APEID

ASIAN PROGRAMME OF EDUCATIONAL
INNOVATION FOR DEVELOPMENT

Implementing Curriculum Change

A symposium of experiences from the Asian region

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Asian Centre of Educational Innovation for Development
UNESCO REGIONAL OFFICE FOR EDUCATION IN ASIA
Bangkok, Thailand

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The *Asian Programme of Educational Innovation for Development (APEID)*, initiated on the recommendation of the Third Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia (May-June 1971, Singapore) and the authorization of the General Conference of Unesco at its seventeenth session (Paris, 1972), aims at stimulating and encouraging educational innovations linked to the problems of national development in the Asian region.

All projects and activities within the framework of APEID are designed, developed and implemented co-operatively by the participating Member States through their national centres which have been associated by them for this purpose with APEID.

The Asian Centre of Educational Innovation for Development (ACEID) has been established at the Unesco Regional Office for Education in Asia (Bangkok) to co-ordinate the activities under APEID and to assist the associated national institutions in carrying them out.

The main objectives of APEID are :

- to promote awareness of the need for educational innovation;
- to promote understanding of innovative practices, and to encourage experimentation and adoption of educational innovations;
- to help strengthen national capabilities for the creation and use of educational innovations;
- to identify and stimulate innovative activities and co-operative action among Member States; and
- to promote the transfer of experiences.

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PREFACE

Recent years have witnessed a quickening pace of change in the educational setting of a number of countries in the Asian region. These changes are a part of, and indeed are impelled by, the changes taking place in the wider landscape of social, economic, cultural and political evolution and transformation.

In the educational context, the response to these wider changes is reflected in the effort to reform or renovate the curriculum. Hence the last decade has seen more initiatives growing in the area of curriculum development than, perhaps, in any other field of education in Asia. In many countries, national institutions or centres[1] have been established to develop new curriculum models and materials; and increasingly the training and preparation of educational personnel is being focused on curriculum problems.

Broadly speaking, the direction of curriculum change in many Asian countries seems to derive from a two-fold concern, reflected in varying degree in individual countries. First is a predominantly pedagogical concern with the content of the various 'subjects' - to make the content more in line with new knowledge and methods in that discipline. The second concern goes deeper. It seeks to link curriculum to the social and cultural transformation taking place or desired for national development. The effort in curriculum development is directed to making curriculum relevant to national needs and authentic to national realities. It is 'social' in inspiration just as the first concern is 'cognitive' in style.

Whatever the sources of inspiration for curriculum development, experience shows that curriculum innovations, even when well-planned and tested, tend to fall short at the stage of implementation. This may be attributed to various factors such as the inadequacy of support from the management or the inability to disseminate new ideas to those who are to adopt the innovations. But it may also be indicative of more fundamental problems; mis-understanding of the curriculum change process might be at fault.

Recognizing a need to study the experiences which are taking place in the Member States regarding the problems of implementing curriculum reforms and innovations, the Asian Centre of Educational Innovation for Development (ACEID) convened, within its programme framework, a Technical Working Group to study these experiences. The Technical Working Group met at ACEID, Bangkok,from 6 to 18 September 1976. This publication is the

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1. Five case studies of curriculum development centres are being published under the series title "Curriculum Development Centres".

outcome of the Technical Working Group's deliberations. Grateful acknowledgement is made to the members of the Technical Working Group for preparing the present study - which is offered in the hope that the experiences brought together here will be of help to those who are engaged in implementing curriculum changes in their countries.

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This study, presented in the form of a symposium, is no more than a first view of the problems involved in implementing curriculum changes. In most of the countries of Asia covered by this symposium, curriculum programmes were initiated in the last few years and are to be found at different stages of implementation. New experiences are being generated constantly. The Asian Centre hopes that it would be possible to continue exploring the new generative experiences. One possible way is for curriculum developers in the countries to study local curriculum innovations, both at micro- and macro-levels. The brief case studies presented in this symposium would also need to be brought up to date from time to time, particularly to highlight the changes in strategy which may have been induced at different stages of curriculum implementation. It is hoped that this symposium will contribute to motivating this continuing process of reflection and analysis.

Chapter One

OVERVIEW OF SELECTED EXPERIENCES IN ASIA : CURRICULUM IMPLEMENTATION STRATEGIES

Curriculum implementation

A curriculum can be thought of as a course of studies. It can also be thought of as a sequence of learning experiences which are organized to realize some stated educational objectives. In whichever sense the term is used, a curriculum is not a static entity; it is always in a process of change and development in order to be useful to the learners who have to cope with the social, economic, political and technological changes that take place in the society. This dynamic nature of a curriculum makes it difficult to draw a hard and fast line between development and implementation but, for administrative purposes, a line may be drawn separating the two functions. Curriculum development does not end with seeing that a new syllabus is developed, new instructional materials prepared and new textbooks published. Processes of learning are involved which require certain kinds of competencies and attitudes on the part of the teacher. The process of implementation includes in-service education of teachers to equip them with necessary competencies to implement the curriculum. The process of implementation just requires the knowledge of whether the curriculum is in fact meeting the needs for which it was originally developed. An evaluation and feedback system should be built-in as an integral part of the curriculum development. The information received through this system may require changes in the curriculum, which starts a fresh cycle of development, trial, adjustment, production of textbooks and other instructional materials and teaching-learning aids, teacher education, evaluation and feedback. Implementation is a dynamic concept which involves a built-in mechanism for curriculum renewal.

Just as there are various ways of developing a curriculum, there are ways of implementation. The strategies of implementation should be concerned with the beneficiaries of the curriculum. Pressures of time targets may lead one to force a curriculum into the school system before there is adequate preparation on the part of the schools and the community. In the long run, such strategies are counter-productive and inefficient, because very soon one finds that the curriculum is not meeting the needs of the learners. The delivery system (as it is called in management) of a curriculum needs to be prepared in order to be effective; otherwise, even a good curriculum may become ordinary in the process of implementation and thereby defeat the very purpose of curriculum change and innovation. The delivery system involves in a large measure the school, and hence sufficient attention has to be paid to the school in order to make it ready to introduce the new curriculum.

The attitudes of learners to a new curriculum are important factors in the efficiency of learning, and such attitudes depend very much on community support and understanding. Therefore, a preparation of the community becomes necessary because, among other things, this would facilitate curriculum renewal, an essential part of curriculum implementation.

Strategies of implementation

Within the conceptual framework of implementation as explained above, it is seen that there is a process of implementation that is shared by many countries and that the countries are becoming increasingly conscious of the need to improve their implementation strategies. It would appear that all countries have conceived the process of curriculum planning, development and implementation as an integrated process, but there is no indication that enough attention has been paid to the review of the existing management and organizational infrastructure of the agencies responsible for education.

It is noticeable that curriculum planning and development flow from policy makers but, at the same time, there is evidence of a movement in the direction of wider participation and involvement both vertically among the professional and technical people and horizontally among those outside the pale of their ranks. It is noted that even teachers are not formally associated with curriculum planning. Planning is usually regarded as the function of the central organization, and it is in the development and operational stages that the teachers usually participate.

The development of curriculum materials is usually carried out by the central organization but there is evidence that, in some projects, this aspect of work is becoming broad-based and includes not only the teachers but also the community.

The dissemination of information and know-how to teachers and curriculum workers is carried out in various ways. These include in-service education, dissemination through bulletins, teacher's guides and syllabuses. Every country lays great stress on the in-service education of teachers to update teachers' knowledge, skills and attitudes.

Some countries reported long and extensive field trials before actual implementation of innovations, while others reported pilot studies of short duration. Still others reported an interlocking of the development and implementation stages due to the country's need to accelerate the implementation of the programmes.

Various techniques have been used for the evaluation of the curriculum. The most common practices are feedback obtained from teachers during visits to schools or during in-service education, try-outs or pilot testing of curriculum materials; responses obtained through questionnaires administered to teachers and pupils, observation of actual teaching and analysis of examination results.

All the countries are very much alive to the necessity to win public support for innovative programmes. The means by which such support is ensured are explained in section IIB (b) of this symposium.

In scanning the picture that emerges from the analysis of country practices, it appears that there are broadly four types of organizational modes adopted in implementational strategies. These largely centre round the roles and functions of the central organization vis-a-vis local agencies and institutions. The four modes are shown in Table 1. These modes are broad categories and no country may fall neatly into any one category. A country's organizational mode may come within one or more of those indicated.

Problems and issues

Problems relating to the implementation of curriculum innovation are of various types and some of them are administrative in nature. The shortage of both human and material resources is a very real one. The time-lag between consecutive activities due to lack of proper co-ordination is a serious problem that puts implementation out of gear.

The lack of communication and rapport between the planners and the curriculum developers on the one hand and the curriculum developers and those who are responsible for the implementation of the innovations in the school system on the other is a major implementational problem.

Another impediment to curriculum innovation is the inadequacy of incentives. It has been pointed out very clearly by one country that a lack of incentives hinders effective development and implementation of the project. The same country has also indicated two important constraints, namely, changes in the National Educational Plan and changes in education policies that occur during the cycle of implementation.

The curriculum innovation process is a dynamic one, with an increasing degree of democracy in participation in the implementation. It is necessary, therefore, that a mechanism for the regeneration of curriculum is established as a part of the institutions undertaking curriculum implementation. This is a recent trend in some of the countries in Asia and needs to be considerably reinforced.

Some thoughts on implementation of curriculum innovation

Although implementation strategies will differ from one country to another and within a country from one innovation to another, some common features likely to facilitate the implementation of an innovation emerge out of a close analysis of the implementation strategies and problems reported by Member States. The implementation of a curriculum innovation is likely to be facilitated if:

1. Central planning and development are combined with local initiative;
2. Closer ties are promoted between development and implementation agencies;
3. A promotional organization with considerable autonomy and flexibility is established;
4. Broad-based participation of teachers, students and community is ensured;
5. Teacher education - both pre-service and in-service - is provided with incentives but without overloading them;

TABLE 1

	Mode I (limited dependent role at local level)	Mode II (locally-based community school approach)	Mode III (major role at the Central level with full local support)	Mode IV (major role at local level with central guidance and support)
Central	Role of Central Organization	Role of Central Organization	Role of Central Organization	Role of Central Organization
	1. to establish goals, aims, objectives 2. to prepare programme, materials 3. to provide intellectual leadership 4. to undertake analysis of feedback 5. to sanction change of the programme 6. to undertake measures to ensure compliance at the local level	1. no role	1. to establish goals, aims and objectives 2. to prepare programme, materials 3. to undertake analysis of feedback 4. to provide intellectual leadership 5. to provide supportive climate for innovation 6. to create opportunities for exchange of experiences 7. to disseminate information	1. to establish goals and assist in forging linkages across education and other sectors 2. to provide motivation 3. to create supportive climate and remove barriers 4. to provide financial assistance 5. to create opportunities for exchange of experiences 6. to undertake compensatory action to equalize opportunities for disadvantaged groups, areas
Local	Role of Local Level	Local Agencies	Local Agencies	Local Agencies
	1. supply of feedback	Play all the roles in respect of: 1. formulation of aims, objectives 2. development of programmes and creation of intellectual leadership 3. analysis of feedback 4. change of the programme	1. to evaluate and supply feedback information 2. to provide support to the teachers and the schools for innovation 3. to develop programme materials further 4. to help build up intellectual leadership	1. to formulate objectives 2. to develop programme materials 3. to build up intellectual leaderships 4. to undertake analysis of feedback 5. to create mechanism for change of the programme 6. to search for, and offer, experiences for sharing among local programmes

6. Adequate support in the form of materials and financing is provided;
7. A system of continuous feedback for improving and not proving is built up; and
8. A mechanism for regenerating curriculum is set up in the implementation agencies and institutions.

Planning and preparation for implementation

a) Broad-based participation

The group was of the view, on a consideration of the country experiences presented, that implementation strategies would depend very much on the nature of innovations. Though this appears to be almost self-evident, it was felt that, no matter what strategies are adopted to implement a particular innovation, the widest possible participation should be encouraged.

Innovations, it would appear from the case studies presented, fall into two broad categories, macro-level innovations and micro-level innovations. In the case of macro-level innovations, the implementation strategies operate at several levels. There are, broadly, the levels of plan development, and plan implementation. Plan implementation again is made operative at several levels. Micro-level innovations take place within the framework of overall macro-level strategies and, as such, do not generally involve the top-level plan developers.

The case studies presented and the discussions that ensued reflect the nature and the extent of the participation that is taking place at the various levels referred-to above. They indicate that countries are generally alive to the necessity to ensure the widest possible participation at the various levels of operations. Although the patterns that emerge vary, in certain strategies, common practices are seen.

The involvement of professional and technical resource persons who are outside the framework of Government Ministries and Departments in the educational endeavour is, judging by any criteria, a desirable practice. But the important aspect of broad-based participation in education is the involvement of the people themselves at all levels of operation.

At the stage of plan development, consultation with the people is reported by several countries. India reports that the educational tradition of the country has laid the foundation of a mode of working which includes discussions, debates, meetings, conferences, seminars, studies and investigations. Sri Lanka reports that the advice of a wide cross-section of the people including members of trade unions and the public was sought in the planning of the educational reforms. Indonesia reports that teacher associations participate in national workshops whose function is to sanction and approve educational objectives. The involvement of the representatives of the people through constitutional procedures, as reported by several countries such as India and Republic of Korea also ensures the participation of the people in the formulation of the goals and aims of education.

At the level of plan implementation there is general evidence of broad-based participation of the available resource persons in the countries, including

teachers and university personnel both working within the framework of the controlling agencies and outside it. But even here the place given to the community differs from country to country and within countries from project to project. In Singapore, the university, the junior colleges, primary and secondary schools and Ministry officials are represented in the standing committee on the project 'Education for Living'. The new English curriculum developed in Malaysia, the IPST projects in Thailand, 'The in-school, off-school project' in the Philippines, the Development School Project in Indonesia, the Air and Correspondence High Schools and the Air and Correspondence Junior College Projects in Republic of Korea, the projects promoted by the NCERT in India and the Curriculum Development Centre in Sri Lanka have ensured broad-based participation of resource persons and professional and technical groups. This practice is, of course, an extension of a trend that was existing in most countries for quite sometime.

In some programmes such as the Saemaul*movement and Saemaul education in Republic of Korea, and the pre-vocational education programme in Sri Lanka,there appears to be a break-through in the involvement and participation of the community on a major scale. In the case of 'The in-school off-school project' in the Philippines, the parents and the community participate during off-school work of the pupils.

The advantages and the disadvantages resulting from the participation of the people at all levels of implementation are likely to be debated by educators. Would a centralized system operate more efficiently and deliver the goods better? Some are of the view that community participation would lead to making the disadvantaged more disadvantaged. This view may be based on the mistaken assumption that the schools will suffer or prosper depending on the location of schools in poor or rich areas. The mechanisms of community participation have to be worked out so that the people are involved in the decision-making process and in the implementation of educational plans within the overall national set-up. In a sense, to challenge the concept would be to challenge the foundations of democracy itself. Narrowing the base of participation at any level would result not only in not utilizing to the fullest the latent resources of a country but in indifference and lack of interest on the part of those left out.

b) Public support

Innovative curriculum development activity requires active public support together with the support of the government. In addition, it is necessary to ensure the participation of personnel at the various strata of the educational hierarchy for curriculum implementation: the top management in related educationa agencies, field supervisors, school principals and teachers. Examination of country papers on the strategies for curriculum innovation reveals that participating countries are using various means to enlist public support. Some of the are described below.

* *Saemaul* means New Village Movement, and is in fact a movement for natio mass rural development.

India

In a general way, public support for the new curriculum was assured through discussion in the Parliament and in the Government. In a specific way, public support was enlisted through meetings of teachers with the Prime Minister, the Ministers of Education, other Ministers, national leaders, educationists and experts. Radio and TV were utilized for discussion and debate. Newspapers in English and the other languages have carried special features on the curriculum as it was intended to be implemented by the States concerned.

Indonesia

In building up public support for the implementation of the standardized curriculum of Indonesia, various activities have been conducted. The means used were (i) organizing a series of meetings such as meetings with Parliamentary Standing Committees on Education and press conferences; (ii) issuing of special bulletins for people concerned with education and the publication of special issues for professionals; and (iii) use of TV for dissemination, discussion and debate. Both educators at national level as well as heads of provincial offices of education have participated in these activities. Similar means were used for securing public support for the Development School Project.

Republic of Korea

All-out support for the Saemaul movement and for Saemaul education has been rendered by the Government. The President himself presides over a special cabinet meeting every month on the progress of the Saemaul movement and Saemaul education. Special presidential awards were given to 6,300 educators and village leaders in 1975 (from US $1,000 to US $2,000 each). The fact that all cabinet members receive Saemaul education and training together with village Saemaul leaders is a great encouragement to the Saemaul project. Saemaul projects are also given top priority in the allocation of government resources.

A nation-wide publicity campaign is presently being carried out. Ten thousand free copies of a monthly magazine entitled "Saemaul" are distributed every month. The radio and television stations conduct regular programmes on the Saemaul project. In 1976, 16 film-strips on the Saemaul movement were produced. The "Song of Saemaul" is one of the most popular songs.

Malaysia

The new English Syllabus in Malaysia has replaced two syllabuses, one used by the Malay-medium schools and the other used by the English-medium schools. This has been necessary because, in keeping with the National Education policy, Bahasa Malaysia has been made the sole medium of instruction and English is the second language. The English syllabus has been amended to meet the new position of English in the school curriculum.

A series of meetings were organized among educationists involved in the teaching and learning of English. As a result of the meetings, a

'communicative English' syllabus was produced and general acceptance was sought. A series of articles explaining the need for the new syllabus was published in the newspapers. In addition, officials of the Ministry of Education publicized the new syllabus and won the commitment of parents and teachers to it.

Philippines

The success of the survey of outcomes of elementary education depended very much on the co-operation of school officials and teachers in the public and private sectors. In a departmental memorandum issued by the Secretary of Education and Culture, the rationale and objectives of the survey were fully explained. This effort resulted in the support of Regional Directors, Presidents of State Colleges and Universities, Heads of private schools, Superintendents of normal schools, school divisions and teachers. This was a nation-wide survey and the respondents included school heads, teachers and pupils.

In other projects such as 'The in-school, off-school project', public support was enlisted through a series of orientation sessions with school officials and community officials including parents and civic organizations on the rationale, objectives and the mechanics of the operation of the project. Orientation sessions for parents and teachers were used to obtain their commitment or support for the project.

Singapore

To explain the Education-for-Living Project and its innovative features to the public, two forums, one in Chinese and the other in English were telecast through the national television network in the early stages of curriculum innovation. In addition, a newspaper dialogue between the public and the Ministry of Education on 'Education for Living' took place in the form of questions and replies. The aims of the innovation and the methods adopted to implement it were explained. Finally, public speeches and brief TV introductions were used for the same purpose.

Sri Lanka

The media - radio, newspapers, Ministry hand-outs and newsletters - and face-to-face discussion with the people at meetings of Parent-Teacher Associations, public meetings and other formal and informal gatherings were the means through which public support for curriculum innovation was enlisted in Sri Lanka. This effort was joined in by the Minister of Education, Parliamentarians, the Director-General of Education and his officials, teachers and by members of the public themselves.

Despite the fact that the main reforms and innovations were formulated in 1971 and introduced in 1972, the efforts to secure public support have continued unceasingly up to the present day.

Thailand

Thailand has also used various means to win public support for the implementation of the new curricula. The activities conducted were: (1) meeting with those who create public opinion - members of Parliament and parents - and (2) the use of mass media through which a series of talks and discussions on various aspects of the curriculum were conducted. The Curriculum Development Centre intends to come out with a series of newsletters, posters and hand-outs for free distribution.

c) Resources (human and material)

Implementation of innovative curricula usually requires new knowledge, new skills, and new attitudes in people directly or indirectly involved. New equipment and materials are sometimes necessary and, where such is the case, funds have to be readily available. The importance of these human and material resources has to be conceded, as they may determine the degree of success or failure of an endeavour in curriculum innovation, however adequately it has been conceived and developed.

An analysis of the case studies in curriculum innovation in eight Asian nations shows that, although there is no lack of manpower at the developmental stage, there is a serious problem in the shortage of adequately trained teachers as implementors. The problem is aggravated by the sheer size of the target population and to some degree by the inadequacy of the traditional pre-service teacher training programme.

To cope with this problem, various strategies have been employed: the provision of manuals or teacher's handbooks; in-service training at the national, regional and district levels for different categories of personnel; advice during visits to schools and exchange of views at meetings held at training centres; involvement of resource persons in the community; and the establishment of teachers' resource centres.

Generally speaking, the availability of material resources does seem to be a problem in some Asian countries. The attempt to make use of community resources and other readily available materials deserves special mention. It is necessary to point out, however, that the distribution of materials may be a problem in countries which have difficulties in transportation and communication.

The cases of curriculum innovation reported here are carried out with the approval of the governments. Financial support ranges from inadequate to generous. Financial resources may come from the central as well as state governments; in one case, the project is funded by three different bodies, not all governmental.

How each nation deals with the human and the material resources in implementing its particular curriculum innovation is illustrated in the following accounts from country reports.

Indonesia

It is realized that, to implement successfully the innovative science curriculum, teachers will need guidance in many aspects of their work.

Therefore, in addition to textbooks for pupils, manuals are prepared for teachers to assist them in developing instructional programmes, tests and evaluation programmes, guidance and counselling programmes, and in the management of science laboratories. The manual for guidance and counselling is also used by guidance counsellors.

To assist the headmasters and supervisors to give proper guidance to teachers, a manual on school administration and supervision has also been made available. Meanwhile, the government has invested considerable resources on the purchase of science equipment and other teaching aids to support the implementation of the new science curriculum.

The distribution of materials poses a serious problem, however, as the number of schools is very large and they are scattered in thousands of islands over vast distances.

Courses designed to improve the abilities of science teachers already in service have been conducted. The teacher education curriculum for science teachers has also been revised.

India

About two million primary school teachers require in-service training in science teaching. Plans have been drawn up to meet this mammoth training need by a three-tier system providing such training at the national, regional, and State levels. In addition, large numbers of new science teachers have to be recruited and trained for the teaching of science at the higher grades.

On the materials side, inexpensive kits of science equipment are being prepared and will be supplied to all schools through the State Governments. The funds required for these materials have been provided by the Central Government.

Republic of Korea

For the development of leadership in the Saemaul Movement and Education, the Suwon Saemaul Leaders Training Institute was instituted in 1972. Its major programmes are: (1) providing training through the sharing of experiences of trainees and staff members living together, (2) the cultivation of the Saemaul spirit through actually practising it, and (3) mutual learning through group discussions and the presentation of successful cases of Saemaul outcomes. There are 14 other Central-level and ten provincial-level training institutes modelled after the Suwon Institute. The National Institute of Education has also trained some 4,540 teachers and teacher educators in Saemaul Education. Many teacher training institutes throughout the country also provide in-service courses, in Saemaul Education and in 'School and Community'.

Materials developed include the Saemaul Reader, collected cases of success in the Saemaul Movement and in Saemaul Education, and various audio-visual aids. These are centrally prepared.

Malaysia

Since the new English syllabus was to be used in Form IV (Grade X), the teachers at this level had to be exposed to the syllabus and assisted in

interpreting its content. The numbers of teachers involved were too large for a central training programme, however, and plans were therefore made for training senior English teachers from all of the States, who in their turn would mount training programmes at the district level. The training course for these key-personnel set the mode of approach which emphasized learning through discussion rather than through lectures. Moreover, headmasters were urged to form English language curricula to organize English programmes in their schools.

In the absence of textbooks, the need for resource materials posed quite a serious problem. Besides distributing materials written by the project staff, action was taken to collect centrally and to distribute magazines, brochures, advertisements and graphic materials. Teachers and pupils were encouraged to collect resource materials of their own and schools were advised to set up resource rooms.

Philippines

In the pilot project of the "In-School Off-School Approach", there is a high utilization of resources of the school and community. Its strategy is to make the greatest possible use of teachers, classrooms and other school facilities. The school facilities used for 40 pupils in the past would now accommodate 80 pupils. Community resources which may be grouped as (1) human, (2) material, (3) institutional, and (4) cultural are utilized.

Self-Learning Kits (SLK)were needed for use of the pupils during the off-school phase of instruction. In view of this, a national workshop on the preparation of self-learning kits was held in May 1974. The participants included teachers, principals, supervisors and superintendents from the pilot divisions, and curriculum writers, curriculum specialists and evaluation experts from the General Office, Bureau of Public Schools. The group met for one month and developed self-learning kits, evaluation instruments and the accompanying teachers' manual.

Writing teams have been organized in the pilot divisions. There is a continuous development of self-learning kits based on the feedback from experts, parents, teachers and pupils. A national workshop on the evaluation and revision of self-learning kits was held in May 1976. The first set of self-learning kits developed in 1974 has been revised.

Singapore

The development of human resources for the implementation of 'education for living' is considered to be vitally important. Workshops and formal in-service courses are therefore conducted in three languages - Chinese, Malay and Tamil. The courses are conducted by project staff who have an intimate knowledge of the development of the new subject.

It is estimated that some 3,000 teachers will participate in the in-service courses in the next few years. This is quite exacting on both physical facilities and manpower. Other strategies, therefore, are being explored to cope with this problem. The use of educational television and the publication of lecture notes as a monograph are being tried.

Implementing curriculum change

The most important materials developed are a series of 'education for living' textbooks, a set of teachers' handbooks, and a battery of evaluation instruments. Beside these, supportive materials which include simulation games, songs, and pictorial aids have been developed. There is also a series of ETV programmes on 'education for living' themes.

Sri Lanka

The effort to supplement the human and material resources available to the Ministry with the potential resources hitherto unutilized for educational purposes that exist outside the Ministry, is a special feature of the innovation introduced. In-service courses are first held for teachers in order to expand their knowledge and skills. Next, skilled workers and craftsmen along with personnel of other ministries and departments are involved as resource persons. In addition, factories, farms and other workplaces in the community are also utilized.

In brief, the manpower and physical facilities available in the country, within and outside the Ministry of Education are used for the implementation of the innovative curriculum, in such learning activities as pre-vocational studies and inplant education in the junior-secondary school and project work in the senior-secondary school.

Thailand

Human resources for the innovative curriculum in science include the trial teachers who have worked closely with the project staff and tested the draft materials and the teachers who have undertaken in-service courses conducted by regional teacher training colleges throughout the country. In the in-service courses, the project staff and the trial teachers were the instructors.

Follow-up of the in-service training is being taken up by the Department of General Education. Visits to schools and meetings at the regional centres are being organized.

On the materials side, videotapes, audio slide-sets, filmstrips, overhead projectors and programmed texts are used in the regional centres for in-service training.

In summing up, it can be said that strategies employed in coping with the problem of resources vary from nation to nation and depend somewhat on the peculiarity of a project. Nevertheless, it is worth repeating that the greatest problem in fulfilling curriculum innovation lies with the development and utilization of human resources.

Promotional organization

a) General framework

A review of the experiences and case studies of the eight countries concerned reveals the establishment in all cases of a central promotional organization for curriculum development and implementation by their respective

Ministries of Education or Governments. While they have this common element, these organizations differ in structure and function and they all have different relationships with their founding bodies. In some cases, this would mean complete control administratively, financially and professionally, while in others, it would be partial control in one or more of these areas.

The autonomy of these promotional organizations can be determined by the extent of the controlling ties that exist between them and the founding authority and their appropriate linkages with the other implementors of the programme. Some of the cases show a close linkage while others reveal that the founding authority exercises a strong control over the promotional organization.

Two cases in point illustrate the first view - the Indian and Thai experiences. India has established a National Council of Educational Research and Training (NCERT) which has a Council composed of Education Ministers from all the States with the Union Education Minister as President. This Council also includes a number of educationists including school teachers, but the bulk of the work of curriculum development is carried out by the National Institute of Education at Delhi and the four Regional Colleges of Education in the western, eastern, northern, and southern regions of the country. These institutions are staffed with a large number of academic and professional members to conduct research; impart training and develop programmes, textbooks and other instructional materials, teaching aids, evaluation instruments and scientific equipment; publish journals; conduct pre-service and in-service teacher education study innovations and help innovators to develop further. Although the NCERT develops curriculum materials and acts on innovative ideas and their output is made available to all, it is the State Governments who have the autonomy to adopt, translate, or adapt any of the material for use in their schools.

The case of Thailand is similar to the above model. The Institute for the Promotion of Teaching Science and Technology (IPST) is a semi-autonomous institute supported by the Government. Its policy is guided by an Executive Board which is composed of high-level officials from Government departments whose work is related to the curriculum of science and technology. The IPST develops and evaluates the curriculum material and the necessary equipment which is then made available to the Ministry of Education for implementation.

Besides these two cases, five of the remaining six countries have adopted a structure whereby the Central Promotional Organization has been established by an approving authority which in turn was formed by the respective Ministries of Education. Since they have been established by such authorities, all development and implementation processes have to be approved by them.

In Sri Lanka's case, the promotional organization is the Curriculum Development Centre (CDC) which functions within the overall framework of the Ministry of Education. The Ministry of Education is structured on a functional basis with the Secretary to the Ministry of Education who also

holds the office of Director-General of Education co-ordinating the functions of the three divisions of Planning, Design and Implementation. In the implementation strategies for curriculum innovation the promotional organization and the other implementors are closely linked. The Curriculum Developmen Centre has been empowered to enlist the resources of specialists from the University of Sri Lanka and from other private and public sector institutions.

A special feature of the Ministry organization that was introduced with the initiation of the educational reforms in 1972 was the establishment of the Unified Educational Service which provides for the interchange of teachers and heads of schools with Administrative Officers of the grades of Directors of Education, Chief Education Officers and Education Officers. Teachers and heads of schools have therefore the satisfaction of being in a position to serve not only as school-level implementors but in positions of management in the regions and the Ministry.

The Philippine organizational framework for promotion of curriculum innovation falls into a similar pattern. The Department of Education and Culture implements programmes based on the general education objectives formulated by the National Board of Education (NBE), established by the Government.

The Department of Education and Culture has three staff bureaux in elementary, secondary and higher education. Each bureau is primarily involved in the development of plans and programmes within its purview and likewise develops related policies, guidelines and standards necessary to guide the regional and field officers in the proper implementation of such plans and programmes.

In the case of elementary education in the country, the Bureau of Elementary Education is charged with the formulation and development of educational policies, plans and programmes. In its developmental work, it undertakes curricular design including material preparation, prepares programmes to improve the capacities of the staff and formulates guidelines to improve school plant and equipment. The Bureau of Elementary Education has a Curriculum Development Division, a Staff Development Division and a Physical Facilities Division to perform specific duties and responsibilities. The Curriculum Development Division when necessary assists in properly delineating plans of operation at the field level. It maintains a dialogue and contact with the regional offices for the purpose of revising plans and determining problems arising during the implementation.

Indonesia has a system that differentiates the responsibility of conducting research and development of curriculum innovation from the implementation of curriculum innovation. The Development School Pilot Project as a research and development project and the programme of standardizing the curriculum come under the responsibility of the Office of Educational and Cultural Research and Development. In this case, the Directorate-General of Basic and Secondary Education takes only a secondary responsibility. When the report of the development activities are approved by the National Sanctioning Committee and the Minister of Education for nation-wide

implementation, however, the Directorate-General of Basic and Secondary Education takes main responsibility.

The promotional organization in Indonesia is headed by the Directorate-General of Basic and Secondary Education. The National Sanctioning Workshop, a body set up by the Ministry of Education, approves programmes developed by the Office of Education and Cultural Research and Development. When a programme is approved and accepted by the Minister of Education and Culture, the promotional organization plans and executes all the details of the programme through the various Divisions of the Ministry. Members of Curriculum Committees who were involved in the development of a curriculum take an active part in the implementation process as Heads of National Centres and as key members in in-service education.

The Malaysian situation has many parallels with the above three cases (Sri Lanka, Philippines and Indonesia). There is an approving authority which is the Central Curriculum Committee established by the Ministry of Education and headed by the Director-General of Education. The promotional organization is the Curriculum Development Centre which draws from several sources within the Ministry the necessary personnel required to develop and promote the programme. The personnel consist of classroom teachers, lecturers and officers in the Ministry who are associated with any aspect of a specific programme, such as officers from the Textbooks Bureau, Examination Syndicate, Media-Services and the Inspectorate.

The Education-for-Living Standing Committee of Singapore has the dual function of being advisory and supervisory. It consists of people from the University, junior colleges, and secondary and primary schools, as well as specialists in the Ministry. Although no special organization has been instituted for promotional purposes, this function is carried out by the project staff and the Education Development Officers who are in close consultation.

The promotional organization in the Republic of Korea is represented by both types mentioned above. Within the Ministry of Education, the Curriculum Steering Committee deals with overall policies related to the curriculum. It is composed of thirty members representing the Ministry of Education, University professors, textbook writers, school administrators and classroom teachers. Besides this Committee, there are subject curriculum committees composed of subject specialists, principals of schools, teachers and supervisors. Any curriculum innovation taking place within this formal structure will have to go through these regular channels for approval and for implementation in schools.

In the case of the Saemaul Movement and Saemaul Education, an entirely different framework is adopted. There is a Central Council for Promotion of the Saemaul Movement but unlike the above organization, it only co-ordinates the various Saemaul activities and programme, bridging classroom education with Saemaul programmes outside school. It exists for consultation and co-ordination. Although general policies and guidelines may be provided by the Central Council, the local Councils exercise a great deal of autonomy in the course of action they pursue.

Implementing curriculum change

In the six countries (Sri Lanka, Malaysia, Indonesia, Republic of Korea, Philippines and Singapore) the central promotional organizations have been established by the respective Ministries and therefore the existing direct links between the Ministry and the regions of the country and field are all available to these organizations. Innovations accepted by the approving authority will then be studied for national implementation through these direct links. All the ramifications of implementation from the logistical operations of publishing and distributing materials to pre-service and in-service education and the creation of public awareness of the new programmes are carefully planned and implemented through the existing links.

The IPST case in Thailand shows that curriculum materials produced by them have to be channelled through the Ministry of Education which decides the procedures and extent of implementation. This is so because IPST is a semi-autonomous body and, although functioning professionally outside the Ministry of Education, is associated with it closely.

In India, any curriculum innovation mooted by the NCERT has to be presented to the State Institutes of Education for study and possible acceptance, because the States of the Union have autonomy in education.

b) Roles and functions

Wherever the promotional organization is a part of the governmental administrative machinery, it is generally also concerned with the executive roles and functions. It is concerned with planning, organizing and executing operational plans for the curriculum to be implemented in the school system, as in Sri Lanka, Malaysia and Singapore.

Depending on the size of the country and the diversity of its regions, there are regional centres, which have only a facilitating, communicative and supervisory role and function, as in Thailand, Sri Lanka and the Philippines. Otherwise, it is the central organization which not only plans the operations, but pushes the regional centres towards the speedy execution of the tasks, such as teacher training or the adoption of new textbooks in the system - as in Republic of Korea.

In many cases, the promotional organizations, although a part of the Ministry of Education, have some autonomy in deciding about the curriculum, and its strategy of implementation, as in Sri Lanka, Indonesia, Republic of Korea and Thailand, within the policy and guidelines approved by the Central Government. Teachers are free to innovate in the classroom teaching-learning process, however.

In those countries where the promotional organization is not a part of the Ministry of Education and is an autonomous body, as in the case of IPST in Thailand, KEDI in Republic of Korea and NCERT in India, the roles and functions are advisory, research and developmental, rather than executive. In these countries, there are separate channels of executive action through the established arms of educational administration under the Central Government. In the case of some of these autonomous organizations, like the NCERT in India, there is a constitutionally built-in provision of consultation with the

various regions/provinces/states as well as with various interest groups like teachers, Universities, business and industry. In other cases, as in the IPST in Thailand or the KEDI in Republic of Korea, the organization consists of a body of specialists charged with the responsibility of research and development of the curriculum, implementation being a governmental responsibility.

Mode and process of implementation

a) General procedures

The mode and processes of the implementation of curriculum innovation in Asian countries, as reflected in the reports on country experiences and case studies, vary widely. There is a wide divergence among countries as to the concept and scope of implementation; its relation to planning and development as well as decision-making; organizational structure or machinery for implementation; general mode and approach to implementation; and length of time required for the process of implementation. Some common elements, however, do exist in various forms such as programmes for winning public support, the existence of promotional organizations for implementation, the participation and involvement of groups and individuals at different levels and stages of implementation, the in-service training of teachers, the production of materials, financial support and feedback for improvement. These aspects of implementation are discussed in other parts of the report.

Some generalizations concerning emerging trends in regard to the mode and process of implementation are presented below.

First, there is a trend towards a comprehensive and participatory planning approach to the implementation of curriculum innovation as exemplified by the NCERT and the BP3K of Indonesia.

Second, there seems to be a trend towards closer inter-locking and co-ordination between the developmental organization and the implementational or promotional organization for the implementation of curriculum innovations. This is true whether the planning and developmental organization and the implementing organization are separate and distinctive in terms of organizational structure or are continuous in the sense that they come under the same organizational framework; e.g., the Ministry of Education.

Third, there appears to be a trend towards a peripheral approach in the implementation of curriculum innovation. This is true even in a centralized system of education as is the case with the Saemaul Movement and Saemaul Education, not to mention the case of India with a decentralized educational system. Another typical example is the case of Sri Lanka which in its effort to introduce prevocational studies follows this trend.

In terms of sequencing the implementation of innovation, some projects are characterized by long-term development and trial prior to wider implementation; while other projects, due to a need for an accelerated programme of implementation, resort to interlocking the development and implementation process. The new English Curriculum of Malaysia illustrates this accelerated development and implementation approach. The following is a summary of country presentations.

India: The 10-Year School Curriculum Reform

1. The work of the Education Commission (1964-66) involved the organization of a number of task forces, one of these on curriculum, methods of teaching, textbooks and evaluation.

2. The NCERT started work on detailed curriculum development in 1972, and produced a detailed plan, giving the framework of the 10-year school curriculum.

3. By 1976, the detailed syllabuses of the 10-year curriculum were ready and those for the two years of higher-secondary education were under preparation.

4. The Board of Secondary Education and the Universities have been kept informed. State Governments have been involved in conferences. Teachers are being involved in the process. Textbooks are being prepared.

5. Orientation programmes for teachers have been started. The reform of the entire teacher education programme is in progress. Correspondence courses and satellite television programmes are being utilized.

6. Vocationalization of higher secondary education has been planned and is underway.

Indonesia: The Curriculum Standardization of 1975

1. Before a curriculum innovation is incorporated into the standardized curriculum such as new mathematics, instructional procedures and a new evaluation strategy are tried out on a 'micro' basis to test its efficiency and effectiveness. The limited trials are followed by more extensive trials as in the case of mastery learning before an innovation is considered for nationwide implementation.

2. In implementing the innovations in the new standardized curriculum the following steps were taken:

a) An integrated approach was adopted.
b) The new elementary school curriculum, the new junior high school curriculum and the new senior high school curriculum are phased out in their implementation beginning 1976.
c) By 1978, all grades in the elementary, the junior high and the senior high will adopt the new curriculum.
d) The production of textbooks and instructional media and the in-service training of teachers will continue.

Republic of Korea: The Saemaul Movement and Saemaul Education

1. The Saemaul Movement was originally proposed by President Park Chung Hee in a national policy declaration; it aimed at rural development and spiritual rejuvenation.

2. Intensive nationwide dissemination of the new concept followed the policy declaration.

3. A new organizational structure was instituted to implement the project. Government support was provided more in materials than in money. The selection of projects was left to the discretion of each village.

4. In the beginning, emphasis was placed on the improvement of environmental conditions. Beginning with 1972, however, the emphasis was shifted to increasing production and earnings. The Saemaul Leaders Training Institute was also installed.

5. At the second stage of development, villages were classified into three categories: Basic Villages, Self-relying Villages and Self-supporting Villages.

6. By 1975, the whole movement had taken firm root and the proportion of Self-supporting Villages increased very rapidly.

7. The movement is now spreading into urban areas and is beginning to lay emphasis on inter-village co-operative projects.

8. Saemaul Education has been carried out alongside the Saemaul Movement throughout involving intensive public support programmes, in-service training programmes and production of materials such as film-strips.

Malaysia: The New English Curriculum

1. State Directors of Education and State Language Officers first identified the personnel.

2. The second step involved the preparation, distribution and evaluation of materials.

3. The third step involved the preparation of teachers and the evaluation of the effectiveness of implementation. The effectiveness was monitored by both Central and State organizations.

4. Throughout the stages, there was a continuous relaying of information to the approving authority and the public.

Philippines: In-school, off-school approach

1. The idea of the in-school, off-school approach was first presented at an INNOTECH* Seminar in Saigon in 1973.

2. In 1974-75, the Director of Public Schools met with Superintendents of schools to make plans for launching the project.

3. Orientation meetings with school officials, teachers, officials of the community and parents were held to acquaint them of the rationale and mechanics of implementation.

4. A survey of community resources - human, material, institutional and cultural - was conducted.

5. Self-learning kits, instructional materials and evaluative instruments were prepared.

6. The project was launched in 1974-75 in eight pilot divisions.

7. Continuous feedback/evaluation of the project through tests, questionnaires and interviews with pupils, parents and teachers is maintained.

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* INNOTECH: Regional Center for Educational Innovation and Technology of the South East Asia Ministers of Education Organization (SEAMEO)

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Singapore: 'Education for Living'

1. The small size of the country enables a centralized mode of operation for the implementation of 'Education for Living'.

2. Materials (textbooks and teachers' handbooks) were quickly disseminated soon after their publication.

3. Field visits were undertaken periodically and surveys of teachers' opinions were carried out at appropriate junctures.

Sri Lanka: Pre-vocational education

1. First, a country-wide programme was launched to win the support of the people by explaining the purpose and intent of the programme. In this effort, all from the Minister of Education and the Director General of Education down to all who were involved in planning the programme joined in. This was carried out through the mass media, Ministry hand-outs and face-to-face contact in the form of discussions, debates and addresses.

2. The curriculum teams carried out intensive micro-level studies although on a small scale. This was done with a view to gathering the necessary experience and testing the ideas formulated before actual field implementation.

3. At the same time, the orientation of the teachers and heads of schools and other Ministry officials and field staff was undertaken. This was carried out with a view to keeping everyone informed of our intents and purposes and winning general support.

4. Emphasis was placed on the in-service education of the teachers who were actually called upon to handle the work. This was done both centrally and on a regional basis.

The success of the whole effort depended on the involvement of the community in the tasks of:

a) selection of the vocations for study;
b) curriculum development;
c) assisting the teachers as resource persons in teaching;
d) assisting the in-service educators in the in-service education of teachers; and
e) assisting the curriculum development centre staff in the evaluation of pre-vocational studies.

Here, old outmoded ideas and attitudes had to be broken down; rules and procedures had to be revised.

Thailand: The Institute for the Promotion of Teaching Science and Technology

General steps taken for implementation include the following:

1. Selection of trial schools and trial teachers;
2. Provision of in-service training;
3. Replanning;
4. Provision of in-service training to the instructors of the teacher training colleges;

5. The utilization of college instructors, design teams and trial teachers as in-service educators; and
6. Conducting in-service education throughout the country.

b) Dealing with less-successful participating units

The over-all strategy adopted by some Asian countries was to identify and monitor, on a continuous basis, the potential sources of failure in the project.

An approach used in Malaysia was for the members of the Central Organization to visit those areas where implementation was lagging behind to identify the causes of failure and take steps to remedy them.

In Indonesia, the factors that affected failure of the projects were identified from the feedback received by the monitoring team.

In both instances, the techniques used by successful implementators were disseminated. It was hoped that where a suggested technique was not successful another technique developed by teachers under parallel conditions might prove useful. Where the failure was due to unsuitable or inadequate resource materials, curriculum developers produced new materials. Where the retraining of heads of schools and teachers was needed, in-service programmes were conducted.

Another approach, as in the Saemaul Movement in Republic of Korea, was to make the villages and schools conscious of their lack of success in contrast to the more successful ones. Observation tours were arranged to the successful villages. Face-to-face discussions on how to overcome failure and obstacles were conducted in face-to-face contact at the Saemaul Leaders Training Institute and at the in-service training sessions for Saemaul teachers and administrators conducted at the National Institute of Educational Research.

In still another approach teachers were involved at the development stage. A good example of failure due to the non-involvement of teachers at the development stage comes from India. It is an example of an attempt to produce a syllabus and instructional materials in subjects like geography and history by expert groups without involving the teachers. This project was undertaken in the 1960s and failed to get off the ground because many states did not accept it. As a result of this experience, teachers are now involved at the development stage and this makes them feel that they are a part of the project.

There may be other approaches in dealing with less successful participating units and hence there is a need to analyze other case studies in Asia in order to learn from past failures.

c) Work loads and incentives

In many curriculum innovations, a heavy demand is placed on teachers. Innovations may call on teachers to play new roles, use new techniques and handle new materials. Motivating teachers, therefore, becomes a key issue in implementation strategies.

Implementing curriculum change

In Sri Lanka every attempt has been made to bring about intrinsic motivation. Every opportunity was taken to explain the thinking and the philosophy behind the innovations introduced so as to make the teachers feel that they are partners in a common enterprise. In school, Ministry and public forums, teachers have been given a place and recognition in keeping with that given to the highest in the Ministry set-up. The right to promotion to the highest berths in the administrative hierarchy has been assured to teachers through the establishment of the Unified Educational Service. Good work is recognized and publicized through reference to such work at conferences and in newsletters. In addition, every opportunity has been provided for professional growth through well-planned and well-designed in-service education programmes. An index of teacher's interest and motivation is their participation in these in-service education programmes. Attendance is left to the discretion of teachers, expenses incurred are not reimbursed but attendance continues to be very satisfactory.

In Thailand, curriculum implementation makes heavy demands on teachers which sometimes make them feel diffident. This situation is met to some extent by teachers and curriculum developers collaborating with one another during the planning and designing of the curriculum. Teachers thus identify themselves with the new programme of studies. Pronounced effort is made to make them appreciate their new roles.

In the Philippines, teachers are involved in the management of innovations. Efforts are directed towards inculcating among the teachers an awareness of their new roles. They are made to realize that their involvement in projects contributes to their professional growth. Teachers involved in innovations are given due recognition.

In the In-School,Off-School Approach, teachers are involved in the management of the project as well as in the development of self-learning kits. At a workshop conducted for teachers, those who successfully completed self-learning kits were awarded certificates. Teachers also play an important role in evaluating the project. The feedback given by the teachers is used in revising and modifying the self-learning kits. Teachers are made to realize that their involvement in the project helps their professional growth and this gives them a feeling of satisfaction.

Much has been done as regards the workloads of teachers in India. To some extent, teachers have consented to bear their loads. Teachers' Association are being increasingly involved in developmental work to give them a feeling of participation in the total national effort. In the matter of motivation, the strategy is to use 'prestige' suggestions and 'majority' suggestions through the Prime Minister, the Minister of Education and others.

One other way used is to adjust the workloads of teachers. For example, in the Saemaul Movement in the Republic of Korea, teachers in charge of co-ordinating the Saemaul Programmes are relieved of other loads such as supervising student activities and counselling.

As for incentives, teachers may participate in the annual research convention sponsored by the provincial and national teacher associations at

which they may present their surveys and studies on Saemaul Education projects. Awards and citations either by the Superintendent of Education or the Minister of Education are made for excellence. Such awards and citations will be taken into account in the scheme of teacher evaluation. In special cases the Presidential Saemaul Award may also be made.

In Indonesia, two approaches are utilized to adjust teachers' work loads. One approach is that of using departmentalized teaching in Grades IV-VI. In this approach, the teacher teaches certain subjects in different classes. In high school, team teaching is encouraged.

Introducing innovation in the new standardized curriculum has made many demands on teachers professionally. They are required to develop built-in test instruments for each lesson unit and conduct measurement and evaluation. Most of the teachers are conscious of this additional work load. It is realized by all people engaged in education including teachers, however, that without such additional responsibilities the profession cannot make headway and the quality of education cannot be improved. It is also recognized that in practice most teachers work only during school hours. In order to implement the new standardized curriculum, the following actions have been taken:

1. Every full-time teacher is required to work in school for the same duration of time as other officials.
2. The practice of appointing class teachers in grades IV-VI is being changed and subject specialists are taking their place.

In Singapore, teachers teach Education for Living (EFL) as a part of their regular teaching loads. This has had the advantage of not overloading the teachers. Some efforts, however, are exerted by the teachers in reorienting themselves to the nature and structure of the new subject. Participation in the EFL in-service course and special services rendered such as assisting in evaluation and developing supportive materials are given due recognition.

d) Role of criticism

The implementation of curriculum innovation aims to improve and reform the teaching/learning process and to make education more efficient and effective. This may lead to changes in (i) the teaching/learning strategy, (ii) the content of education, (iii) the evaluation system, and (iv) the objectives of education.

Changing a traditional system will always bring criticism. For this reason, each of the participating countries has developed a strategy relevant to its social and political context to win broad-based participation and public support. Nevertheless, there will always be criticism during the course of implementation due to (i) unforeseen shortcomings, (ii) the lack of information, (iii) misinformation or (iv) varying views held by the critics. In this regard, participating countries recognize the importance of inviting criticism to make curricula innovation more relevant to societal needs and more effective.

Each country in considering the innovations introduced, however, deals differently with such criticism.

In India the strategy of the NCERT is to identify and pay due regard to the nature of the criticism in order to respond to the critics. All criticism is duly considered and on the basis of such criticism, changes are made where necessary. Where lack of information has led to criticism, the required information is provided. Where the critics have been misinformed, correct information is given.

As is the case in India, the Ministry of Education in Indonesia is responsive to different types of critics. Where critics challenge basic policy such as the decision to introduce modern mathematics into the curriculum, the Minister of Education with his top-ranking staff and advisers invites the critics to discuss matters and explain the rationale. Where necessary, policy is modified. Where criticism is based on misinformation or where it concerns technical matters the officials in charge discuss matters with the critics. Officers up to the level of headmaster have been authorized to confer with critics, depending on the nature of the criticism. A direct dialogue with critics takes place through the mass media.

In the Philippines, comments and suggestions from different interest groups (like Parent-Teacher Associations, Teachers and Community Officials) are studied. Such comments are considered useful in seeking alternative approaches to improve certain aspects of the programmes.

The Singapore EFL project encourages its staff to make use of criticism to develop their awareness of things and to find out laternatives.

In introducing their English syllabus, Malaysia has accommodated criticism as a part of its monitoring programme. Key personnel, inspectors and promotion teams are the ones that deal with criticism.

In Sri Lanka, receptivity to constructive criticism and replanning based on informed criticism where it is felt that such replanning is in keeping with the spirit of the innovation and will lead to better results have been a marked feature of the strategies of implementation. Heads of schools, teachers and even the pupils who are involved in innovations have been called to the Curriculum Development Centre, with all their expenses paid, for no other purpose than to invite their criticism of the programmes. The criticisms offered by pupils have been among the most rewarding and these have been taken into consideration in formulating new programmes and replanning existing ones.

e) Feedback and improvement

The planning and development of curriculum innovation is intended to ensure that the curriculum is made relevant to societal needs and expectations and the learners' level of maturity is in keeping with the developments of science and technology, and is within the capacity of the nation to provide. Thus, efficiency, effectiveness and relevance to current conditions are the basic considerations in the planning and development of a curriculum innovation. In practice, however, we will always find unanticipated short-comings and

weaknesses which arise during the course of implementation. Unanticipated problems may emerge from societal change which may alter the relevance of the programme. Other factors which may hinder effective implementation could be lack of motivation on the part of teachers or inadequate preparation of teachers to handle the innovation or lack of support materials.

For these reasons, it is important to get feedback to improve the implementation of curriculum innovation - even to revise the programme - or take other necessary steps. All participating countries recognize this and have ensured the flow of such feedback from their implementation staff.

In securing feedback and making use of feedback to improve the programme, India, through its NCERT, places a field advisor in every State to keep track of what is happening at the State level. This field advisor is assigned to study the implementation and send in monthly reports to the NCERT. In addition, NCERT sends persons to State-level workshops and conferences to get information about their respective fields of work. A central Advisory Board of Education, attached to the Ministry of Education, meets twice a year to take stock of the situation and make recommendations regarding action to be taken. The members of this body are all the State Ministers of Education as well as nominated Administrators, School Principals, Teachers, University Vice-Chancellors, University Professors, Specialists and members of NCERT. Other agencies that deal with collecting information are the Parliamentary Consultative Committee of the Ministry of Education, Education Division of the Planning Commission and School Division of the Ministry of Education. Thus, both at the central and State levels, there are various agencies to receive the feedback.

Indonesia has developed a feedback strategy that combines a structured feedback with a heuristic one. Two approaches have been adopted to secure the structured information: (1) through a special monitoring programme conducted by a monitoring team; and (2) through an evaluation programme.

The Monitoring Programme which has been carried out to find out problems and difficulties faced by the implementors was meant to develop better manuals, to develop better training programmes, to improve the managerial set-up, and to provide proper educational media services. In this programme, there was no intention to measure the effectiveness and efficiency of the programme but rather to find out whether the innovative programme was implemented as planned. This programme was developed and executed by the Director-General of Basic and Secondary Education and the Office of Educational and Cultural Research and Development. It involved all school supervisors, headmasters and teachers.

On the other hand, an evaluation programme has been developed to measure the efficiency and effectiveness of the programme as shown by student achievement. Two types of evaluation instruments have been developed in five subject areas (Science, Mathematics, Social Studies, Indonesian language and English). They are the formative evaluation instruments and the summative evaluation instruments. In regard to Development School Projects, formative evaluation instruments have been developed to measure the efficiency

and effectiveness of individuals using a module. Summative evaluation instruments have been developed to measure the effectiveness of the semester programme. It is planned that, by the end of 1978, a national evaluation programme will be carried out to measure the effectiveness of the new standardized curriculum in order to renew the programme.

Besides the feedback from the above programmes, conferences are held twice a year to get direct reports from heads of the provincial offices of education and development school leaders.

Evaluation in the Korean Saemaul Movement is conducted by a local team composed of government officials, Saemaul leaders, and community leaders. Annual checks, using a rating scale suggested by the Central Council for the promotion of the Saemaul Movement are made on the progress of the programme. As for the Saemaul education programme, the evaluation system is less formalized. The evaluation takes place through the Saemaul supervisor, conferences of the Local Council for Promotion of the Saemaul Movement outside education, and the regular educational administration network. The feedback is also received through the same channels.

Malaysia, in introducing a New English Syllabus, realized that the success of a feedback system would depend on convincing the persons concerned that their feedback would be utilized and not just stored away. In this regard, four lines of communication were established to get feedback on the implementation. In all cases, this feedback was analysed and not only action taken but teachers were informed through various sources of such action. The first was through questionnaires which centred largely on the quality and variety of resources and materials, prepared centrally and distributed. The second was through the reports of the key personnel who were in close contact with teachers. The third was through the Inspectorate Division, which sent in from time to time reports on their visit to schools. Finally, the promotion team itself visited schools and centres where courses were conducted, to discuss with teachers the shortcomings of the programme and their difficulties in implementation.

In the Philippines, in connection with an innovation known as the "In-School, off-School Approach", various devices are utilized to get feedback on the progress of the project. One device is the test. Tests are given at the beginning, the middle and the end of the school year, to determine gains or growth in cognitive skills of pupils in all subject areas.

Another device used is the 'scale of values for studying and working in-and-off-school' to find out attitudinal change taking place among the pupils.

The third device is a questionnaire on reactions of parents, teachers and pupils. This questionnaire is supplemented by interviews conducted by a monitoring team. This monitoring team was organized to conduct home visits to find out what the pupils are doing during their off-school work.

Singapore, in her EFL project, develops a built-in feedback system to ensure a constant information flow both horizontally among the project staff and vertically from the developers to the higher authority.

Evaluation forms a functional part of the project so that information on the quality and effectiveness of materials developed can be assembled and studies on special problems of the project carried out. On the other hand, field visits are made from time to time by the project staff and members of the Education for Living Standing Committee to better understand problems of implementation as well as to reinforce the teachers' efforts.

Sri Lanka is carrying out its monitoring and feedback through regular contacts with field staff, namely: (a) Regional Directors of Education, (b) appointed regional co-ordinators, (c) the circuit education officers, (d) in-service trainers, (e) heads of schools and (f) subject teachers.

Besides special monitoring sessions conducted at both national and 'regional' levels, as well as school visits, a more formal evaluation using well-prepared evaluation instruments is administered annually. This is carried out in key areas and through a country-wide evaluation of teaching in all the areas under the direction of the Minister of Education.

Feedback also flows in through informal channels. This is through members of the public interested in education, parents interested in the education of their children and parliamentarians interested in their electorates. These are considered very valuable sources of feedback.

Thailand has developed two types of evaluation: an evaluation instrument to measure the effectiveness of the curriculum and an evaluation programme to check the process of implementation. Through completing a questionnaire sent at the end of the school year, students and teachers send their feedback. A special evaluation team has been established to do the work. A survey has been conducted to check the effectiveness of the programme. Thus, both summative and formative evaluation are carried out to get feedback on the effectiveness of the programme.

Chapter Two

NETWORKING OF INNOVATIVE PROJECTS WITHIN AND BETWEEN COUNTRIES

The importance of an easy flow of information on curriculum innovations, both within and among countries, cannot be over-emphasized. Such information may be expected to have at least the following functions:

1. The knowledge that a certain type of innovation is being undertaken in a particular place may focus the attention of other regions in a similar situation to study the innovation in depth, with a view to introducing a similar innovation.
2. The knowledge that a country has solved a problem arising out of implementation in a certain way may help other countries to solve similar problems found in their projects.
3. The knowledge that certain problems have occurred with a particular innovative project may prepare people working on similar projects to take measures to avoid them.
4. The knowledge that a project is made known widely may boost the morale of the project staff. This emotional support is powerful in sustaining the efforts of the developers.

It is therefore necessary to take stock of what has been attempted in various countries with regard to networking of innovative projects.

Central-peripheral communication system

As gathered from the case studies, all the participating nations recognize the important role a central-peripheral communication system can play in making information of curriculum innovations more readily and widely available to professionals and laymen. Such a communication system may be formal or informal, compact or extensive, depending on the nature of the innovation and the education system of the nation. The organization of communication systems varies, as illustrated below.

India

NCERT's Field Officers provide the liaison between the Council and the State governments. They also establish links with various State agencies through organizing in-service programmes for various categories of personnel. Occasional meetings and mutual visits among the various categories are arranged. It is through such a network that mutual influences are made possible. Moreover, a computerized network for collection and dissemination of information has been proposed.

Indonesia

An effective network has been established for a regular exchange of information between the uppermost strata of the Ministry and those involved in the projects at the ground level. Meetings are held at the Ministry Level with the Minister of Education and Culture in the chair, and annual conferences are organized where Heads of Provincial Offices of Education are present and where current problems and innovations are discussed. A similar conference is held for Rectors of Universities and other Higher Education Institutions for a similar purpose. This is followed by meetings of Directors, Project leaders and Heads of the task forces from the BP_3K. Through these series of meetings information flow is ensured both downward and upward.

Republic of Korea

There is a steady upward and downward flow of communication within the formal establishment of the Ministry of Education. Parallel to this the National Institute of Educational Research and Special City or Provincial Institutes of Educational Research generally publish monthly bulletins and research reports on educational reforms including Saemaul Education. Teachers and administrators may also be brought to the Saemaul Leaders Training Institute, National Institute of Educational Research or Teacher Training Institutes attached to Training Colleges and Colleges of Education, where they get information on recent trends in educational innovations - including curriculum innovations.

Malaysia

A formal network exists in the form of State Curriculum Committees which are linked up with the Central Curriculum Committee. Experiences and innovations in the field may thus reach the Committee for use.

Attempts have also been made to establish Subject Curriculum Committees in all schools. Societies promoting the knowledge of certain subjects have been organized by professionals and interested people. Although these societies have no official link with the Ministry of Education or the Universities, they foster the informal exchange of information.

A few Resource Centres have been established, and more are to be set up. These State-based Centres form another kind of machinery through which experience and information can be exchanged.

Information is also exchanged through Key-Personnel, Inspectors and State Education Officers. In-service education provides another channel for information flow.

Philippines

The Information and Publication Service of the Department of Education and Culture publishes and disseminates brochures, reports and pamphlets on curriculum innovation to professionals and interested lay people, at home and abroad. The mass media are also used for the dissemination of information and, for in-service education of teachers, the radio is utilized.

Implementing curriculum change

Sri Lanka

There are formal and informal mechanisms through which information on educational innovation is passed between the centre and the educational regions. Meanwhile, most regions have their own mechanism of a similar nature.

Singapore

The flow of information regarding 'Education for Living' takes the form of (a) discussion at the in-service courses among teachers and with the project staff; (b) periodical surveys of teachers' opinions; (c) consultation between the project staff and the Education Development Officers, who observe classroom teaching; (d) write-ups on the project by the staff and teachers, appearing in the Ministry's publication for teachers, the Teacher's Rostrum, and (e) the establishment of a teachers' resource centre for Education for Living at one primary school. There is also occasional exchange of materials with other countries implementing a similar innovation.

Thailand

The Department of Educational Techniques acts as the clearing house for the information exchange. It collects, classifies, and makes available information on curriculum innovation to all those interested. The mass media are utilized for wider circulation of information. There is also an exchange of information between the Regional Education Centres.

Analysis of information

Although there is some form of communication system in all of the eight participating nations, the method by which information is processed and analysed is not clearly indicated for all countries.

Perhaps the most organized approach to this problem is represented by Indonesia's Centre for Data Processing, Statistics, and Concept Building which is mainly responsible for developing long-term plans and projections.

An example of an established system for the analysis of information is found in the Republic of Korea, where the Chungang University publishes the Korean Education Index. This is a series and lists nearly all articles, theses, and monographs in education in the country.

Dissemination of information

All participating nations have some form of publication for the exchange of information on curriculum innovation. Such publications include regular issues of newsletter and journals as well as occasional papers. Usually, teachers' contributions are solicited, as they are the people 'working in the field' and have intimate knowledge of the effectiveness and problems of the innovative endeavours.

India

The NCERT issue a bi-monthly journal for primary school teachers. It disseminates information reflecting teachers' views as well as reports of innovations.

Indonesia

A Newsletter for the Development Schools Project is to be published monthly. This will be the responsibility of the Centre for Curriculum Development. The Ministry of Education is to publish a monthly bulletin for professionals as well as the public. Moreover, its research reports are published occasionally by the Office of Education and Cultural Research and Development. Besides these, an annotated bibliography on Education is published by the Data Bank Division of the BP3K.

Republic of Korea

There are three major educational weekly papers including one published by the Korean Federation of Education Associations and several educational journals, such as New Education published monthly by KFEA. The KEDI publishes newsletters, quarterly journals and research reports. Radio and television are also utilized to publicize specific aspects of curriculum innovation on the Saemaul Movement and Education. There are a number of other periodical and publications by various organizations.

Malaysia

The Journal of Education, the Education Bulletin, newsletters and the mass media are all used to carry information on curriculum innovation.

Philippines

Monthly journals and magazines contain information on the latest educational development, school activities and abstracts of studies. Teachers are encouraged to write articles for these publications.

Sri Lanka

A newsletter reporting activities and innovations in primary education is circulated among all primary schools. Originally, this newsletter was issued by the central Curriculum Development Centre, but recently there has been an effort to decentralize it.

Besides, Curriculum, Sri Lanka, an occasional publication of the Curriculum Development Centre which keeps visitors and officers on attachment informed of the activities, the Ministry of Education publishes a newspaper providing educational news in both Sinhala and Tamil.

Singapore

Formal reports of surveys and school visits are compiled from time to time for record and reference purposes. Articles on 'Education for Living',

especially those on methodology, appear in the Teachers' Rostrum. They are written by the project staff as well as by teachers.

Thailand

The Centre of Educational Technology and the National Curriculum Development Centre, which are responsible to the Department of Educational Techniques, produce varieties of programmes on radio and television and in print in order to provide the teachers, supervisors, administrators about aspects of innovation.

Sharing of experience in innovations

Besides publications of various types for the dissemination of information, workshops, seminars, and meetings are the mechanisms through which experiences in curriculum innovation are shared, especially among professionals.

India

The NCERT holds occasional meetings for bringing together the innovators in the field. Such meetings are concerned with the sharing of experiences and are followed by mutual visits. Moreover, an annual conference of State Institutes of Education is organized in addition to other conferences at the State level.

Indonesia

A monthly working group meeting is conducted to share experiences in the development and implementation of curriculum innovations in the Development Schools Project. Regional Seminars and workshops on the development of the Science and Mathematics curriculum are planned.

Republic of Korea

The KEDI has held two national seminars on educational innovation in the past. The Korean Society for the Study of Education discussed the problem of educational innovation under the theme "National Development and Educational Innovations" in its annual convention in October 1976.

Malaysia

For sharing experiences in innovation, national conferences are organized by various Divisions of the Ministry. National seminars on specific subject areas are also organized where specialists in these fields meet to discuss and exchange views.

The Philippines

Various meetings are held between members of the public and private institutes which show keen interest in curriculum innovation. Activities and publications of these bodies help the process of experience sharing.

Sri Lanka

Besides publications, other channels through which experiences are shared among interested people include in-service courses, seminars and workshops, as well as informal interaction between officers and teachers and among the teachers themselves.

Singapore

Views, comments, and suggestions made by various people are brought up for discussion at the regular meetings of the Education-for-Living Standing Committee and also those of the project staff. At the in-service courses, experiences are shared between the project staff and the participants as well as among the participants themselves.

Thailand

Meetings held in the provinces provide a mechanism for sharing experiences in curriculum innovation.

Problems

Notwithstanding the effort to promote information flow with regard to curriculum innovation within the nation, the attempt is not entirely problem-free.

First, there is the language problem. In the case of some countries, due to the lack of time among the professional staff and the shortage of secretarial assistants who are fluent in English, a number of publications are not available in English. This is an obstacle to the international flow of information.

Second, there is the problem of the role and functions of the communication network. Although there are established or partially-established networks in many countries, some of them were organized for specific purposes of their own and they therefore may not sufficiently involve people at all levels, a situation which limits their effectiveness as networks for exchange of experiences in curriculum innovation.

A third problem lies with the quality of the information and consistency of the information flow. Some experiences have shown that the use of professional language unfamiliar to teachers and parents may limit understanding of the information. Moreover, financial constraints may also pose a problem on the dissemination and exchange of valuable information on curriculum innovation.

Inter-country 'networking'

'Networking' between National Development Groups (NDGs) as suggested in the Third Regional Consultation Meeting on APEID in January 1976, can be a very useful mechanism for the development of curriculum innovation. But such networking should take into consideration the role of both the NDGs and the Associated Centres. The Associated Centres are those agencies directly involved in the implementation of a curriculum programme.

There is a need to establish two levels of networks. The first one has to link the NDGs of all member countries with a view to exchanging information on the implementation of curriculum innovation. This information should cover the activities of the Associated Centres involved in these innovations. The identification of the Associated Centres within the NDGs which are involved in a specific implementation programme can lead to the establishment of a second-level network. This would consist of a number of networks both bilateral and multilateral among Associated Centres which share a similar approach to implementation, or are facing similar situations in implementation or which are implementing a similar programme.

The objective of the first network is the exchange of information and this may be achieved in two ways. The first is for NDGs either to appoint an Associated Centre to collect all relevant publications and reports for distribution to all the member countries or do it themselves. The second is for a central organization to publish a book of case studies and make it available for circulation to all levels of personnel involved in implementation. The publication of such a book can only be undertaken by a central organization such as ACEID. This publication if it is to be useful has to be very selective and well prepared. An Editorial Board can be established to make a selection of case-studies from outlines of cases and the central organization can sponsor the preparation of the case study based on guidelines set by the Board. All these case studies would be subject to the countrys' approval. This approach to collecting case-studies will ensure not only a regular supply of material but also a variety of Asian experiences.

The second-level link between Associated Centres, because of its specific nature, has to be close. This may necessitate, besides exchange of material and exchange of correspondence, regular visits between members of Associated Centres. It could also entail the establishment of internships during specific phases of the implementation programme. These exchanges are necessary for a close study of implementation strategies which may be adopted or adapted for their use.

Chapter Three

SUMMARIES OF CASE STUDIES

The participants of the Technical Working Group were of the view that the case studies as presented should find a place in this symposium of country experiences. It was their view that summaries of these studies with due consideration to brevity, to keep the symposium within manageable proportions, would not provide the wealth of detail that was provided in the originals. However, it was finally agreed that all the salient points should be included within an agreed format and an agreed length. What follows is the result of this decision.

The country experiences are as varied as the countries themselves. The case studies selected also follow this variegated pattern. Some countries, like India, Indonesia and the Philippines have selected for study macro-level innovations. India discusses the introduction of the new curriculum in the new structure of school education; Indonesia presents pre-university education; and the Philippines, the In-School,Off-School Approach (ISOSA) to an economical and effective delivery of mass primary education. Other countries like the Republic of Korea, Malaysia, Singapore, and Sri Lanka have case studied innovation at the micro-level of a particular project. Malaysia discusses her new English curriculum; Singapore, Education for Living; and Sri Lanka, Pre-Vocational Studies. Thailand comes in between and discusses the new curricular reforms in Science at the two levels of MS 1, 2 and 3 (Grades VIII, IX and X) and MS 4 and 5 (Grades XI and XII).

To assist those further interested in these studies the name of the persons or institution connected with each study is also provided.

Implementing curriculum change

India: *Introduction of new curriculum in the new structure of school education*

Background

In 1968, the Government of India issued a policy decision, embodied in the form of a Government resolution, accepting the main recommendations of the Education Commission (1964-66). One of the recommendations was a new structure of school education, which is popularly known as the 10+2 scheme. The structure which existed was of an 11-year school followed by one year of pre-university education before admission to professional courses like those of medicine and engineering, or followed by three years of a first-degree course in the sciences, arts or commerce. In the 10+2 scheme, the school extends up to 12 years, after which there will be a three-year first-degree course, or professional courses of four or five years.

Further, during the period 1968-72, there were large-scale student disturbances in the colleges and the universities expressing dissatisfaction over the prevalent courses of studies, examinations and the unemployment. The failure in the public examination at the end of the 11-year-school were large. The rate of drop-out at the primary stage of school education continued to be high.

The Education Commission had noted that school education was bookish and so had recommended that work experience should be a regular feature of school education. They had recommended further that the school curriculum should be linked with national goals of development. After the first ten years of school during which science and mathematics should be compulsory for all, there should be a diversification of higher secondary courses into two broad areas: (i) academic courses leading to higher education and (ii) vocationalized courses leading to entry into work and employment.

The absence of relevance to life of the curriculum was increasingly noted by many. The entire curriculum was dominated by the public examinations set by the Boards of Secondary Education which made memorization the most important task for students. The rigidity of the system was such that individual differences in the rates of learning were not recognized at all whereas, due to governmental policy and planning, large numbers of students were coming into the educational system from backward sections of the society. Once a student dropped out of the school in the early years for various reasons, including poverty, he could not enter the school again except at the point where he had left off. But by that time he would have grown up and could not fit into the classroom of youngsters far below his age.

It is against this background that the NCERT started work on the development of a new curriculum.

Objectives

The objectives were to develop a curriculum for the 10+2 system of schooling. The following matters received consideration:

1. The specification of the instructional objectives at the primary, secondary, and higher secondary stages of the school in a manner consistent with and directly related to the national goals of development and the values enshrined in the constitution of the Republic of India.
2. The need to make the curriculum relevant to all sections of the people through the provision of a common core and the addition of units according to the needs of the community.
3. The rigidity imposed by the examination had to be reduced.
4. Science and mathematics, work experience, vocationalization and values would have to be a necessary part of the curriculum.
5. Flexibility at the higher secondary stage would have to be introduced to allow for interchange between the academic and the vocational students.
6. The gap between the school and the community had to be bridged by bringing the school and the community together.
7. The need for flexibility in the curriculum and school procedures and practices to provide for the education of drop-outs.

Implementation

It was apparent that, in order to attain the objectives, it was necessary to involve persons from all levels and from various areas in the process of curriculum development itself.

The NCERT developed a document on the new curriculum for the first ten years of schooling and another document for the subsequent two years, at the higher secondary stage. The drafts were prepared by expert committees. The draft documents were placed before the States, who were asked to hold seminars and meetings involving experts, teacher education, teachers and education officers. The Field Advisers of the NCERT as well as the Regional Colleges of Education of the NCERT were asked to do likewise. They were asked to send back to NCERT the comments, criticisms and suggestions made in such meetings. On the basis of this, the drafts were revised. The revised drafts were placed before two national conferences, one for each of the two drafts. In these national conferences, all the States were invited as well as representatives of Boards of Secondary Education, Teachers Associations, Teacher Educators Association, experts, teachers and selected laymen. On the basis of the discussion in the conferences, the drafts were further revised and the final documents were printed and released for wide dissemination.

On the administrative side, the Ministry of Education, Government of India, called a meeting of the Central Advisory Board of Education and a meeting of the Education Secretaries and Directors of Education of the States and discussed the curriculum particularly from the point of view of administrative,

financial and other wider implications. The Planning Commission was also involved in these meetings.

In the meantime, work is under way in the NCERT to prepare the detailed syllabi, the textbooks and other instructional materials including teaching aids and guides for continuous evaluation.

An important aspect of implementation is teacher training. Plans have been made to start a massive orientation programme of teachers in service. This involves the Regional Colleges of Education of the NCERT, some training colleges for secondary school teachers in each State and some training schools for primary school teachers in the States. NCERT has planned training programmes for teacher educators of the States, to be carried out by the Regional Colleges of Education. The Teachers' Associations also have been involved in implementation.

Non-formal education projects have been started by the NCERT where the school is directly engaged in developmental work and learning is through working. Children who drop out are particularly involved in such programmes. The teachers are from the villages and are not the so-called qualified teachers. They are skilled workers and village-level workers. Some are Government servants, but others are farmers, artisans and the like. Outside the NCERT, there are several such attempts going on in the country to integrate education with life. NCERT gives support to such centres.

Problems and issues

1. There is a problem of teachers competence. The new curriculum requires a new orientation in teaching science so that the sciences are integrated not only in an inter-disciplinary fashion, but also with the environment of the community.
2. In the matter of work experience, there is a problem of the teachers' own attitudes towards labour and their attitude towards those in the community.
3. There is a problem of overloading the students.
4. There is a problem of maintaining a consistent perspective from the point of values in all the variety of materials produced.
5. A related problem is that of the urban bias in all materials produced.
6. The necessity for the teacher to follow methods of teaching which would promote self-learning, creativity, problem-solving and sharing participation. Teacher training is crucial to success in getting teachers to adopt such methods.
7. The problem of changing the examination system is a difficult one. Therefore, the task is to prepare the communities of scholars, teachers, administrators and employers for the change-over to a system of continuous teacher evaluation without any pass or fail at the end.

Impact

It is too early to comment. The implementation process is underway. It has touched millions of people in all walks of life, through the press, radio,

television, meetings and journals. All the States in India have agreed to adopt the new curriculum and the textbooks produced by the NCERT. They have agreed to a phased programme of change-over to a semester system and internal evaluation.

Specific features

1. In the new curriculum for the first ten years, there will be science and mathematics for all. Science will be taught through an interdisciplinary approach. For experimentation in classrooms, science kits have been produced by the NCERT. Science will be taught as laboratory-based disciplines in the two years of higher secondary education for those who wish to proceed to higher education. It will be a general interdisciplinary course for those who take vocationalized education courses.
2. There will be history and geography from grade VI to grade X.
3. There will be three languages for all up to grade X.
4. There will be work experience for all grades.
5. There will be physical education and art education.
6. At the higher secondary stage of two years, 25 per cent will be course common to both the academic and vocational streams. The remaining 75 per cent of the courses will differ between the academic and vocational streams. There will be courses to bridge the change from academic to vocational and vice versa where such change becomes necessary.
7. There will be a phased programme leading to a complete change to internal and continuous evaluation by the teacher.
8. Knowledgeable persons from outside the school will also teach in the school in such areas as work experience, art education, and physical education.
9. Schools will participate in developmental work and become the focal points in the village for developmental activity and community education.

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Indonesia *The curriculum development and development school pilot project*

Background

Since 1968/1969 the Indonesian strategy for educational reform has changed; equal emphasis is placed on the increase in the people's access to education and on solving major problems under four areas, namely (1) equality; (2) quality; (3) relevance; and (4) efficiency and effectiveness.

In short, the Indonesian educational reforms are designed to develop a mass system of education which is efficient and effective in preparing a well qualified citizenry with attitudes relevant to individual and the societal goals.

Objectives

General

1. To improve the curriculum of pre-university education to be more relevant, efficient and effective.
2. To gradually reform the system of pre-university education so as to make it:
   (a) efficient, effective and relevant to individual and societal needs as reflected in the educational programmes offered;
   (b) a base for life long education;
   (c) realistic in relation to the resources and capabilities of the Indonesian Government, society and people.

Specific objectives

1. To develop student-centred courses in all subject areas for all age levels;
2. To develop courses at the school level which prepare the students for employment in rural as well as urban areas and also for those continuing their studies in colleges and universities;
3. To develop courses and a management system which are sufficiently flexible to cater to the varied interests, needs, and potentialities of students;
4. To develop courses that are sensitive to the environment of the individual and contribute to national spirit and identity;
5. To develop effective means of providing the necessary material and human resources including improved buildings, materials, and teachers;
6. To develop a system for comprehensive and continuous evaluation of students and courses; and
7. To develop guidance and counselling procedures designed to assist each student to derive the greatest benefit from the available educational opportunities.

Implementation

There are two parallel programmes to achieve the objectives:

1. an on-going to improve the existing curricula; and
2. a long-term programme using pilot schools known as the Development School Pilot Project to reform the curricula through research and development activities.

The implementation of the programme will follow four basic stages:

1. The pre-planning stage

   Identifying education objectives relevant to national development needs and national aspirations.

2. The planning stage

   2.1 For the Development School Pilot Project, the activities are:
   - a) Planning a master design approved by the National Sanctioning Workshop;
   - b) Developing operational programmes; and
   - c) Developing basic structure and organization of the curriculum for elementary and secondary education.

   2.2 For the Programme for Standardizing the Curriculum for introducing innovative ideas, the activities are:
   - a) Formulating institutional objectives of each school level; and
   - b) Developing the basic structure and organization of the curriculum at certain school levels.

3. The development stage

   3.1 For the Development School Pilot Project this stage includes:
   - a) Developing basic course outlines for all subject areas;
   - b) Developing an instructional programme using a modular institutional system as the teaching-learning strategy based on mastery-learning concepts;
   - c) Preparing modular programmes for teacher education;
   - d) Training teachers to manage classes that use the modular system;
   - e) Conducting of trials; and
   - f) Experimenting for dissemination.

   3.2 For the Programme of Standardizing the Curriculum, this stage includes:
   - a) Developing the basic course outline of each subject area at each school level; and
   - b) Writing manuals and textbooks.

4. The dissemination stage

This includes:

a) Training the teachers;
b) Producing manuals and textbooks;
c) Distributing teacher's manual, textbooks, and educational media;
d) Conducting a working conference with educational leaders; and
e) Conducting training workshops for school principals, supervisors, and curriculum officials.

To carry out this programme the required organizational structure has been established.

Problems and issues

In implementing this programme the following problems and issues have been identified:

1. How to involve the employers in the process of curriculum reform;
2. How to ensure that curriculum innovation is relevant to the needs of national development;
3. How to ensure that the process of planning and development of curriculum innovation is consistently conducted;
4. How to involve the implementor in the process of curriculum innovation;
5. How to motivate the implementor;
6. How to prepare and distribute supporting materials; and
7. How to organize the institutional framework to enable the administrator, implementor, and developer to communicate effectively in order to ensure efficient implementation.

Impact

The following impact is expected:

1. The turn out of better qualified graduates relevant to societal expectations;
2. The creation of a more efficient and effective system of mass education; and
3. The provision of a more relevant and functional education.

Specific features

1. The following are the specific features of the standardized curriculum:

1.1 The adoption of an output-oriented approach in developing instructional programmes;

1.2 The adoption of a broad-field approach in curriculum organization;
1.3 The inclusion of a skills training programme (pre-vocational education) as a part of general education;
1.4 The introduction of new mathematics, integrated science, social studies, Panca Sila education, and skills-oriented language-teaching programme; and
1.5 The introduction of a continuous evaluation system.

2. The following are the specific features of the Development School Pilot Project:

2.1 Introduction of continuous progress as the basis of classroom management;
2.2 Inclusion of the modular instructional system as its teaching-learning strategy;
2.3 Adoption of the mastery-learning concept as the basis for the teaching-learning strategy;
2.4 Introduction of a new structure of education: 5+1, 3+1, 3+1;
2.5 Introduction of a flexible system of majoring at the senior high school level;
2.6 Development of a multi-entry-exit system; and
2.7 Introduction of a special vocational training programme for pupils not continuing their education.

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Implementing curriculum change

Republic of Korea: *Saemaul Education - Focus on its curricular aspect*

Background

In the decade of the 1960s priority in the Republic of Korea's national developmental goals was given to industrialization. In the second developmental decade of the 1970s a balance has been brought about between industrialization and agricultural development and, in addition, emphasis was given to spiritual revolution. The Saemaul Movement, or the New Community (or Village) Movement, originally proposed by President Park Chung Hee in 1970, is the materialization of these shifts in national developmental goals, for which Saemaul Education is its educational aspect.

Objectives

Saemaul Education broadly aims at improving the social relevance of education by bridging education and society - socializing the school on the one hand and educationalizing the society on the other. More specifically, its objectives are: (i) to tailor the curriculum to community needs; (ii) to foster the Saemaul spirit of diligence, self-reliance and co-operation among students and the community; (iii) to prepare the community to be of service to students and provide productive adult education programmes for the community; (iv) to develop demonstrational projects in schools which aim to increase the production and earnings of the community; and (v) to make the school as a cultural centre of the community.

Implementation

The implementation of the Saemaul Movement and Saemaul Education is typically characteristic of a combination of centralized policies, guidelines and support on the one hand, and decentralized programme selection and implementation under the initiative of local leadership on the other. It combines efficiency with democracy, centralized direction with a large degree of flexibility and creativity, government support and local initiative. In the case of the Saemaul Movement, the progressive improvement in stages from the Basic Village to the Self-relying Village and finally to the Self-supporting Village has been achieved and more recently, the Movement has expanded to the urban areas. In the case of the Saemaul Education programmes, 158 schools have been providing intensive adult education programmes entitled Standing Saemaul Schools, while every elementary or secondary school is now providing modest adult education programmes entitled 'The Standing Saemaul Class'. This is now a nation-wide phenomenon.

Problems and issues

Although the overall direction of the Movement has been generally accepted, problems remain to be solved. In the case of the Saemaul Movement, lack of effective local leadership in some communities is the greatest

problem. In the case of Saemaul Education, teacher apathy due to heavy workloads has,in some cases, been the greatest hindrance.

Impact

The impact of the Saemaul Movement has been tremendous, bringing forth visible changes in many of the rural communities in terms of the improvement of their environmental conditions, increased production and earnings, and even of change in their attitudes and habits. Although the impact of the Saemaul Education programmes is less visible, some of the successful cases provide testimony of their contribution. It is now generally accepted that the Saemaul Movement, including Saemaul Education, is one of the most significant and successful policies in present-day Korea with far-reaching impacts on Korean national development.

Specific features

Prominent features of the Korean Saemaul Movement, and Saemaul Education, include the following: (i) combination of central support and local initiative; (ii) emphasis on the increase of production and earnings as well as on spiritual rejuvenation; and (iii) its implementation on a nation-wide scale and its categorization as of top priority among the national movements.

Source and contact persons

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Malaysia: *Implementation of the new English curriculum in Forms IV and V.*

Background

The new English syllabus was completed and presented to the Central Curriculum Committee (CCC), (the approving authority) in October 1975. The CCC came to the unavoidable conclusion that the syllabus must be implemented in both national secondary schools and national type (English) secondary schools in January 1976 and all students must take a common English examination by the end of 1977.

The Promotional Team consisted of four members from the Language Unit of the Curriculum Development Centre: a Language Planning Officer, two Curriculum Officers and one teacher.

Objectives

Broadly viewed, English is to be taught as an effective second language, in line with the education policy. Specifically, the programme seeks to enable the students:

1. to communicate effectively and be internationally intelligible in their speech;
2. to understand any form of instructional or recreational material written in English of a level relevant to their stage of learning; and
3. to write effectively and with precision for different purposes.

The communication syllabus is designed to realize the above objectives.

Since the new syllabus was communication-based, there would be a need for the teachers' instructional strategy to be altered.

To ensure the effectiveness of implementation, a monitoring system would have to be established to receive feedback and for action to be taken to assist the implementors.

Implementation

a) Promotional procedure

The structure of the promotional organization was two-tiered: (i) a central organization set-up in the Curriculum Development Centre; and (ii) State organizations, co-ordinated by State Language Officers. The central organization was responsible to the Central Curriculum Committee where all administrative, financial and professional matters are approved. The State organizations, consisting of the State Language Officers, key personnel and the respective regional inspector as adviser, were in close contact with teachers and responsible for ground level promotion, within the guidelines set by the central organization.

b) Preparation of a promotional organization

The establishment of State-level infrastructure for the promotion of the new curriculum was set as the first priority of implementation. Senior English teachers were identified to be key personnel in this promotion exercise. The role of the key personnel, besides their normal teaching, is stated below:

i) to disseminate information to the implementors;
ii) to liaise with teachers and assist them in the interpretation of the innovations contained in the syllabus;
iii) to encourage teachers to utilize the local resources available, for implementing the new curriculum effectively; and
iv) to monitor the implementation of the new curriculum and to provide the central organization with feedback.

c) Central promotion organization

Besides being involved in setting up the State organizations, the central organization was involved in a number of promotional activities, including among others, the following:

i) to produce teaching-learning material for use by teachers, the distribution of which was carried out by the State-level organization;
ii) to carry out, in conjunction with the State, the first promotional drive to enlist the co-operation of all headmasters of secondary schools;
iii) to disseminate information about the new curriculum to the public and the teachers through the press, radio and television; and
iv) to collate feedback and take action on such feedback.

During the promotional phase, the members of the central organization were involved in the briefing of publishers and in the evaluation of textbooks; providing ground-level feedback to the examination panels responsible for the format and procedure of the written and oral examinations; and negotiating with the Schools Division for the increase in the allocation of time for English and for the release of key personnel, two days a week, to visit schools and assist teachers.

d) The State organization

The State organization was responsible for the direct promotion of this curriculum to the implementors and for reviewing the feedback and relaying it for action to the central organization.

Courses were held at district level by key personnel, and teachers who were in need of assistance were visited at their schools.

The State organization also distributed resource material and sent the feedback on the quality of the material to the developers of the material.

Some of the key personnel were also involved as external evaluators of textbooks, while others served on examination panels. Their expertise was

called upon by several agencies of the Ministry of Education, both at national and State levels.

Problems and issues

The first issue to be considered was the preparation of the key personnel to equip them for their role as innovators and disseminators of information.

The second one centred on the in-service training of teachers. The procedures adopted for providing 'knowledge' about the syllabus, was not found to be conducive to learning. Also, the model for teaching prepared by the key personnel was not adequate and comprehensible.

Two other problems, both relating to the content of the syllabus, were (a) the suggested situations and resource material were unsuitable for rural students; and (b) the programme lacked a linguistic component to meet the needs of the teachers with low English proficiency classes.

Impact

The initial impact on teachers was one of confusion. The teachers had not been trained to interpret the syllabus and the sprinkling of linguistic terminology in the programme, rather than aiding comprehension, only added to the confusion.

The public was apprehensive of the term 'communication'. Where situations were suggested for the development of certain language skills, they tended to interpret it as the teaching of principles, values or morals. Public criticism of the new syllabus was voiced largely through letters in the press.

After about six months, however, when teachers had been provided in-service education, the criticism diminished considerably.

Specific features

The programme provided for a great degree of flexibility in the teachers' selection of situations and determined the level at which they could commence and the time they could devote to each 'Area'.

Another feature was the involvement of key personnel in the developmental and promotional aspects of implementation.

Further, key personnel also undertook to provide professional assistance to teachers during their visits to the schools.

Finally, the mobility of the promotional team at both the central and State levels provided not only constant feedback but also enabled the team to provide the implementors greatly needed psychological support to sustain their interest.

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Philippines: *In-school-off-school approach*

Background

The Philippine public school system has always been nagged by the problem of inadequate funds for buildings, textbooks, teaching positions and other essential needs. The government has consistently followed a pattern of yearly appropriating as much funds as possible for the salaries of new teachers to meet the demands of enrolment increments. The amount for salaries alone was so huge, representing almost 90 per cent of the entire education budget that the other essential needs were always slighted.

In the face of other national development needs, it would be impossible, even unwise, for the government to try to meet increased educational needs through the mere expedient of scaling up appropriations by the same ratio as the increase in school population. Innovations that call for innovative organizational schemes, management systems, teacher-pupil relationships and utilization of resources must be designed to provide the elements of basic education to the burgeoning school population.

One such innovation is the In-School Off-School Approach (IS-OSA) whose major aim is that of maximizing the utilization of the resources of the school and the community and at the same time increasing educational efficiency. It is an imaginative thrust towards achieving an economical and effective delivery of mass primary education. Its strategy is to double the utilization of teachers, rooms and other facilities used for a class of 40 by accommodating 80 pupils.

The idea of the IS-OSA project was first presented by Dr. Liceria B. Soriano at the INNOTECH Seminar held in Saigon in 1973. After that the project was started and tried out in eight school divisions using one Grade IV class in each division during the school-year 1974-1975. Experimental IS-OSA classes in first year high school have also been set up in six school divisions during the school-year 1975-1976.

Actually, the project is a feasibility study that will determine whether or not the approach will possibly offer a solution to the persistent problem of how to bring down the cost of delivering mass primary education by utilizing community resources as part of the education laboratory. The community has emerged as the most promising medium for spanning the gap between what the learner knows and what he does. This is believed to be possible through the restructuring of class organization by adopting an alternate in-school off-school scheme, a reorientation of the curriculum by making it community-based and finally developing a climate of acceptance of the innovation among teachers, school officials, parents and the community as a whole.

Objectives

The main objectives of the project and the specific questions to be answered relative to each are as follows:

1. To try out a possible approach to an economical and effective delivery of mass primary education, the specific questions to be answered are:
   a) How effective is the IS-OSA in developing in the pupils life skills along the continuum of learning in the following areas: Communication Skills (Reading and Language in Pilipino and in English) Mathematics, Science, Araling Panlipunan?
   b) How effective is the IS-OSA in developing in the pupils the right attitudes and values?
   c) Which type of lessons in each subject lend themselves best to purely in-school treatment; to purely off-school treatment; or to a combination of both?
2. To prepare, try-out, revise and print Self-Learning Kits (SLK) and other instructional materials for the off-school phase of instruction in Communication Arts, Mathematics, Science, and Social Studies.
3. To determine whether IS-OSA will help minimize the incidence of drop-outs (school leavers).

Implementation

IS-OSA was introduced in Grade IV of one English experimental primary school, in each of the eight school divisions of the country during the school-year 1974-1975. Grade IV pupils were chosen because it is believed that they have already completed a three-year learning continuum of each subject and this will also allow a three-year evaluation of the results of the study at the time pupils finish Grade VI.

During the school-year 1975-1976 six pilot high schools were chosen to try-out the IS-OSA in first year in six school divisions.

The approach is partly institutionalized since the "in-school" portion of the process is undertaken in the school within the framework of institutionalized practices and partly de-institutionalized since all non-formal activities of learners which are contiguous with in-school learning take place "off-school".

Among the priorities attendant to the implementation of the project are: (i) Orientation meetings on the IS-OSA with school officials, teachers, officials of the community, parents and other human resources of the community on the rationale and mechanics of its implementation; (ii) Preparation of Self-Learning Kits, instructional materials and evaluative instruments based on the learning continuum, and (iii) Survey of community resources which may be grouped into (a) human, (b) material, (c) institutional and (d) cultural.

In the organization of the class, 80 pupils are assigned to each teacher; 40 (Group A) report to her for one week while the other 40 (Group B) undertakes off-school work. The following week, Group B reports for in-school instruction while Group A does off-school work. Throughout the year this in-school off-school pattern is adopted.

While half of the teacher's class is on off-school work the other half is with her in the ordinary classroom structure. The focus of the classroom instruction is on sharpening the learners' tools for learning to learn; so that they can be more effective independent learners during the off-school portion of the time.

The off-school time of the learner is devoted to individualized learning through SLKs which consist of self-learning specific skills or information and corresponding source materials, a list of community resources that may be utilized as well as reinforcement exercises which allow each learner to work at a rate, style and level suited to his capabilities and learning mode.

Problems and issues

There are a few major problems which have been identified. The first problem is the inadequacy of scientifically produced self-learning kits for use in the off-school phase. Teachers have to teach and they have also to prepare the SLKs. It is felt that all teachers are not adequately equipped with the skill of preparing SLKs. Some of the SLKs are defective and are now being revised. Secondly, it is highly unrealistic to expect individual teachers to teach efficiently and prepare good SLKs at the same time. The consensus is that a separate core of teacher-writers who are free from teaching do the preparation of the SLKs. Thirdly, there is a certain degree of probability that the work expected of the child in the SLKs off-school, might be prepared not by the child but by the parents or by elder brothers and sisters, thus defeating the very purpose of the SLKs.

Impact

Results of the tests given to determine gains or growth in the cognitive skills revealed progress of pupils in all subject areas significant at the one per cent level.

Using the Scale of Values for Studying and Working In- and Off-School developed and validated specifically for the study, reflected results which suggest that a positive attitudinal change has taken place among the pupils.

Even as highly significant positive gains and changes were reflected in the results of evaluations after one year of its (IS-OSA) implementation, such results have to be interpreted with caution. Since the project is being undertaken to determine its feasibility in Philippine setting, a consideration of other variables including a control group to make the results more meaningful has not been included.

It may not be completely safe therefore to conclude that the gains achieved by the pupils after one year can be credited to the IS-OSA or simply to the normal process of development brought about by various learning experiences.

A questionnaire on reactions of parents, pupils and teachers on the project revealed negative attitudes towards the project as reflected in their responses. While this may partly be due to man's universal nature of resistance to change, it may not mean that the project is totally ineffective.

Specific features

1. Potential for 100 per cent increase of teacher/pupil ratios. Pupils receive full-time classroom instruction in school for one week and spend the following week at home working on self-instructional materials and as apprentices with workers in the community;
2. Economy in costs and use of school facilities to serve twice the number of pupils being served in the old scheme;
3. Development and use of programmed self-learning kits (SLK). These kits can be reproduced and applied with modifications - on a wider scale;
4. Better utilization of community resources (human, material, institutional and cultural). During off-school weeks the pupils need support from parents, peers and other resources persons in selecting and mastering learning units useful to them. They also find opportunities to visit and make use of local libraries, zone, parks, workshops, community resource centres, newspapers, radio and TV facilities, and youth clubs;
5. Active participation and involvement of the community in the learning experiences and activities of the pupil is encouraged;
6. Experiences are provided for non-formal education through alternate weekly "de-institutionalized" learning;
7. Learning experiences of pupils are enriched through off-school activities instead of limiting their learning activities within the four walls of their classrooms; and
8. Potential school leavers who intend to drop-out due to "boredom in classroom" or because "they need to help their parents" are given their "breaks" through the in-school-off-school activities, thereby inducing them to continue their studies.

Source

"Inventory of Educational Innovations"
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Singapore : *Education for living*

Background

Education for Living (EFL) is a moral-social education programme for primary school children in Singapore. It has emerged as a response to the national and social needs of a young, rapidly changing and industrializing, multi-ethnic nation.

Objectives

The project is an attempt to develop in the younger generation of Singaporeans a strong sense of national identity, an understanding of the historical and geographical environments of the nation as well as the relations between man and his social and natural environments, and the treasured values of both eastern and western traditions.

Implementation

The project was launched in 1974, without experimentation in the traditional sense. In 1974, pupils in Primary I and Primary II classes learned EFL for the first time. Primary III pupils were reached in 1975 and Primary IV in 1976. It is expected that by 1978 the full cycle of six primary school years will be completed.

Problems and issues

As EFL adopts the interdisciplinary approach, the emphasis to be placed on each component subject and the integration of the subjects into a cohesive whole can, at times, pose some problems for the project staff.

However, the solution is that, since EFL is essentially a moral-social education programme, civics should be the prime concern or the focus. Nonetheless, learning of history and geography is by no means neglected, though by necessity less systematic and academic. It is believed that the interdisciplinary approach will render the learning of these two traditional subjects more meaningful.

Impact

As attitudinal and behavioural changes take time to occur, it is readily appreciated that the impact EFL might have on the pupils can be assessed only after the project has been in force for a sufficient length of time. However, relevant data for an interim indication of the effectiveness of the project have been encouraging. Behavioural anecdotes of pupils as reported by teachers and parents suggest that the project is influencing the pupils as desired.

Specific features

The Education for Living Programme has the following innovative features:

Implementing curriculum change

1. An interdisciplinary approach is adopted and the subject matter is drawn from the three traditional subjects: Civics, Geography and History.
2. It is taught in Chinese, Malay and Tamil (the three 'mother tongues' of the major ethnic groups of the population).
3. EFL textbooks are published in Chinese, Malay and Tamil. They not only follow the same syllabus, but also have the same content and illustrations.

Source and contact person

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Sri Lanka: *Breaking down the barriers between the school and the community - the introduction of pre-vocational studies into the curriculum*

Background

The following quotations from the Five Year Development Plan of the Government of Sri Lanka explain the background against which pre-vocational studies were introduced into the curriculum of the Junior Secondary School Grades VI through IX, beginning in Grade VI:

"The basic shortcoming of the country's educational system is that the academic type curricula are framed to cater to the needs of that small minority of the output of the educational system who having reached the GCE (Ordinary-Level) compete for the very small number of jobs available as doctors, engineers, administrators or teachers. Of the others, a small number obtain employment in the clerical, technical and service occupations, while the rest begin the interminable wait for the white-collar jobs that are not there. Judging from results it is no exaggeration to say that the social returns to educational investment have been negligible, if not negative."

The Five Year Plan went on to add,

". . . . . but a curricular reform can do at least two things. Firstly, it can equip the rising generation with the knowledge and the skills necessary for development. Secondly, it can inculcate in them an appreciation of what activities are important for the country's development . . . . .

The main objective of the curricular change that is to be inaugurated from 1972 is to integrate the academic and vocational aspects of education in the general school system. It seeks to equip students with a good general education together with a basic familiarity with one or more vocational opportunities available to them. This does not mean any reduction in academic content. What it means is that the materials taught and the whole idiom of teaching has meaning for the student and will stand him in good stead when he leaves the system."

In short what was being attempted was to correct what one writer had so aptly called the 'over hang of history'.

Objectives

Pupils completing pre-vocational studies were expected:

a) to be able to execute selected manual skills related to the vocations studied with an appropriate degree of proficiency;
b) to be able to comprehend appropriate aspects of selected vocations;
c) to have knowledge of the major vocations practised in the community;
d) to be aware that knowledge gained in other studies such as mathematics and science and social studies can be applied to the study of vocations; and

e) to feel confident and proud of their ability to participate in the production of marketable goods and services.

Implementation

The implementation of the programme was carried out as follows:

i) Winning the support of the people by explaining the purpose and intent of the programme. This was done through the mass media, Ministry handouts and face-to-face contact.
ii) Carrying out micro-level studies with a view to gathering the necessary experience and testing the ideas formulated before actual field implementation.
iii) Providing an orientation to the teachers, heads of schools and Ministry officials.
iv) Providing for the in-service education of the teachers who were actually involved in the teaching of pre-vocational studies.
v) Involving the community in the tasks of:
   a) selecting the vocations for study,
   b) curriculum development,
   c) assisting teachers as resource persons in teaching,
   d) assisting the in-service educators in the in-service education of the teachers, and
   e) assisting the Curriculum Development Centre staff in evaluating pre-vocational studies.

Problems and issues

Major educational innovations make both parents and teachers feel insecure. Winning their support and co-operation is a major hurdle in the way of successful implementation.

Getting community participation in full measure takes time to achieve. Financial and other procedures that are applicable to the perpetuation of the old order provide no help at all in the promotion of innovation of this type.

The non-availability of technical literature, the inadequacy of equipment and other facilities and the inability of developing countries like Sri Lanka to divert adequate resources to meet all of the human and material requirements necessary in the country-wide implementation of a major educational innovation such as that involved in bringing almost the whole of the occupational profile of the country into the school system for study, needs to be recognized.

Impact

In concrete terms the impact of this innovation has been:

a) to break down the barriers that existed between the school and the community;
b) to give to the pupils a curriculum of value that would help them when they join society;

c) to change the concept of 'teacher' which was hitherto applied to signify one who had a paper qualification; and
d) to extend the frontiers of education as hitherto understood. (Education was one and indivisible and to attempt to compartmentalize it into general education, academic education and vocational education was a spurious endeavour).

Specific features

The innovative features of the programme that are relevant to this discussion are:

i) the acceptance of the idea of community participation in education;
ii) the acceptance of the idea that the teacher and the community have a vital role to play in the process of curriculum development itself;
iii) the decentralization of evaluation procedures in the scheme of national certification; and
iv) the give-and-take between the school and the community in which the community brings its technology to the school and the school, whilst benefiting from it, tries to benefit the community by contributing to the improvement of such technology.

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Implementing curriculum change

Thailand: *Institute for the Promotion of Teaching Science and Technology (IPST)*

Background

The Institute was established in August 1970 by the Government of Thailand with assistance from the United Nations Development Programme and Unesco. Its mandate is to develop the curriculum in science and mathematics at the school level; promote new teaching and learning methods in Science and Mathematics in Thai schools; undertake the mass production of science equipment, textbooks, Teacher's Guides and Audio-visual aids covering the whole range of science education; and improve the pre-service and in-service training of teachers in co-operation with the Teachers Training Institutes.

The Institute started its work at the upper secondary level and then gradually extended it to lower secondary level. The curricula and materials developed by the Institute were first tried out in 20-30 schools in Bangkok and neighbouring provinces. An experimental-developmental phase of about three years was envisaged before the new curricula were to be implemented in all schools in the Kingdom.

Implementation

After the preliminary work of recruiting personnel and organizing administrative services had been completed, curriculum design teams were formed to prepare new curricula for Chemistry, Physics and Biology at MS 4 and 5 levels (Grades XI and XII) and Unified Science (General Science) at MS 1, 2, 3 (Grades VIII, IX and X). Each team consisted of teachers, supervisors, media specialists, instructors from teachers' colleges, and specialists from the universities. The work of each team was backed up by appropriate academic services, such as test and measurement, equipment design and construction, etc. Particular attention was given to close co-ordination among various teams.

The design teams (the subject committees) followed generally the same pattern of work described below:

- determination of general and behavioural objectives;
- laying out of new curriculum;
- identification of methods of teaching and evaluation;
- preparation of draft textbooks and teachers guides;
- review and revision of draft textbooks and teachers' guides;
- mini-trial of lessons with students and collection of data; and
- revision of textbooks and teachers' guides.

The draft curriculum of each subject was implemented on a trial basis known as the Trial School Programme under which schools were selected to put the new curriculum into practice.

While half of the teacher's class is on off-school work the other half is with her in the ordinary classroom structure. The focus of the classroom instruction is on sharpening the learners' tools for learning to learn; so that they can be more effective independent learners during the off-school portion of the time.

The off-school time of the learner is devoted to individualized learning through SLKs which consist of self-learning specific skills or information and corresponding source materials, a list of community resources that may be utilized as well as reinforcement exercises which allow each learner to work at a rate, style and level suited to his capabilities and learning mode.

Problems and issues

There are a few major problems which have been identified. The first problem is the inadequacy of scientifically produced self-learning kits for use in the off-school phase. Teachers have to teach and they have also to prepare the SLKs. It is felt that all teachers are not adequately equipped with the skill of preparing SLKs. Some of the SLKs are defective and are now being revised. Secondly, it is highly unrealistic to expect individual teachers to teach efficiently and prepare good SLKs at the same time. The consensus is that a separate core of teacher-writers who are free from teaching do the preparation of the SLKs. Thirdly, there is a certain degree of probability that the work expected of the child in the SLKs off-school, might be prepared not by the child but by the parents or by elder brothers and sisters, thus defeating the very purpose of the SLKs.

Impact

Results of the tests given to determine gains or growth in the cognitive skills revealed progress of pupils in all subject areas significant at the one per cent level.

Using the Scale of Values for Studying and Working In- and Off-School developed and validated specifically for the study, reflected results which suggest that a positive attitudinal change has taken place among the pupils.

Even as highly significant positive gains and changes were reflected in the results of evaluations after one year of its (IS-OSA) implementation, such results have to be interpreted with caution. Since the project is being undertaken to determine its feasibility in Philippine setting, a consideration of other variables including a control group to make the results more meaningful has not been included.

It may not be completely safe therefore to conclude that the gains achieved by the pupils after one year can be credited to the IS-OSA or simply to the normal process of development brought about by various learning experiences.

A questionnaire on reactions of parents, pupils and teachers on the project revealed negative attitudes towards the project as reflected in their responses. While this may partly be due to man's universal nature of resistance to change, it may not mean that the project is totally ineffective.

Specific features

1. Potential for 100 per cent increase of teacher/pupil ratios. Pupils receive full-time classroom instruction in school for one week and spend the following week at home working on self-instructional materials and as apprentices with workers in the community;
2. Economy in costs and use of school facilities to serve twice the number of pupils being served in the old scheme;
3. Development and use of programmed self-learning kits (SLK). These kits can be reproduced and applied with modifications - on a wider scale;
4. Better utilization of community resources (human, material, institutional and cultural). During off-school weeks the pupils need support from parents, peers and other resources persons in selecting and mastering learning units useful to them. They also find opportunities to visit and make use of local libraries, zone, parks, workshops, community resource centres, newspapers, radio and TV facilities, and youth clubs;
5. Active participation and involvement of the community in the learning experiences and activities of the pupil is encouraged;
6. Experiences are provided for non-formal education through alternate weekly "de-institutionalized" learning;
7. Learning experiences of pupils are enriched through off-school activities instead of limiting their learning activities within the four walls of their classrooms; and
8. Potential school leavers who intend to drop-out due to "boredom in classroom" or because "they need to help their parents" are given their "breaks" through the in-school-off-school activities, thereby inducing them to continue their studies.

Source

"Inventory of Educational Innovations"
Department of Education and Culture
National Research and Development Center for Teacher Education
Manila, Philippines

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PUBLICATIONS OF ACEID RELATED TO CURRICULUM FOR DEVELOPMENT

Available from Unesco, Bangkok

APEID. *Teacher Education and Curriculum for Development*. Bangkok, Unesco Regional Office for Education in Asia.

The above is the report of a Regional Planning Workshop on Teacher Education and Curriculum for Development held in May 1975 at Quezon City, Philippines. This workshop reviewed analysed trends in educational innovation for development in tries of the participants and prepared guidelines for [illegible] ricula for learners and for teacher training institutions in to national efforts for development, particularly with [illegible] basic functional education.

This workshop also prepared a suggested plan of work for [illegible] duction of exemplar modules and other training materials for ing the workshop and developed guidelines for the organization regional training courses.

APEID. *Science in Basic Functional Education: Philosophy, Aims, Methods and Materials*. Bangkok, Unesco Regional Office for Education in Asia, 1975. 49 p.

This is the report on a meeting held in the Republic of Korea in July 1975 to discuss issues in science education, to develop a philosophy of science education and to suggest guidelines for instructional programmes and for the preparation of modules. Science education is one of APEID's six major programme areas and its philosophical foundation is documented in this publication. On that basis, the role of the teacher in science education is spelled out and appropriate methods, materials and media are discussed.

APEID. *Co-operation in Curriculum Explorations: Report of a High-level Personnel Exchange Workshop*. Bangkok, Unesco Regional Office for Education in Asia, 1975. 52 p.

This report is based on the sharing of experiences of nine high-level curriculum personnel from four countries who met in Pakistan from 1 to 10 November 1975. It demonstrates how a meeting which has not been previously structured may be conducted in order to achieve desirable outcomes. Two chapters following the introduction give an account of new concepts in education and experiences related to current curriculum activities in the participating countries which served as the data base for the further deliberation of the meeting. In Chapters IV and V, problems and strategies of curriculum designing and implementation are presented together with suggestions to solve the problems. Chapter VI, the last chapter, gives recommendations to strengthen collaboration in curriculum development among member countries as well as among centres/institutions. Recommendations on activities to be undertaken by ACEID/Unesco to promote collaboration are also given.

APEID. *Science in Basic Functional Education: Links with Real-Life Situations*. Bangkok, Unesco Regional Office for Education in Asia, 1975. 40, xv p.

This document came out of a Technical Working Group which met in Manila in November 1975 to discuss science education at the first-level of schooling. The group's deliberations focused on the content of science education, its organization by discipline and the most effective approaches to its delivery. The links between science and real life were examined through an analysis of several selected situations in the areas of rural transformation, health and nutrition and employable skills. Included in the report are several recommendations related to the production of exemplar modules for science education.

APEID. *Curriculum Development for Work-Oriented Education*. Bangkok, Unesco Regional Office for Education in Asia, 1975. 61 p.

In September-October 1975, a seminar jointly sponsored by APEID and NIER was held in Tokyo to discuss work-oriented education in Asia and to promote curriculum development for its improvement. This document reports on that meeting. It includes observations on several Japanese educational institutions. The report's recommendations reflect the APEID philosophy on relating learning to work.

APEID. *Education for rural development: report of a Preparatory Meeting*. Bangkok, Unesco Regional Office for Education in Asia, 1976. 41 p.

This is the report of a Preparatory Meeting held from 24-28 August 1976 at Jakarta, in collaboration with the Office of Educational, and Cultural Research and Development (BP_3K), Ministry of Education and Culture, Republic of Indonesia. Exchanging the experiences of projects on Education for Rural Development at both micro and macro levels, the meeting focused its attention on the implementation phase of innovation at the community level, inter-departmental co-operation and co-ordination of activities of the sub-systems of education itself. The meeting determined the objectives and the expected outcomes of, and formulated guidelines for the organization and modes of operation for, the National Workshops and Advanced-Level Workshop on Education for Rural Development.

APEID. *Towards strategies of curriculum change: report of a High-level Personnel Exchange Workshop*. Bangkok, Unesco Regional Office for Education in Asia, 1976. 46 p.

This report covers the deliberations of the High-Level Personnel Exchange Workshop on Curriculum Development organized in collaboration with the Korean Educational Development Institute from 2 to 10 August 1976 at Seoul, Republic of Korea. The report covers the analysis and synthesis of innovative experiences of five countries on curriculum development, and identifies 41 items of common concern in curriculum development. These common concerns are grouped in four categories: (i) organizational infrastructure; (ii) problems connected with curriculum design; (iii) problems of implementation; and (iv) problems

of evaluation. Possible ways to overcome the problems in curriculum development and suggested follow-up have also been indicated.

APEID. *Curriculum for development; analysis and review of processes, products and outcomes: report.* Bangkok, Unesco Regional Office for Education in Asia, 1976. 83 p.

This is the report of the Sub-Regional Curriculum Workshop held in Colombo, Sri Lanka from 1 to 30 October 1976, in collaboration with the Sri Lanka Foundation Institute and the Curriculum Development Centre, Ministry of Education, Sri Lanka. The workshop discussed the criteria for the analysis of the curricula in the three areas of health/nutrition, skills training and rural transformation of grades VI through IX/X and developed broad guidelines for the development and use of criteria for their own countries. Through observation and participation in curriculum development projects and practices, the workshop prepared general suggestions for devising instruments for collecting data about a village and developing guidelines for their administration. The workshop also did exercises in preparing exemplar instructional materials in the above three areas and suggested steps in preparing curriculum materials for rural transformation.

IBE and ACEID. *Integrated approach to curriculum development in primary education in Sri Lanka.* Paris, Unesco, 1976. 25 p.

Prepared by Miss K. Peiris, Director of Education, Ministry of Education, Sri Lanka, the study describes the background which necessitated an integrated approach to curriculum development at the primary level, and the strategy used in designing and implementing the plan, both at the central and regional levels.

IBE and ACEID. *Integrated science in the junior secondary school in Sri Lanka.* Paris, Unesco, 1976. 31 p.

Prepared by Mr. A.M. Ranaweera, Director of Education, Curriculum Development Centre, Sri Lanka, the study gives comprehensive background information on science curriculum development from 1957 until the present day and how, after the 1972 educational reform, science became an important subject in general education curriculum for grades VI to IX and took the form of integrated science.

IBE and ACEID. *Education for Rural Development through the Youth Civic Action Programme: report of a Philippine National Workshop.* Bangkok, Unesco Regional Office for Education in Asia, 1976. 79 p.

This report contains the proceedings of a National Workshop on Education for Rural Development, which took place in Malolos, Bulacan, Republic of the Philippines from 14-18 November 1976. The objective was to organize and re-energize the Youth Civic Action Programme, under which students at all levels of the educational system participate in community development activities. The report includes detailed plans of action as to how various agencies intend to collaborate to further this programme as well as general information on education and how it should relate to rural development in the Philippines.

PUBLICATIONS RELATED TO CURRICULUM

Available from Unesco, Bangkok

1. *Teacher education and curriculum for development, 1975*
2. *Science in basic functional education: approaches, methods and materials, 1975*
3. *Science in basic functional education: links with real-life situations, 1975*
4. *Curriculum development for work-oriented education (in collaboration with NIER, Tokyo) 1976*
5. *Co-operation in curriculum explorations, 1975*
6. *Towards strategies of curriculum change, 1976*
7. *Lifelong education: the curriculum and basic learning needs, 1976*
8. *Integrated approach to curriculum development in primary education in Sri Lanka (in collaboration with IBE) 1976*
9. *Integrated science in the junior secondary school in Sri Lanka (in collaboration with IBE) 1976*
10. *Curriculum for development: analysis and review of processes, products and outcomes, 1976*
11. *School science education in India (Curriculum Development Centres series, No. 1), 1977*