) (i) Education for self-reliance and national improvement is gradually being forced on us all nowadays by the drying up of external aid funds. This is a general education for all, but is particularly applicable in rural areas where development schemes often come as an afterthought of the national planners. A better life comes sooner through self-help than by waiting for government funds to become available. Thus rural people require the kind of education that should enable them to see their problems clearly, to investigate different methods of attack and devise solutions, and then to implement the solutions. They should be given the sort of lead that would make them take pride in the village to which they belong rather than desire to migrate to a large town. They should be in a position to have the emotional satisfaction of seeing their locality grow into a prospering township through their own initiative and endeavours. They should be equipped both mentally and physically to do their work to perfection, rather than being satisfied with a second best or half done job.

(ii) In short, the average villager should be given education for adulthood rather than perpetual dependence on a "father figure" in the form of a government or foreign agency. Only then can he make his own small community a secure place for himself and his family and thereby contribute maximally to the development of the nation as a whole. In a sense there cannot be much serious talk of national development without the development of the rural areas whose people form the majority of the population. If these can be equipped and given the necessary leadership to develop their areas significantly, a big part of the national development problems would be solved.

5. The specific objectives of this kind of broad education can be considered under two headings, namely, what the teacher is supposed to do with the pupils and with what the teacher should be equipped in order to perform the task well.

6. In general, at the primary school level, the teacher is supposed to guide and encourage the pupils to explore and discover facts about their environment and their situation, to discuss these and to learn to reckon and report; to discern relationships. At the secondary school level, he is supposed to formalize their study more and to focus attention on inter-relationships of science and mathematics and agriculture; social changes and economic development; all the time using the environment as resource material.

7. For education for rural transformation, one must lay emphasis on science in the widest sense. An integrated study of science is the most effective tool for economic and social development nowadays. Thus the education at school will necessarily be science education.

8. Science in relation to rural development: Science takes in the natural environment - its nature and operation (functioning), its evolution (changes with time) and the inter-actions of its components. It is concerned with every aspect of the environment and of its components both physical and biotic. It seeks to understand natural events and phenomena as cause-and-effect relationships. Thus it depends on repetition of events and phenomena for verification of such relationships. It uses logic in its method and builds up an organized body of knowledge on which to draw for further

investigation of nature.

9. One can interpret this as an ever deepening familiarity with and understanding of the natural environment as a basis for man's exploitation and improvement of the environment as well as an amelioration of his existence. Thus science is to be developed initially from knowledge of local environment and phenomena, by use of local materials, and for further improvement of local conditions. In time a whole body of scientific knowledge - data and methods, ideas and techniques - will be built up and seen to be part of the universal scientific knowledge made up of similar components developed in other parts of the world.

10. The emphasis on local environment does not imply a special kind of science peculiar to a region or a people. It suggests rather that study of local conditions is the easiest road to a full understanding of scientific ideas and their methods of development. It implies that study based on one's own experience is more readily advantageous than study that is not. It means that application of science to improvement of one's situation is more valuable and less taxing when the principles derive from local rather than foreign conditions. The scheme proposed below seeks to create the right conditions for the development of scientific education based on local conditions for these very reasons.

Training the Teachers

11. As regards the training of the teachers to carry out these tasks one should aim at equipping them to regard their education as continuous, to show concern for the economic and social welfare of the local population by studying their problems and devising possible solutions, to use the environment as resource material for lessons in science, mathematics, language, literature, civics and character building; to develop creativity through awareness of necessity; to be dedicated and interested in curriculum improvement and effective teaching; to go in for teaching as a worthwhile career rather than as birds of passage. In short we wish to train teachers who are agents of social and economic change by improving the academic quality and relevance of the education they acquire and transmit, and by improving the status and remuneration of teachers in the interest of contentment. So the curriculum has to be modernized, with changes in course content,

modernization of examination procedures, development of new attitudes about how and what to teach, and innovation and use of various teaching aids.

12. It has been said that for too long our education has been mechanical so that all we acquire has been book-learning rather than education. This suggests that the kind of education we have been receiving (and transmitting) has somehow missed the real essence of education and has been ill-suited for our situation. So we have to stop and take a fresh look at things; to begin again and introduce corrective measures such as repatterning the system, revising and reorienting the training of teachers as well as the curriculum, and changing the emphasis to a focus on local problems to be solved.

13. Teachers should be made to realise that it is more important to take into the classroom problems of the rural people, than to teach their pupils abstract knowledge about things foreign to their experience. Thus the curriculum for teacher training should be directed to problems of farm production, marketing and transportation; community development and social change.

14. It will be more profitable to direct attention to methods of production and marketing, travel and transportation costs; easing the burden of work by development of simple tools for ploughing, bush clearing, sowing, harvesting, storing and drying; to methods of calculating expenses and profit; and to methods of expanding business. Along with these, attention could focus more relevantly on improving domestic and personal sanitation, feeding habits and diet, handling and preparation of food, and health and social life. For if the education is to fit the individual more properly and securely into his environment, he needs to understand the problems and to be able to see that they are capable of some solution. When he goes off to become a farmer his education should enable him to produce more and better crops rather than just enough for the extended family and for the next season's seed.

15. Teachers should be able to see the relationship between mixed farming (crop production and animal rearing) and the continuous culture of one plot of land perennially, to be able to advocate it by example in the school garden. By teaching with such a project he will bring home more forcefully to the pupils the advantages of the method.

16. What goes into teacher training? The following should form the core of the curriculum:

> English, Mathematics, Physical Science, Biological Sciences, Agriculture, Environmental Studies, Social and Economic Studies, Curriculum Development and Innovation, Unit Writing, Special Projects, Professional Education Subjects.

Teaching practice should be spread over 2 - 3 years.

Note: Teacher methods should come as part of the respective subject areas rather than as separate areas.

17. As regards English, this is basic to all other subjects, being in most cases the language of instruction. But more important is the use of the knowledge of English for enlivening instruction through translations of folklore, portraiture of local scenes and village life, to make pupils understand the beauty of the language as well as see the beauty and deficiencies of their own situation. The lessons in English can also be used to effect some reappraisal of social customs, question basic assumptions and guide social conduct through creative writing by the teacher.

18. Mathematics is also basic to other subjects and should best be linked with the sciences, agriculture, and social and economic studies. Thus by using the topic or unit approach a mathematics lesson could be constructed out of a subject like Gravity, or Air, or Water. This will then link up with the physical aspects, the chemical aspects and the biological aspects. Mathematics will be seen to be important for an understanding of all these if the treatment in each case is quantitative. This should make young teachers become really familiar with mathematical computations; should dispel their fear or inhibitions, and should enable them to deal more effectively with the subject in the classroom. Some remedial work will be required in some cases as there will be students who have ceased learning mathematics early in the secondary school.

19. Physical science could combine Physics and Chemistry and, as much as possible, it should deal with the application of principles to local phenomena and easily obtainable materials. For instance, the chemistry and physical properties of the soil, of clay; analysis of locally produced salt,

properties of sound using local instruments, seeing by reflection from surface of water, weighing by balancing on both sides of a ruler, etc. The aim should be to derive the principle from the experiment and reapply it to other problems. Thus the whole exercise is to introduce a practical bias to the subject. For teachers have to be made to consider what each item of information can be used for and how it can be used most effectively to improve the current situation.

20. Chemistry as a subject should receive similar treatment. But one must always remember that this is not to advocate teaching of these subjects without the usual apparatus and chemicals. Rather it is to suggest that the teacher should be able to think up a substitute when he finds he wants to teach a topic and does not have either a solvent, or a suitable solute, or a pipette, etc. This is the whole purpose. Should he abandon the lesson or simply write out the procedure and results for the pupils to memorize? I think not. He should be able to substitute kerosene for acetone, or petroleum ether, and locally distilled gin for amyl alcohol, and so on. The measure of one's depth of understanding can be gauged by the extent to which one can suitably transfer one's experiences in this way.

21. The biological sciences offer the most fertile field for innovation of this kind. For here the practical bias takes the student out to the field to study living plants and animals in their own environment, including man, through inclusion of human ecology in the syllabus. For the teacher should be acquainted with plants and farmers, tropical health problems, food resources and food production, and child welfare. It is important to focus attention on health hazards involved in agricultural development schemes, e.g. schistosomiasis, trypanosomiasis and tsetse fly and livestock or wild fauna in relation to man, genetics and reproduction in relation to population and food production. For these are the topics that add relevance to education in rural communities, for they bring out the role and status of man in nature as well as his long and persistent efforts to change and improve his environment. It is necessary to add that as often as possible, historical evidence has to be stressed so that students can see that much of this was achieved by careful observation of things around the discoverer.

22. This brings us then to environmental studies. Here, the student is made aware of the geography and land use of his area in particular, in relation to other areas of the world.

He is able to see how improvements were made elsewhere and what effects such improvements proved to have on the lives of the people. This should fire his own imagination to consider how to improve his own location. Interesting and perhaps profitable and useful exercises could develop from such considerations.

23. Studies of towns and human communities in general bring us to social and economic studies. The teacher would need to be familiar with ideas in these fields to understand the social organization in which he finds himself. His creative activities and effective teaching will gradually change the prevailing socio-economic conditions and he should understand the forces and processes at work so that he can influence the change for the better. He must be able to appreciate the sociological importance of cultural changes so that he would know how to deal with them. And these changes are bound to come about with better education, if not for all at least for the majority.

24. Agriculture must feature prominently in the curriculum as this is the very life of rural populations. Student teachers should become familiar with improved methods of production and with the applied research which forms the basis of discovery of the improved methods. Teachers could play a very important part in predisposing the rising generation to return to the land rather than seek, perhaps vainly, their fortunes in the large towns. Thus they could let their pupils see that farming can pay, and pay handsomely, by improved methods. Farming includes fish-farming as well, which can be undertaken along with livestock production and crop production, since pig manure contains 70 per cent digestible material for some fishes which can yield over 4000 lb/acre in 15 months. Thus the economics of agricultural production and management should be stressed to bring home the advantage of agriculture as a career, the value to the local community of increased production, and the valuable contribution to the national economy and international trade.

25. Curriculum development and innovation is vital to relate the study of various subjects to the environment and experiences of the pupils. Most important in training in innovation is that it forms the foundation for the teachers' continued growth after college. So every teacher should have a thorough grounding in this area. It is this preparation that will enable them to teach their other subjects in the way desired as it will

condition them to looking around them for materials and ideas to make comprehension easier for their pupils and to add interest to the lessons.

26. In this connection, teaching materials like specimens, models, handbooks, reports, etc., should be carefully preserved for future use to add continuity of activity and approach to the enterprise. In time it would be discovered that radical changes have been made to the curriculum and the average performance of the pupils has increased sharply. It has to be remembered that a curriculum is a dynamic thing and changes with the needs of contemporary education. Not only what goes into it, but also relative emphasis will change with time and changing local needs; and teachers will have to be equipped to meet these changes, preferably by being closely associated with curriculum construction and reform. It would be of considerable advantage if this could be done through a centre for curriculum development attached to an institution of higher learning.

27. Unit writing is another area that is exciting, challenging, and extremely rewarding. Experience has shown that primary school teachers can write greatly valuable and interesting units, intelligible to very young children, even when dealing with complex ideas in physics and chemistry. The benefit is not only to the pupils; the teachers themselves discovered remarkable insights which they could not have realised in the conventional type treatment of their topics. It is by no means essential for all teaching to be done with printed units. But constant practice leads to the impromptu unit construction which keeps pupils always approaching their studies with an attitude of curiosity, inquiry and exploration, and experimentation as appropriate. This ensures the realization of one of the major objectives outlined above - the development of a critical attitude to life and active, participative learning and constant search for possible solutions.

28. This constant search for solutions and continuous learning leads to the subject of projects. If the teachers are to focus attention to the environment and local problems, then it is useful for them to have proper training in methods of investigations they are likely to undertake. Such training is best acquired through special supervised projects of individual research. The important feature is that they must learn to do it well rather than press for sophisticated operations and spectacular results. The lesson of doing things well no

matter how seemingly trivial or unspectacular is more valuable than the search for what seem brilliant researches done rather badly.

29. The opportunities for project work are many and the College lecturer should find it easy to supply topics. It has been said that one of the distinguishing indications of the competence of a staff member is his ability to focus upon useful and significant problems in teaching and research; and that this ability is closely related to his ability to do constructive research work. If this is the case, then there is a premium on getting our teachers attuned to doing just this through training in project work. Other advantages derivable from this are that continued interest in such investigations could maintain a link between the teacher and his alma mater - a link worth maintaining if the teacher is to be on the ball all the time and not grow ineffective through frustration and despair. Media of communication could also be set up to spread new ideas, discuss progress and provide valuable new information or interpretations needed for building up a corpus of knowledge about the environment.

30. The need for close links between practising teachers and their alma mater is great enough in schools where more experienced teachers can guide and assist them. But frequently young teachers end up in charge of their subjects in schools where they alone are properly trained to do the job. This is where they need more urgently the continued help and guidance of their College. It is not always the case that people forsake the recommended approach through laziness or wilful negligence. Sometimes it is due to despair born of prolonged frustration which gradually undermines loyalty to a cause and damages efficiency. Every such case is regarded as a failure and counts as wastage. The Colleges can reduce the wastage from this source by keeping in touch with the teacher so isolated and acting as the mature colleague providing advice and material help.

31. The attention to local problems is also assured and, by seeing the interest which the teachers take in its welfare, the rural community is likely to respond with more active support and personal identification with the school(s).

32. All this can only be done with maximum effect in pre-service training. Yet there is a clear need for in-service training as well, to upgrade the level of competence of serving

teachers and create a salutary atmosphere in the schools where graduates will go with the new ideas. By introducing the serving teachers to the philosophy and methods of the College programmes the way would be paved for easy acceptance of the College graduates and their novel approach. Taken together, the two areas of training will help speed up the changes in teaching in the schools and colleges more effectively than either alone. For the products (graduates of pre-service and in-service training) will reinforce each other's efforts rather than work in opposition to them.

33. Thus the fresh graduate will soon be entering schools where the attitude to his training is favourable, where the methods and approach are already adopted or being launched by teachers with similar training or exposure, and where he can participate in curriculum research and development and testing of trial units.

University Involvement

34. To further these ends it is desirable that the University should give the lead, and not only in the follow-up of its graduates. It could initiate the establishment of communication media referred to above if only for the advantage of co-ordination and cross referencing, provision of expert advice and information, and storing up of feed-back from the field for use in developing areas of knowledge, revising courses and programmes, and synthesizing scattered fragments of information into coherent themes.

35. This can even lead to the starting of an information service at the University for which the necessary documentation will already be building up. From here it is a short step to the organization of vacation courses for teachers, so that they can return to College to acquaint themselves with changes in the direction, approach and contents of their areas of interest. This will facilitate curriculum integration from school to college as well as increase still further the preparation and effectiveness of the teacher.

Rewards

36. The tasks outlined are extremely demanding in terms of time, courage, size of responsibility, dedication, patience and ability. The rewards must therefore be high, and not

just in terms of real wages. The teacher could occupy in society a position of high esteem, of warmth and affection, of sympathy and benevolence as well as high material rewards. This to me is the only fitting recompense for the diligent service, the enormous sacrifice, the patient dedication and enduring loyalty of the really good teacher. This is the ultimate achievement that will crown his strivings along the difficult paths of educational improvement and nation-building. For if the hand that rocks the cradle rules the world, then the hand that shapes the unformed youth must surely build the nation.

37. The scheme outlined above is intended to be not exclusive or exhaustive, but central to any programme for rural education and transformation under present conditions. It is held to be more likely than any other to ensure the orderly development of the rural community into an environment that is attractive to educated youth with rising expectations. It gives them something to work for; to take pride in its growth and enjoy the emotional satisfaction of a really worthwhile achievement. In a sense they will be participating in the building of a lasting "monument, more enduring than brass" and certainly more enriching both to themselves and to their country, a monument on which anyone can look with admiration and even with envy.